CISCO™

Cisco Product
Quick Reference Guide

An overview of many Cisco products, services, and solutions
for every part of your business

August 2010

Introduction

Cisco Product Quick Reference Guide

Everything you need in one compact guide

Welcome to the **August 2010** edition. This edition is all new, including a brand new look, more than 45 new products, new architecture and solution overviews, and several new product and service updates across all technologies.

The Cisco Product Quick Reference Guide presents an overview of many Cisco products, services, and solutions for every part of your business. It is a portable, easy-to-use reference tool that includes brief overviews, important features, technical specifications, part numbers, and ordering information for many of Cisco's products sold through our channel partners. It meets the information needs for companies of all sizes.

Designed for our Cisco field and partners, this guide will help you learn about and sell Cisco products that are right for your customers. It is also ideal for end users, networking professionals, Cisco Networking Academy members, and those studying for Cisco certification needing a broad, high-level overview.

This guide includes only a subset of Cisco's product portfolio. Additionally, because this guide is published only twice per year, there are likely to be new products and part numbers not included in this edition. For the most up-to-date information and the complete product portfolio, refer to the Cisco website at http://www.cisco.com.

What's New and Updated?

This edition presents many of Cisco's key innovations and product updates:

- New section on Cisco Architectures and Solutions for Your Business
- New Cisco 2000 Series Connected Grid Router and Cisco Integrated Services Routers Generation 2 (ISR G2) 3900, 2900, 1900, and 800 Series
- New CRS-3 model for Cisco Carrier Routing System and new Cisco ASR1013 model for the Cisco ASR 1000 Aggregation Routers
- New product updates to Cisco Catalyst 6500, Catalyst 3750, and Catalyst 3560 Switches
- New Cisco 2500 Series Connected Grid Switches, Cisco Catalyst 3750-X, Cisco Catalyst 3560-X, and Cisco Catalyst 2960-S Series Switches
- New small business products, including the Cisco Unified Communications 500 Series for Small Business, Cisco SPA 500 Series IP Phones, and Cisco Small Business SA 500 Series Security Appliances; new additions to the guide are the Cisco Small Business SRP 500 Series Services-Ready Platforms and Cisco Small Business ESW 500 Series Switches
- New service provider products, including the Cisco ME 3600X Ethernet Access Switches and Cisco ME 3800X Carrier Ethernet Switch Routers; new additions to the guide are the Cisco ME 6500, ME 4900, ME 3400, and ME 3400E Switches.
- New Cisco Aironet 3500 and Aironet 1260 Series Access Points; and new product updates to Cisco Aironet 1250 and Aironet 1520, antennas and accessories, and the Cisco Wireless Control System
- New Cisco Prosumer Video, Cisco Flip MiniPRO, Cisco FocalPoint, Cisco Unified Communications on the Cisco Unified Communications System, Cisco Intercompany Media Engine, Cisco Unified IP Phones 8900 and 9900 Series, Cisco Unified Survivable Remote Site Voicemail, Speech Connect for Cisco Unity Connection, and SpeechView
- Several new product updates to the Cisco Collaboration portfolio, including Cisco Voice Gateways, Cisco ATA 187 Analog Telephone Adaptor, Cisco Unified Communications Manager, Cisco Unified Communications Business Manager Edition, Cisco Unified Communications Manager Express, Cisco Unified SRST, Cisco Unified IP Phones 6900 Series, Cisco Unified Attendant Console portfolio, Cisco IP Communicator, Cisco Unity Connection, Cisco Unity Express, Speech Connect for Cisco Unity meeting applications, Cisco Unity meeting applications, Cisco Unified Messaging, Cisco Unified Messaging Gateway, Cisco Unified Mobile Communicator, Cisco Unified Customer Voice Portal, Cisco Unified Workspace Licensing, and Cisco Unified Communications Software Subscription
- New Cisco AnyConnect Secure Mobility solution, Cisco TrustSec solution, and many new product updates to the Cisco Security portfolio
- New Cisco TelePresence System 1100, 3010, and 3210, Cisco TelePresence Commercial Express, and Cisco WebEx Mail
- New Cisco Nexus 4000 Series Switches, Cisco UCS B-Series Blade Servers, and Cisco UCS-C Series Rack Mount Servers
- New product updates to the Cisco Digital Media portfolio and universal broadband routers

- New Cisco LCD Professional Series displays, Cisco Show and Share, Cisco Pulse technology, and Cisco MXE 3500 and MXE 5600 Media Experience Engines
- Two new chassis for the Cisco ONS 15454 MSTP: the M2 and M4; and new product updates to Cisco Transport Manager
- New Cisco Carrier IP NGN Management Solution and Cisco Network Building Mediator Manager; and new product updates to CiscoWorks LAN Management Solution, Cisco Unified Operations Manager, Cisco Unified Service Monitor, Cisco Unified Provisioning Monitor, and Cisco Unified Service Statistics Manager
- And much more...

For More Information

For more information about the guide and to register in the Document Center, visit http://www.cisco.com/go/guide. When you register in the Document Center, you will be notified when new editions are released and also receive access to the PDF and HTML versions when they become available.

We always look for your input and guidance to make this guide more useful. Please send your feedback to feedback_ciscoguide@cisco.com.

Cisco, the worldwide leader in networking that transforms how people connect, communicate, and collaborate, this year celebrates 25 years of technology innovation, operational excellence, and corporate social responsibility.

Contents

Cisco Architectures and Solutions

Learn about the following Cisco architectures and solutions for your business:

- Borderless Networks
- Collaboration
- Data Center
- SBA Designs for Midsize Organizations
- IP-Next Generation (IP NGN)
- Small Business
- Industry Solutions

Cisco Borderless Network Architecture and Solutions

A Next-Generation Architecture That Delivers the New Workplace Experience

Connect anyone, anywhere, using any device, to any resource, securely, reliably, and seamlessly. The Cisco Borderless Network architecture uses the power of the network to deliver a media experience that enhances productivity and streamlines operations to increase flexibility, resiliency, and security.

With the following new additions to the Borderless Networks portfolio, Cisco delivers powerful systems capabilities that allow you to increase business innovation with video, mobility, and security:

- **Security—Cisco TrustSec Solution**
  Build a Secure Borderless Network and gain the visibility and control you need to know who uses your network and what they do on it. Cisco TrustSec technology helps you secure borderless networks with confidence, consistency, and efficiency for better collaboration anywhere, any time, and from any location.
- **Green—Cisco EnergyWise Technology Solution**
  Regain control of network and facilities energy usage to help manage and reduce your company's energy costs and carbon footprint. The newly released Cisco EnergyWise Orchestrator integrates PC power management for both LAN and WAN connected devices into your Cisco EnergyWise domain.
- **Video and media—Next-Generation Medianet Solution**
  The intelligent, networkwide capabilities of Cisco Borderless Networks helps identify video applications and endpoints, and optimize the delivery of rich media to any device, in any location.
- **Mobility—Cisco Motion Solution**
  Deliver borderless mobility, boost flexibility and productivity, and extend the enterprise by delivering highly secure, rich, and manageable network services to teleworkers and employees working outside the traditional office environment.

Cisco has an expansive product portfolio that can help you accelerate business growth by using technological innovation. You can reduce total cost of ownership, gain ease of operations, and get transparent, highly secure connectivity.

- **Switching**—Get more than connectivity with Cisco Borderless Networks in your LAN. Expect more from your network, and save more on operations through innovations such as Cisco EnergyWise.
- **Routing**—Enhance productivity and minimize total cost of ownership with next-generation routing solutions that deliver a superior customer experience, increased architectural scalability, and investment protection.
- **Security**—Reduce costs and complexity with an architectural and systems approach to security. Use Cisco Secure Borderless Networks to deliver a reliable, anytime, anywhere, and highly secure experience.
- **Mobility**—Increase user productivity and business agility with an industry-leading wireless network that opens new opportunities for mobile applications and reduces reliance on IT resources.
- **Application performance**—Deliver consistent application performance regardless of location with Cisco Borderless Networks performance solutions.

For more information about Cisco Borderless Network Architecture and Solutions, visit http://www.cisco.com/go/borderless.

Cisco Collaboration Architecture and Solutions

Ensure Interoperability, Introduce New Capabilities, and Break Down Boundaries to Improve Collaboration

Business today increasingly requires interactions among companies, including partners and suppliers. The people you work with may be spread across time zones, sometimes even globally, and you may never meet many of them face-to-face.

Information from these interactions is hard to prioritize and process; it comes in constantly from many sources, from email messages, texts, blogs, and video to voicemail, and through many devices: laptops, desk phones, and cell phones.

The Cisco Collaboration Architecture helps ensure interoperability between existing and new forms of communication and collaboration technologies, further enabling both structured and impromptu business processes. Individual components can be implemented onsite to use existing infrastructure to best advantage; they may be offered as hosted software-as-a-service solutions or deployed as a combination of the two. The Cisco Collaboration Architecture comprises the following layers:

- **Network Services**—Help ensure end-user quality of experience by providing the foundation for network-enabled collaboration.
- **Medianet Services**—Optimize video and other forms of rich, interactive media.
- **Collaboration Services—**Streamline collaboration and break down application silos with open, secure, reusable capabilities.
- **Client Services**—Provide programmatic access to collaboration services for custom development and integration with traditional environments.
- **Collaboration Applications**—Streamline workflow and optimize decision making with software and purpose-built hardware that facilitates robust communications.
- **Devices**—Provide freedom and flexibility in accessing collaboration tools and services by allowing teams to work in the manner that suits them best.

The two capabilities that span all layers:

- **Security Services—**Protect all layers of the architecture from constantly evolving threats.
- **Management Services—**Streamline management across operations, administration, maintenance, and provisioning.

Founded on the Cisco Collaboration Architecture, Cisco Collaboration solutions, along with services from Cisco and our partners, can help you build more effective teams across corporate boundaries, companies, and continents. You can deploy the solutions in any order, at a pace that matches your business objectives. Cisco Collaboration solutions include:

- **Conferencing—**Take advantage of a wide range of voice, video, and web offerings with on-premises and on-demand conferencing solutions. Extend the reach of your workforce with advanced audio, web, and video conferencing capabilities that are compelling, productive, and cost-effective.
- **Customer Care—**Promote true customer intimacy, satisfaction, and loyalty with IP contact center solutions that proactively connect customers with the information, expertise, and support they need at the times and places they need it.
- **Enterprise Social Software—**Accelerate decision making by helping employees, customers, and partners quickly find, access, and share relevant business information using secure, collaborative software applications, automated expertise, and media locators.
- **IP Communications—**Boost productivity with the most popular enterprise voice system, which includes a full suite of IP communications solutions and advanced media and collaborative meeting endpoints. Extend consistent communications services to employees, whether they work at the main campus, at branch offices, or remotely.
- **Messaging—**Encourage productivity and accelerate business processes by enabling employees to access and deliver messages through any medium, anywhere, on any device.
- **Mobile Applications—**Increase mobile employee productivity and responsiveness to customers while controlling mobile costs by making mobile devices extensions of the enterprise network.

- **TelePresence—**Invigorate business processes and encourage true customer intimacy with everyone, everywhere with telepresence solutions. Cisco TelePresence technology creates live, face-to-face experiences so users can to collaborate like never before.

With Cisco Collaboration, you will enjoy a new level of freedom and flexibility in the way people connect, communicate and collaborate.

For more information about Cisco Collaboration Architecture and Solutions, visit http://www.cisco.com/go/collaboration.

Cisco Data Center Architecture and Solutions

Cisco's Data Center 3.0 allows you to continue to use IT as a strategic resource to pursue new opportunities and mitigate challenges to the business. Based on an architectural approach that blends innovative technologies, services and ecosystem partnerships to strategically and holistically address business needs, Data Center 3.0 allows IT to have a direct and positive impact on the business.

- **Infrastructure Consolidation**—Cisco infrastructure consolidation solutions and services can help you improve agility and reduce costs.
- **Energy Efficient Data Centers**—The Cisco Efficiency Assurance Program and data center solutions can help you reduce the budgetary impact of rising power costs and corporate sustainability and compliance initiatives, enhancing your IT team's ability to support sustainable business growth.
- **Data Center Interconnect**—Cisco Data Center Interconnect (DCI) solutions enable IT organizations to meet business continuance and corporate compliance objectives. These solutions transparently extend LAN and SAN connectivity and provide accelerated, secure data replication, server clustering and workload mobility between geographically dispersed data center sites.

Cisco offers one of the broadest solution portfolios to offer its customers. Beyond industry-leading products, technologies, and professional services, Cisco has a world-class ecosystem of partners to ensure customers can create no-compromise solutions.

- **Data Center Switching**—The Cisco Nexus Family is the first data center class switch designed specifically with the needs of the data center in mind. However, Cisco data center solutions are designed to also allow customers to take advantage of their existing investment in Cisco Catalyst switches.
- **Storage Networking**—Storage networking solutions based on the Cisco MDS Family provide a platform for IT departments to achieve lower total cost of ownership (TCO), enhanced resilience, and greater business agility.
- **Unified Computing**—The Cisco Unified Computing System (UCS) represents a radical simplification of traditional architectures, dramatically reducing the number of devices organizations must purchase, deploy, and maintain. Cisco UCS delivers end-to-end optimization for virtualized environments while retaining the ability to support traditional OS and application stacks in physical environments.
- **Application Networking**—By taking advantage of consolidated network, server and storage capabilities and virtualizing these key components, Cisco ANS can help IT teams provide users with more responsive and better performing applications and services, both in the data center and branch office.
- **Security**—Cisco's expertise in securing enterprise architectures helps you combine enablement with protection. Our security solutions can help you protect your people, information, applications, and network.
- **Professional Services**—Cisco Services make networks, applications, and the people who use them work better together. With a collaborative delivery methodology that joins the forces of Cisco, our skilled network of partners, and our customers, we achieve the best results.

For more information about Cisco Data Center Architecture and Solutions, visit http://www.cisco.com/go/datacenter.

Cisco SBA Designs for Midsize Organizations

Implement Solutions and Services Easier Across the Following Architectures: Borderless Networks, Collaboration, and Data Center

The Cisco SBA Designs for Midsize Organizations delivers prescriptive network design and deployment best practices for implementing Cisco architectures in midsize organizations with 100 to 1000 end users.

Designed to grow and evolve with your business, it provides a platform for deploying advanced technologies from Borderless Networks, Collaboration, and Data Center architectures. Working with leading technology partners, we can provide a complete solution.

- **Cisco Borderless Network Architecture**—The Cisco Borderless Network architecture is designed to allow secure, reliable, and transparent access anytime, anywhere, from any device. The Cisco Borderless Network architecture has capabilities such as security and policy, which encompass Cisco's two other main architectures (Collaboration and Data Center). What sets it apart, however, is that it delivers a set of critical network services: green, security, video, and mobility.
- **Cisco Collaboration Architecture**—The Cisco Collaboration architecture is designed to help midsize organizations build more effective teams across corporate boundaries, companies, and continents. Organizations can improve interactions, encourage innovation, make better decisions, and increase customer responsiveness. The Cisco Collaboration architecture brings together capabilities from IP communications, conferencing, messaging, and mobile applications to deliver these benefits.
- **Cisco Data Center Architecture**—The Cisco Data Center architecture is a network design that delivers more resilience, flexibility, and efficiency to your data center assets. It also lets you incrementally build out a best-practice architecture based on a proven foundation.

Cisco has tested and validated the solutions together—simplifying the process for the customer while building the right level of intelligence into every product; products are specifically selected and tested for the midsize business.

For more information about Cisco SBA Designs, visit
http://www.cisco.com/go/smartarchitecture.

Cisco IP Next-Generation Network (IP NGN) Architecture

Comprehensive Service Provider Platform for Delivering The Connected Life

Cisco is committed to enabling sustainable Service Provider success by helping our global customers effectively address four key interlinked strategic areas:

- Deliver compelling and differentiated services to all target customers (residential, business and mobile) that subscribers can personalize.
- Optimize network and business operations—Achieve bottom-line savings as well as top-line growth.
- Capitalize on near-term and long-term opportunities with an intelligent, flexible and scalable network that meets consumer demand for innovation and supports subscriber growth.
- Leverage an open, standards-based IP infrastructure to build strategic alliances with application/content providers and device manufacturers (et al) to create new services and revenue streams.

Cisco is uniquely able to provide the networking solutions, technical experience and expertise, and supporting resources to help service providers reach their goals. The Cisco IP NGN architecture provides fundamental enablers for video, mobile Internet, and data center/cloud-based services.

- **Service Provider Medianet**—Deliver a more visual, social, and personal experience to end users with comprehensive medianet technologies that include video networking solutions for home and business customers. A medianet represents the migration of today's networks to an all IP NGN network optimized for rich media delivery. Medianet is network-aware, device-aware, and media-aware solution that is designed to adapt to the way media services are delivered across multiple devices, networks, and locations.
- **Mobile Internet**—The Cisco 4G Mobile Internet solution addresses mobile carriers' network, focusing on IP aggregation and cell sites. It enables cost-effective, secure deployment of

mobile backhauling transport networks. Cisco is leading the 4G Mobile Internet transformation, allowing users to have the ability to connect to any device using any technology to access resources and information that are personalized to meet their needs.

- **Data Center/Cloud**—Cut costs, optimize resource use, and deliver a secure virtual experience across your entire service portfolio with the Cisco Unified Service Delivery (USD) solution, which provides a single/common infrastructure and a host of benefits. Within the data center, Cisco combines a set of industry leading solutions that provide virtualized storage and unified computing power; end-to-end delivery of IP services with multiple features; and multi-layer security tailored to identify and eliminate the latest threats.

The Cisco IP NGN architecture effectively integrates each of these distinct application-oriented solutions. Beyond the proven routing/switching strengths that these solutions offer, they also provide service-specific innovations that deliver enhanced qualities for video, mobile Internet, and data center/cloud services that encompass our holistic Connected Life vision. Cisco IP NGN solutions can serve as the intelligent platform to transform the business and consumer experiences you deliver to subscribers at home, at work, and on the move. For more information on Connected Life, visit http://www.cisco.com/go/connectedlife.

For more information about Cisco Service Provider Solutions, visit http://www.cisco.com/go/sp or http://www.cisco.com/go/ipngn for the Cisco IP NGN Architecture.

Cisco Small Business Solutions

Technology You Can Trust to Help Your Business Succeed

Cisco Small Business technology can help you connect your business to the world, secure it, and communicate more effectively using reliable, affordable options that fit your unique needs. A local reseller, backed by Cisco support and expertise, can help make the right choice simple.

We have divided network capabilities and our product portfolio into three categories:

- **Connect to the World**—Cisco has everything you need to connect your business to the world—simply, reliably, and affordably—in a broad portfolio of routers, switches, VPN firewalls, and wireless access points.
- **Secure My Business**—Cisco can help secure your small business, with network security that combines firewall, VPN access, and intrusion prevention, along with e-mail and web threat protection, IP video surveillance cameras and software, and storage solutions that can help keep your business operational.
- **Communicate and Collaborate**—Cisco can help you collaborate by bringing together your phone, e-mail, text, conferencing, and video in complete solutions that allow your employees to communicate from anywhere, using virtually any device, on any network—enabling you to be more productive.

Cisco resellers can access the Small Business Product Guide by visiting Small Business Partner Central: http://www.cisco.com/go/smbpartner.

For more information about Cisco Small Business Solutions, please visit http://www.cisco.com/go/smallbusiness.

Industry Solutions from Cisco

Whether you are in education, financial services, government, healthcare, manufacturing, or retail, industry solutions from Cisco are designed and developed around your business imperatives. We implicitly understand what you go through every day. How? Because the people behind the technology are people like you.

They have been former district managers, plant specialists, brokers, police officers, deans, and nurses. These people bridge your world and ours, making our industry solutions uniquely suited to answer your everyday and long-term challenges.

We can help you translate technology into benefits you can use. The opportunity to make things better using technology is here. Working with our partner ecosystem, we can implement solutions that help streamline business processes, improve collaboration, reduce costs, and drive innovation and growth.

Our solutions are centered on you and the industry you serve.

For more information about industry solutions from Cisco, visit:

- Industry solutions—http://www.cisco.com/go/industry
- Education solutions—http://www.cisco.com/go/education
- Financial services solutions—http://www.cisco.com/go/financialservices
- Government solutions—http://www.cisco.com/go/government
- Healthcare solutions—http://www.cisco.com/go/healthcare
- Manufacturing solutions—http://www.cisco.com/go/manufacturing
- Retail solutions—http://www.cisco.com/go/retail

Product Warranty Information

All Cisco hardware and software products are covered for a minimum of 90 days. Some products have longer coverage periods. All Cisco warranties apply to the Customer or Original Owner (the individual who purchased the product for their own use), also referred to as the End User, and are not transferable.

To find the warranty that applies to a specific product or product family, visit the Cisco Warranty Finder at http://www.cisco-warrantyfinder.com.

For more information about Cisco warranties, visit http://www.cisco.com/go/warranty.

Warranty[1]	Entitlement Descriptions
Cisco Standard 90-Day Limited Hardware Warranty, Software Warranty and License Agreement (78-523-vvrr)	· Warranty Duration: Ninety (90) days · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on Customer location. · Software Warranty: Ninety (90) days · Warranty provides that the media on which the Software is furnished will be free of defects in materials and workmanship under normal use and that the Software substantially conforms to its published specifications. · Software is provided "AS IS" and in no event does Cisco warrant that the Software is error free or that Customer will be able to operate the Software without problems or interruptions. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco.) · Warranty allows guest access only to Cisco.com
Cisco 90-day Limited Hardware Warranty (78-5236-vvrr)	· Warranty Duration: Ninety (90) days · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on Customer location. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco) · Warranty allows guest access only to Cisco.com
Cisco End User Software License Agreement and Limited Software Warranty (78-3621-vvrr)	· Warranty Duration: Ninety (90) days · Warranty provides that the media on which the Software is furnished will be free of defects in materials and workmanship under normal use and that the Software substantially conforms to its published specifications. · Software is provided "AS IS" and in no event does Cisco warrant that the Software is error free or that Customer will be able to operate the Software without problems or interruptions. · Software warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, commences not more than ninety (90) days after original shipment by Cisco). · The End User License Agreement grants to Customer a nonexclusive and nontransferable license to use for Customer's internal business purposes the Software and the Documentation for which the Customer has paid the required license fees. · Warranty allows guest access only to Cisco.com
Cisco 1-Year Limited Hardware Warranty (78-10747-vvrr)	· Warranty Duration: One (1) year · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on Customer location. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco) · Warranty allows guest access only to Cisco.com
Cisco 2-Year Limited Hardware Warranty (78-16341-vvrr)	· Warranty Duration: Two (2) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on Customer location · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco) · Warranty allows guest access only to Cisco.com

Cisco 5-Year Limited Hardware and 1-Year Limited Software Warranty (78-13712-vvrr)	· Hardware Warranty Duration: Five (5) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement product for delivery within fifteen (15) working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on Customer location. · Software Warranty Duration: One (1) year · Warranty provides that the media on which the Software is furnished will be free of defects in materials and workmanship under normal use and that the Software substantially conforms to its published specifications. · Software is provided "AS IS" and in no event does Cisco warrant that the Software is error free or that Customer will be able to operate the Software without problems or interruptions. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Limited Lifetime Hardware Warranty (78-6310-vvrr)	· Warranty applies to Catalyst Express 500, Catalyst 2960, 3560, 3560-E, 3750, 3750-E, 4500, and 4500-E Series Switches; Cisco Aironet Access Point 11n products · Warranty Duration: As long as the original End User continues to own or use the Product, provided that: fan and power supply warranty is limited to five (5) years. · In the event of discontinuance of product manufacture, Cisco warranty support is limited to five (5) years from the announcement of discontinuance. · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on Customer location. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Enhanced Limited Lifetime Hardware Warranty (78-19324-01)	· Warranty applies to Cisco Catalyst 2960-S, 3560-X, and 3750-X Series Switches · Warranty Duration: As long as the original end-user customer continues to own or use the product, except for the fan and power supply, which are limited to 5 years. · In the event of discontinuance of product manufacture, Cisco warranty support is limited to five (5) years from the announcement of discontinuance. · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement for next business day delivery, where available. Otherwise, a replacement will be shipped the same business day as the RMA request is received, subject to fulfillment warehouse cut-off times. Actual delivery times might vary depending on reseller and customer location. Taxes, duties, and import fees might apply. · Technical Assistance: Cisco will provide during local business hours, 8 hours per day, 5 days per week basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased product. This support does not include solution or network-level support beyond the specific device under consideration. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco ESW 500 Switches Warranty (78-19226-01)	· Warranty Duration: Five (5) years · Hardware Replacement: Cisco will use commercially reasonable efforts to ship a replacement part for next business day advance hardware replacement where available. Where next business day delivery is not available, Cisco will use commercially reasonable efforts to ship a replacement part within 10 working days. Taxes, duties and import fees might apply. · Software updates: Warranty provides access to software bug fixes and maintenance updates. · Technical Support: Warranty includes access to the Cisco Small Business Support Community; 1-year access to Cisco Online Chat Support during local business hours; 90-day telephone access to the Cisco Small Business Support Center during local business hours.
Cisco Small Business Pro Limited 5-Year Hardware Warranty (78-18856-vvrr)	· Available for Cisco Small Business Pro Switch · Warranty Duration: Five (5) years · Hardware Replacement: Cisco will use commercially reasonable efforts to ship a replacement part for next business day advance hardware replacement where available. Where next business day delivery is not available, Cisco will use commercially reasonable efforts to ship a replacement part within 10 working days. Taxes, duties and import fees might apply. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Small Business Product 3-Year Limited Hardware Warranty (78-18852-vvrr)	· Warranty Duration: Three (3) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part for delivery upon receipt of the defective product at Cisco's site. Part will be shipped via ground shipping with shipping charges prepaid. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com

Cisco Small Business Product 5-Year Limited Hardware Warranty (78-18853-vvrr)	· Warranty Duration: Five (5) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part for delivery upon receipt of the defective product at Cisco's site. Part will be shipped via ground shipping with shipping charges prepaid. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Small Business Product Limited Lifetime Hardware Warranty (78-18854-vvrr)	· Warranty Duration: As long as the original End User continues to own or use the product, provided that: fan and power supply warranty is limited to one (1) year. · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part for delivery upon receipt of the defective product at Cisco's site. Part will be shipped via ground shipping with shipping charges prepaid. · In the event of discontinuance of product manufacture, Cisco warranty support is limited to five (5) years from the announcement of discontinuance. · Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Unified Computing 3-Year Limited Hardware Warranty (78-19008-vvrr)	· Warranty is applicable to Cisco Unified Computing products only. · Hardware Warranty Duration: Three (3) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within the next Cisco business day after receipt of the Return Materials Authorization request. Actual delivery times of replacement products may vary depending on Customer location. · Software, including Freeware Operating Systems and Applications, is provided "AS IS" and in no event does Cisco warrant that the Software is error free or that Customer will be able to operate the Software without problems or interruptions. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Limited 1-Year Return for Repair Hardware Warranty (78-19177-vvrr)	· Warranty is applicable to Cisco SP Video, Transport and Access hardware products only. · Hardware Warranty Duration: One (1) year · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to repair or replace the defective product, at Cisco or its service center's sole option, and ship the repaired or replacement part, as applicable, for delivery within thirty (30) working days after receipt of the defective product at Cisco's site. Actual delivery times of the repaired or replacement products may vary depending on Customer location. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
Cisco Limited 3-Year Return for Repair Hardware Warranty (78-19178-vvrr)	· Warranty is applicable to Cisco SP Video, Transport and Access hardware products only. · Hardware Warranty Duration: Three (3) Years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to repair or replace the defective product, at Cisco or its service center's sole option, and ship the repaired or replacement part, as applicable, for delivery within thirty (30) working days after receipt of the defective product at Cisco's site. Actual delivery times of the repaired or replacement products may vary depending on Customer location. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco). · Warranty allows guest access only to Cisco.com
5-Year Limited Hardware and 5-Year Limited Software Warranty (78-19176-vvrr)	· Warranty is available only to qualified world-wide service providers that Cisco defines as owners and operators of the world's collection of voice-oriented Public Switched Telephone Networks. · Hardware Warranty Duration: Five (5) years · Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to ship a replacement part for delivery within fifteen (15) working days after receipt of the defective product at Cisco's site. Actual delivery times of replacement products may vary depending on Customer location. · Software Warranty Duration: Five (5) years · Warranty provides that the media on which the Software is furnished will be free of defects in materials and workmanship under normal use and that the Software substantially conforms to its published specifications. · Software is provided "AS IS" and in no event does Cisco warrant that the Software is error free or that Customer will be able to operate the Software without problems or interruptions. · Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco. · Warranty allows guest access only to Cisco.com

Cisco Limited 5-Year Return for Repair Hardware Warranty (78-19179-vvrr)	• Warranty is applicable to Cisco SP Video, Transport and Access hardware products only. • Hardware Warranty Duration: Five (5) Years • Hardware Replacement: Cisco or its service center will use commercially reasonable efforts to repair or replace the defective product, at Cisco or its service center's sole option, and ship the repaired or replacement part, as applicable, for delivery within thirty (30) working days after receipt of the defective product at Cisco's site. Actual delivery times of the repaired or replacement products may vary depending on Customer location. • Both hardware and software warranties commence from the date of shipment to customer (and in case of resale by a Cisco reseller, commencing not more than ninety (90) days after original shipment by Cisco). • Warranty allows guest access only to Cisco.com

1. 1.vv" and "rr" suffixes of the warranty document numbers represent the revision and version numbers respectively.

Partner and Customer Support

Pre- and Post-Sales Contact Information	
Presales— Partner/Reseller Helpline	800 553-6387 408 526-7208 CiscoPartner.custhelp.com
Post-sales—Technical Assistance Center (TAC)	800 553-2447 (United States) 408 526-7209 (United States) +32 2 704 5555 (Europe) 1 800 805 227 (Australia) +61 2 8446 7411(Asia/Pacific) http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html
Technical Support Email Addresses	
English/Spanish	tac@cisco.com
Hanzi (Chinese)	chinese-tac@cisco.com
Kanji (Japanese)	japan-tac@cisco.com
Hangul (Korean)	korea-tac@cisco.com
Service Support Center (SSC)	cs-support@cisco.com; http://www.cisco.com/public/scc/ • Pre- and post-sales quoting assistance • Contract registration and access • Tool issues and navigation • SCC/SMS3 troubleshooting help • Contract Management Assistance • SCC registration/virtual registration
Distributor SMARTnet Teams	
Comstor/Westcon Group	smartnetgroup@comstor.com; 800 955 9590 ext. 5143
D&H	licensedesk@dandh.com; 800 340-1001
ScanSource	ciscoservice@scansource.com; 800 944-2439
Ingram Micro	myciscoteam@ingrammicro.com; 800 456-8000 ext. 76471
Tech Data	teamcisco@techdata.com; 800 237-8931 ext. *77776

Helpful Cisco Websites

Partner Resources	
Register with Cisco.com	Register to gain partner-level access to Cisco tools and information. http://tools.cisco.com/RPF/register/register.do
Partner Central	Explore the tools and resources that are available to Cisco partners. http://www.cisco.com/web/partners/index.html
Customized Partner Intelligence Newsletter	Subscribe to our partner newsletter featuring information that is most relevant to each individual partner company's particular business and technology needs. http://www.cisco.com/web/partners/news/index.html
Partner Self-Service	Manage company data including profile information and access privileges. http://tools.cisco.com/WWChannels/GETLOG/login.do
Partner Locator	Locate a qualified channel partner identified on the basis of specific criteria. http://www.cisco.com/go/partnerlocator
Distributor Locator	Locate a Cisco distributor in any country. http://tools.cisco.com/WWChannels/LOCATR/jsp/distributor_locator.jsp
Channel Account Manager (CAM) Locator	Search for a Channels Account Manager assigned to a specific partner. http://tools.cisco.com/WWChannels/CAMLOC/jsp/cam_locator.jsp
Partner Help Online—Direct FAQ access	Find answers to some commonly asked questions or open a case. http://ciscopartner.custhelp.com
Ordering Website	To place orders for Cisco products and services: http://www.cisco.com/en/US/ordering/index.html

Cisco Certified Refurbished Equipment	To learn about Cisco Certified Refurbished Equipment, check product availability, and get ordering instructions: http://www.cisco.com/go/remarketing
Services and Support Resources	
Cisco Services	Find detailed information about the services you need to protect and grow your technology investment. http://www.cisco.com/go/services
Cisco Support Online	Easily access online documentation, technical tools, and resources from Cisco Support Online. http://www.cisco.com/go/support
Cisco Service Finder	Match the right support service to the right product with the Cisco Service Finder. http://www.cisco-servicefinder.com/
End-of-Sale and End-of-Life Products	Stay up-to-date on products that are no longer being sold and might not be supported. http://www.cisco.com/en/US/products/prod_end_of_life.html
Return a Product	Information on return policies and RMA process. http://www.cisco.com/web/ordering/cs_info/or3/o32/Return_a_Product/WWRL_HOME.html
RMAService Order Tools	Access tools and resources to streamline your service and parts logistics inquiries. http://tools.cisco.com/serviceordertools/svosubmit/tools.do
Cisco Support Wiki	Share information and collaborate in real time with users around the globe. Find the most up-to-date information on Cisco products and services. http://supportwiki.cisco.com
Cisco Networking Professionals Connection	Join your fellow networking professionals to discuss and share information on Cisco products and solutions. http://www.cisco.com/go/netpro
Newsletters	
Cisco Borderless Networks e-Newsletter	NEW: Sign up to receive the new Cisco Borderless Networks monthly e-newsletter. This newsletter provides up –to-date security, mobility, routing and switching news. http://www.cisco.com/go/newsletter
Cisco Collaboration Insights e-Newsletter	Sign up to receive our monthly e-newsletter providing the latest up-to-date Unified Communications, WebEx, and TelePresence news. http://www.cisco.com/go/newsletter
Cisco Data Center Insights e-Newsletter	Sign up to receive our quarterly e-newsletter providing up-to-date data center news. http://www.cisco.com/go/newsletter
Cisco Networking Professionals Connection e-Newsletter	Sign up to receive bi-weekly e-newsletters providing up-to-date information on the latest activity on the discussion forums, upcoming events, and other networking news. http://www.cisco.com/go/newsletter
Cisco Technical Services e-Newsletter	Sign up to receive our monthly e-newsletter with current updates on technical documentation, field notices and security alerts, as well as technical articles written by Cisco engineers and technical tips from your peers. http://www.cisco.com/go/tsnews
Trainings and Other Resources	
Training Resources	Cisco offers training resources, career certifications and events to help you improve your skills and keep up with new technologies. http://www.cisco.com/web/learning/index.html
Cisco Networking Academy	Global e-learning program offers students an opportunity to pursue IT curricula through online instructor-led training and hands-on lab exercises. http://www.cisco.com/web/learning/netacad/index.html
Cisco Career Certifications	The widely respected Cisco Career Certifications and Training programs bring valuable, measurable rewards to network professionals, their managers, and the organizations that employ them. http://www.cisco.com/go/learnnetspace
Cisco Community Central	Cisco Community Central website is a group of communities designed to foster collaboration between Cisco employees, customers, users, and Cisco Partners. http://www.myciscocommunity.com/
Cisco Design Zone	Consolidated resource for design guides, application deployment guides, white papers, videos, and other technical reference materials. http://www.cisco.com/go/design zone
Cisco SMB Smart Designs	Cisco Smart Designs are pre-tested networking solutions that enable partners to deliver the benefits of Cisco products and technologies to SMB customers. http://www.cisco.com/go/partner/smartdesigns
Cisco Marketplace	The one stop shop for Cisco merchandise, including Cisco collateral and product documentation, logo merchandise, Cisco Press books, and software. http://www.cisco.com/go/marketplace
Cisco Press Bookstore	The only authorized publisher of Cisco, giving you access to industry experts and educators. Provides networking, business, and certification titles for your unique learning needs. http://www.cisco.com/go/marketplace
Product Advisor	The interactive Product Advisor tool provides a list of product recommendations based on your preference and highlights a list of products that meets your needs. Available for the following technologies: routing, switching, wireless, and security. http://www.ciscowebtools.com/productadvisor/index.asp

Cisco Capital Financing

As a wholly owned subsidiary of Cisco, Cisco Capital is in a unique position to provide end users with the most competitive and flexible financing options available for Cisco solutions. Because of the strong resources of our parent company, Cisco Capital can provide customers with an alternative source of affordable funds while allowing them to get the technology they need, when they need it.

As a trusted business partner, Cisco Capital can help end users obtain and maintain the right Cisco solution with the most effective acquisition strategy for their business or organization. For more information on financing with Cisco Capital, visit http://www.ciscocapital.com.

Cisco Certified Refurbished Equipment

Cisco Certified Refurbished Equipment is the only brand of used Cisco in the market that is certified and authorized by Cisco. Our large inventory of high-quality fully remanufactured Cisco products are an ideal complement to new when price or availability limit customer options, or when customers need older generation products no longer manufactured by Cisco, to extend the life of their network.

Consider Cisco Certified Refurbished Equipment for:

- Onsite spares and Cisco SMARTnet® service augmentation
- Technology transition gap-fillers
- Legacy network expansions and end-of-life maintenance
- Test labs and training
- Network swing kits
- Disaster recovery and contingency networks
- Short-term, temporary networks
- Tight budget scenarios
- Rapid delivery and backorder scenarios

Key facts to know:

- Over 2800 current and end-of-sale (EOS) models from all technology areas: switching, routing, security, wireless, telephony, advanced technologies, memory, and accessories
- Remanufactured, tested, and reconditioned to Cisco factory specifications
- Covered by the same Cisco warranty terms and conditions as new products
- Cisco Technical Services can be attached to refurbished equipment to provide the same features and value as provided on new equipment
- 25 to 70 percent off original list price; reseller discounts available for Cisco partners
- Same part numbers but ends with the suffix "-RF"
- Licensed copy of Cisco IOS Software installed
- Available through Cisco authorized channels worldwide; no special certifications or authorizations required to resell
- May not be available in certain countries
- No returns; all sales are final
- Inventory varies daily; sold on a first-come, first-served basis.

For more information about Cisco Certified Refurbished Equipment, including product availability, current promotions, and ordering instructions, visit:
http://www.cisco.com/go/remarketing.

Chapter 1: Routing

This chapter includes only a subset of Cisco products and part numbers. Also, you will see products listed multiple times because they have dual roles and are used differently in small, medium, and large networks.

Routing At-a-Glance

Product	Features	Page
BRANCH ROUTERS		
Integrated Services Routers—Generation 2		
Cisco 3900 Series Integrated Services Routers ***NEW PRODUCT***	· Delivers scalable rich-media services including TelePresence, highest density of service virtualization, and lowest total cost of ownership (TCO) with energy efficiency · Ideal for high-end deployments requiring business continuity, WAN flexibility, superior collaboration, WAN flexibility, superior collaboration capabilities, and investment protection · Offers field-upgradeable motherboard, circuit-speed WAN performance up to 350 Mbps with services such as security, mobility, WAN optimization, unified communications, video, and customized applications · Has three rack unit (3RU) modular form factor	1–4
Cisco 2900 Series Integrated Services Routers ***NEW PRODUCT***	· Provides rich-media services including TelePresence, service virtualization, and lower TCO with energy efficiency · Ideal for midrange deployments requiring business agility, WAN flexibility, and secure collaboration · Offers circuit-speed WAN performance up to 75 Mbps with services such as security, mobility, WAN optimization, unified communications, video, and customized applications · Has 1RU to 2 RU modular form factor	1–9
Cisco 1900 Series Integrated Services Routers ***NEW PRODUCT***	· Offers entry-level, highly secure solution for WAN deployments; offers service virtualization and low TCO · Ideal for small offices requiring modular flexibility for highly secure mobility and customizable applications · Offers circuit-speed performance up to 25 Mbps with concurrent services · Offers factory-selectable 802.1 1n access point and doublewide high-speed WAN interface card (HWIC) support; has desktop form factor	1–12
Cisco 800 Series Routers ***NEW UPDATES***	· Ideal for small offices and teleworkers, or to service providers to deploy as part of their managed network services · Delivers data, security, wireless, third-generation wireless, SRST	1–17
Integrated Services Routers—Generation 1		
Cisco 3800 Series Integrated Services Routers	· Ideal for medium-sized to large businesses and enterprise branch offices · Highly secure platform with concurrent T3/E3 wire-speed delivery · Deliver the performance, availability, and reliability required for scaling mission-critical business applications	1–19
Cisco 2800 Series Integrated Services Routers	· Ideal for small to medium-sized businesses and enterprise branch offices. · Accommodates multiple T1/E1 connections for services including data, security, voice, video, and wireless · Deliver the performance, availability, and reliability required for scaling mission-critical business applications	1–21
Cisco 1800 Series Integrated Services Routers	· Ideal for small to medium-sized businesses and enterprise branch offices. · Enables businesses to reduce costs by deploying a single, resilient system for fast, secure, delivery for data, security, unified communications, and wireless · Delivers secure Internet and Intranet access	1–25
WAN ROUTERS		
Cisco 7600 Series Routers	· Ideal for service providers that deliver consumer and business services over a single converged Carrier Ethernet network · Industry-leading carrier-class edge router offering integrated, high-density Ethernet switching, IP/MPLS routing, and 10-Gbps interfaces · Offers a choice of form factors purpose-built for high availability	1–29
Cisco 7300 Series Routers	· Ideal for both service providers and enterprise applications · Compact, high-performance one-rack-unit (1RU) router coupled with a broad set of interfaces and Cisco IOS® Software features	1–31
Cisco 7200 Series Routers	· Ideal for enterprise and service provider edge applications · Optimized for delivering integrated services for up to OC-3 bandwidth · Supports a wide range of density, performance, and service requirements · Delivers an exceptional price-to-performance ratio, versatility, and feature richness in a compact form factor	1–32

Cisco ASR 1000 Series Aggregation Services Routers ***NEW UPDATES***	· Ideal for medium-sized to large enterprises and service providers · Industry-leading performance, service capabilities, reliability, and efficiencies in a compact form factor supporting up to 40 Gbps · Highly secure, high-performance and integrated hardware-based services without the need for additional hardware modules · Extends network as a platform for cloud computing to help conserve resources and optimize performance	1–36
Cisco Catalyst 6500 Series Switches ***NEW UPDATES***	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome, Energywise · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Integrates services through its portfolio of service modules	See 2–4

SERVICE PROVIDER CORE/EDGE ROUTERS

Cisco Carrier Routing System ***NEW UPDATES***	· NEW—CRS-3- powered by the Cisco QuantumFlow Array and more than triples the performance of the CRS-1 · Ideal for service providers across all market segments · Offers industry-leading performance, advanced services intelligence, environmentally aware design, and system longevity · Each model (CRS-1 and CRS-3) uses Cisco IOS XR Software, a unique self-healing, distributed operating system	1–34
Cisco XR 12000/ 12000 Series Routers	· Ideal for large enterprises and service providers · XR 12000 Series Routers- extend highly secure virtualization, integral service delivery, continuous system operation, and multiservice scale · 12000 Series Routers- feature Cisco I-Flex, a portfolio of shared port adapters (SPAs) and SPA interface processors (SIPs)	1–36
Cisco ASR 9000 Series Aggregation Services Routers	· Ideal for carriers offering residential and business services · Delivers nonstop video and enhanced scalability in a reduced carbon footprint, along with industry-leading levels of carrier transport · Provides carrier-class reliability for continuous service operation and high availability · Scales up to 6.4 Tbps per system and delivers comprehensive system redundancy	1–39
Cisco ASR 1000 Series Aggregation Services Routers ***NEW UPDATES***	· Ideal for medium-sized to large enterprises and service providers · Industry-leading performance, service capabilities, reliability, and efficiencies in a compact form factor supporting up to 40 Gbps · Highly secure, high-performance and integrated hardware-based services without the need for additional hardware modules · Extends network as a platform for cloud computing to help conserve resources and optimize performance	1–40
Cisco 7600 Series Routers	· Ideal for service providers that deliver consumer and business services over a single converged Carrier Ethernet network · Industry-leading carrier-class edge router offering integrated, high-density Ethernet switching, IP/MPLS routing, and 10-Gbps interfaces · Offers a choice of form factors purpose-built for high availability	1–29
Cisco 7300 Series Routers	· Ideal for both service providers and enterprise applications · Compact, high-performance one-rack-unit (1RU) router coupled with a broad set of interfaces and Cisco IOS® Software features	1–31
Cisco 7200 Series Routers	· Ideal for enterprise and service provider edge applications · Optimized for delivering integrated services for up to OC-3 bandwidth · Supports a wide range of density, performance, and service requirements · Delivers an exceptional price-to-performance ratio, versatility, and feature richness in a compact form factor	1–32

CONNECTED GRID ROUTERS

Cisco 2000 Series Connected Grid Router ***NEW PRODUCT***	· Rugged industrial design and substation compliance with IEC-61850-3 and IEEE 1613 for utility substation environments · Integrated security to help utilities address compliance with critical infrastructure protection mandates · High availability design for optimum network up time and redundancy · Network and device management tools for deployments, upgrades, and remote monitoring · Advanced quality of service (QoS) capabilities to support mission-critical substation communications such as SCADA (Supervisory Control and Data Acquisition) · Comprehensive network security features based on open standards	1–42

SMALL BUSINESS ROUTERS

Cisco SRP 500 Series Services Ready Platforms ***NEW TO GUIDE***	· Help enable service providers to deliver differentiated, converged service offers that increase bandwidth usage and average revenue per user while reducing customer churn · Fixed-configuration customer premises equipment (CPE) to enable service providers to create, provision, and deploy premium revenue-generating services to small businesses · Support a variety of high-quality voice, data, security, wireless, and application services.	1–43

Cisco 2900 Series Integrated Services Routers ***NEW PRODUCT***	· Provides rich-media services including TelePresence, service virtualization, and lower TCO with energy efficiency · Ideal for midrange deployments requiring business agility, WAN flexibility, and secure collaboration · Offers circuit-speed WAN performance up to 75 Mbps with services such as security, mobility, WAN optimization, unified communications, video, and customized applications · Has 1RU to 2 RU modular form factor	1–9
Cisco 1900 Series Integrated Services Routers ***NEW PRODUCT***	· Offers entry-level, highly secure solution for WAN deployments; offers service virtualization and low TCO · Ideal for small offices requiring modular flexibility for highly secure mobility and customizable applications · Offers circuit-speed performance up to 25 Mbps with concurrent services · Offers factory-selectable 802.11n access point and doublewide high-speed WAN interface card (HWIC) support; has desktop form factor	1–12
Cisco 800 Series Routers ***NEW UPDATES***	· Ideal for small offices and teleworkers, or to service providers to deploy as part of their managed network services · Delivers data, security, wireless, third-generation wireless, SRST	1–17

SERVICES		
Cisco Routing Services Assess overall readiness with planning services and reduce the risk, delays, and total cost of deployment with an implementation-ready design that you can use to engineer your network.		1–44

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support. http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

For more Cisco routing platforms, refer to the Cisco Routing Guide at http://www.cisco.com/go/routerguide.

What's New on Cisco ISR G2?

Feature	Cisco ISR	Cisco ISR G2
WAN performance	Up to 45 Mbps with services	Up to 350 Mbps with services
Network processor	Single	Multicore with future expandability
Service module performance and capacity	1X and 160 GB storage	Up to 7X with dual core and 1 TB storage
Onboard DSPs	Voice only	Voice and video-ready DSPs
Switch modules	Fast Ethernet with Power over Ethernet (PoE); based on Cisco Catalyst 3750	Fast Ethernet/Gigabit Ethernet with POE+ Based on Cisco Catalyst 3560E/2950
IOS image	Multiple images	Single universal IOS image
Services delivery	Hardware-coupled	Services on demand
Redundancy	Single motherboard	Field-upgradeable motherboard
Energy efficiency	EnergyWise	EnergyWise with slot-based controls Real-time power reporting

Cisco ISR G2 Model Comparison

	Cisco 3945E	Cisco 3925E	Cisco 3945	Cisco 3925	Cisco 2951	Cisco 2921	Cisco 2911	Cisco 2901	Cisco 1941/ 1941W	Cisco 1921
Form Factor	3 rack units (3RU)	3RU	3RU	3RU	2RU	2RU	2RU	1RU	2RU	1RU
Integrated WAN Ports	4 GE (2 SFP)	4 GE (2 SFP)	3 GE (2 SFP)	3 GE (2 SFP)	3 GE (1 SFP)	3 GE (1 SFP)	3 GE	2 GE	2 GE	2 GE
Interface Slots (EHWIC)	3	3	4	4	4	4	4	4	2	2

Service Module Slots	4	2	4	2	2	1	1	0	0	0
ISM Slots	0	0	1	1	1	1	1	1	1	0
PVDM Slots	3	3	4	4	3	3	2	2	0	0
USB Ports (v2.0)	2	2	2	2	2	2	2	2	2	1
Default/Max Flash	256MB/ 4GB	256MB/ 4GB	256 MB/ 4GB	256 MB/ 4 GB	256 MB/ 4 GB	256 MB/ 4 GB	256 MB/ 4 GB	256 MB/ 4 GB	256 MB/ 4 GB	256 MB/ 256 MB
Default/Max SDRAM	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	1 GB/ 4 GB[1]	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB	512 MB/ 2.5 GB
Modular LAN Switchports (with optional PoE)	98[2]	74[2]	98[2]	74[2]	50[2]	50[2]	24[2]	16[2]	11[2]	9
Advanced Security	Enabled via Security License for Universal IOS Image. IPS and Content Filtering need additional subscription licenses									
Stateful Firewall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Onboard Hardware VPN Acceleration (DES, 3DES, AES)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intrusion prevention	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Content filtering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unified Communication	Enabled via Unified Communications License for Universal IOS Image. CCME/SRST support through separate feature licenses									
Local conferencing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	—
Voice and Video DSP support	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	PVDM3 and PVDM2	—	—
Survivable Remote Site Telephony (SRST)	Up to 1500	Up to 1350	Up to 1200	Up to 730	Up to 250	Up to 100	Up to 50	Up to 35	—	—
Cisco Unified Communications Manager Express	Up to 450	Up to 400	Up to 350[3]	Up to 250[3]	Up to 150	Up to 100	Up to 50	Up to 35	—	—
Cisco Unity™ Express (network module [NM], service module [SM], or ISM)	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	32 ports; 300 mail-boxes	10 ports; 100 mail-boxes	—	—
Session Initiation Protocol (SIP) sessions	2500	—	—	800	600	400	200	100	—	—
Digital voice support	Up to 660	Up to 420	Up to 720	Up to 480	Up to 400	Up to 240	Up to 150	Up to 100	—	—
Maximum voice support for analog and Basic Rate Interface (BRI)	FXS: 108 FXO: 60 BRI: 38	FXS: 60 FXO: 36 BRI: 22	FXS: 112 BRI: 22	FXS: 64 FXO: 64 BRI: 40	FXS:40 FXO: 28 BRI: 16	FXS:40 FXO: 28 BRI: 16	FXS: 40 FXO: 28 BRI: 16	FXS: 16 FXO: 16 BRI: 8	—	—

1. Up to 2 GB available for use; upgrade to 4 GB available in future.
2. LAN Switching counts for the Cisco 2911 through Cisco 3945 and Cisco 3945E routers based on latest generation of switch service module.
3. Scales to documented phone support in 15.0.1 build.

Cisco 3900 Series Integrated Services Routers

Cisco 3900 Series Integrated Services Routers (ISRs) are designed to power the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while reducing operating costs.

Cisco 3900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The new Cisco Integrated

Services Routers Generation 2 (ISR G2) platforms are architected to enable the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while maximizing operational cost savings. The new routers support new high-capacity digital signal processors (DSPs) for future enhanced video capabilities, high-powered service modules with improved availability, multicore CPUs, Gigabit Ethernet switching with Cisco Enhanced Power over Ethernet (ePoE), and new energy visibility and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Cisco Services Ready Engine (SRE) module enable you to decouple the deployment of hardware and software, providing a flexible technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 3900 Series offers exceptional total cost of ownership (TCO) savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The routers include:

- Services on demand—The Cisco 3900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Universal Cisco IOS Software image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services.
- Investment protection—The Cisco 3900 Series reduces deployment costs and increases flexibility. The platform offers a modular, field-upgradable motherboard called the Services Performance Engine (SPE). SPEs allow you to invest in a Cisco 3900 Series ISR today and boost its performance later by upgrading to a higher-performance engine. Investment protection is also offered with support for most existing modules from previous-generation ISRs.
- Energy efficiency—The Cisco 3900 Series architecture includes higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise feature support in the future. Both Cisco 3925 and 3945 routers support dual power supplies for power-supply redundancy for branch-office or retail environments running mission-critical applications.
- High performance—The Cisco 3900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 3900 Series offers unparalleled total-cost-of-ownership (TCO) savings and network agility through the intelligent integration of security, wireless, and application services.

Ideal for Companies That Need These Features

Cisco 3945E
- Modular Services Performance Engine (SPE) 250, which can be upgraded for even higher performance as next-generation WAN environments evolve
- Four integrated 10/100/1000 Ethernet ports with 2 ports capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity
- Four service-module slots
- Three enhanced high-speed WAN interface card (HWIC) slots
- Three onboard digital-signal-processor (DSP) slots
- Dual integrated power supplies
- Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)

Cisco 3925E
- Modular Services Performance Engine (SPE) 200 for even higher performance as WAN environments evolve
- Four integrated 10/100/1000 Ethernet ports with two Small Form-Factor Pluggable (SFP) ports
- Two service-module slots
- Three enhanced high-speed WAN interface card (EHWIC) slots
- Three onboard digital-signal-processor (DSP) slots
- Dual integrated power supplies
- Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)

Cisco 3945
- Modular Services Performance Engine (SPE) 150, which can be upgraded for even higher performance as next-generation WAN environments evolve
- Four integrated 10/100/1000 Ethernet ports with two ports capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity
- Four service-module slots
- Four enhanced high-speed WAN interface card (EHWIC) slots
- Four onboard digital-signal-processor (DSP) slots
- One integrated-services-module slot
- Dual integrated power supplies
- Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)

Cisco 3925
- Modular Services Performance Engine (SPE) 100 for even higher performance as WAN environments evolve
- Three integrated 10/100/1000 Ethernet ports with two SFP ports
- Two service-module slots
- Four enhanced high-speed WAN interface card (EHWIC) slots
- Four onboard digital-signal-processor (DSP) slots
- One integrated-services-module slot
- Dual integrated power supplies
- Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE)

Key Features and Benefits

- Modular platform
  - The Cisco 3900 Series routers are highly modular platforms with several types of module slots to add connectivity and services for varied branch-office network requirements.
  - The routers offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades to future technologies without requiring platform replacement.
  - The Cisco SPE on the Cisco 3900 offers the ability to increase the performance of the router with a field-upgradable motherboard as your network needs grow.
- Processors
  - The Cisco 3900 Series routers are powered by high-performance multicore processors that can support the growing demands of high-speed WAN connections to the branch office while also running multiple concurrent services.
- Advanced security with embedded IP Security with Secure Sockets Layer (IPSec/SSL) VPN hardware acceleration
  - Embedded hardware encryption acceleration is enhanced to provide higher scalability, which, combined with an optional Cisco IOS Software Security license, enables WAN link security and VPN services (both IPSec and SSL acceleration).
  - The onboard encryption hardware outperforms the advanced integration modules (AIMs) of previous generations.
  - The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN). The 3900 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
  - More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module.
  - Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
  - Cisco Configuration Professional comes standard on all Cisco 3900 Series Integrated Services Routers.
- Multigigabit fabric (MGF)
  - The Cisco 3900 Series introduces an innovative MGF that allows for efficient module-to-module communication, enabling tighter services interactions across modules while reducing the overhead on the router processor.
- TDM interconnectivity fabric
  - Unified communications services in the branch office are significantly enhanced with the use of TDM interconnectivity fabric in the router architecture, allowing for scaling of DS-0 channel capacity.
- Integrated Gigabit Ethernet ports
  - The Cisco 3900 Series provides up to four 10/100/1000 Ethernet WAN ports.
  - Two of the 10/100/1000 Ethernet WAN ports on the Cisco 3900 Series can support Small Form-Factor Pluggable (SFP)-based connectivity in lieu of RJ-45 ports, enabling fiber connectivity.
- High-capacity, video-ready Packet Voice Video Digital Signal Processor Module (PVDM3)
  - Enhanced architecture delivers a new packet-processing engine optimized for video and rich-media applications, while concurrently supporting packet voice.
  - Enables scaling of high-definition (HD) voice capacity and is optimized for future enhanced video capabilities.
- Innovative universal-serial-bus (USB)-based console access
  - A new, innovative, mini-B USB console port supports management connectivity when traditional serial ports are not available.
  - Traditional console and auxiliary ports are also available.
- Optional integrated power supply for distribution of PoE and universal DC power supply
  - An optional upgrade to the internal power supply provides inline power (802.3af-compliant PoE, Cisco ePoE, and Cisco Inline Power) to optional integrated switch modules.
  - An optional DC power supply that extends possible deployment environments such as central offices and industrial environments will be available in the future.
- Optional integrated redundant power supply (RPS) and PoE boost
  - Power redundancy is available by installing an optional integrated RPS, thereby decreasing network downtime and protecting the network from power-supply failures.
  - When populated with dual integrated power supplies, the Cisco 3900 Series can operate in a configurable PoE boost mode in lieu of redundant power mode whereby the power capacity of the platform is increased to almost twice the normal power to support additional PoE ports.
- Designed for flexible deployments
  - The Cisco 3945 and 3925 are designed for Network Equipment Building Systems (NEBS) environments.

Specifications

Services and Slot Density	Cisco 3945E	Cisco 3925E	Cisco 3945	Cisco 3925
Embedded hardware-based cryptography acceleration (IPSec + Secure Sockets Layer [SSL])	Yes	Yes	Yes	Yes
Cisco Unified Communications Manager Express Sessions	450	400	350	250
Cisco Unified SRST sessions	1500	1350	1200	730

Total onboard WAN or LAN 10/100/1000 ports	4	4	3	3
RJ-45-based ports	4	4	3	3
SFP-based ports	2	2	2	2
Service-module slots	4	2	4	2
Doublewide service-module slots	1	1	1	1
EHWIC slots	3	3	4	4
Doublewide EHWIC slots	1	1	2	2
ISM slots	0	0	1	1
Online insertion and removal (OIR)	Services modules	Services modules	Services modules	Services modules
Onboard DSP (PVDM) slots	3	3	4	4
Memory DDR2 ECC DRAM: Default	1 GB	1 GB	1 GB	1 GB
Memory DDR2 ECC DRAM: Maximum	2 GB	2 GB	2 GB	2 GB
Compact Flash (external): Default	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None	Slot 0: 256 MB Slot 1: None
Compact Flash (external): Maximum	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB	Slot 0: 4 GB Slot 1: 4 GB
External USB 2.0 slots (Type A)	2	2	2	2
USB console port (Type B) (up to 115.2 kbps)	1	1	1	1
Serial console port (up to 115.2 kbps)	1	1	1	1
Serial auxiliary port (up to 115.2 kbps)	1	1	1	1
Power-supply options	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC
Redundant power supply	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC	Internal: AC, PoE, and DC
Power Specifications				
AC input voltage	100 to 240 VAC autoranging	100 to 240 VAC autoranging	100 to 240 VAC autoranging	100 to 240 VAC autoranging
AC input frequency	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
AC input current range, AC power supply (maximum)	7.1 to 3.0A	7.1 to 3.0A	7.1 to 3.0A	7.1 to 3.0A
AC input surge current	<50A	<50A	<50A	<50A
Typical power (no modules) (watts)	105	100	105	100
Maximum power with AC power supply (watts)	540	420	540	420
Maximum power with PoE power supply (platform only) (watts)	540	420	540	420
Maximum endpoint PoE power available from PoE power supply (watts)	520	520	520	520
Maximum endpoint PoE power capacity with PoE boost (watts)	1040	1040	1040	1040
Dimensions (H x W x D)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)	5.25 x 17.25 x 18.75 in. (133.35 x 438.15 x 476.25 mm)
Rack height	3 rack units (3RU)	3RU	3 RU	3RU
Rack-mount 19 in. (48.3 cm) EIA	Included	Included	Included	Included
Rack-mount 23 in. (58.4 cm) EIA	Optional	Optional	Optional	Optional
Wall-mount	No	No	No	No
Weight with AC power supply (no modules)	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)	39 lb (17.7 kg)
Weight with PoE power supply (no modules)	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)	40 lb (18.1 kg)

Typical weight (with modules)	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)	60 lb (27.2 kg)
Airflow	Back to front	Back to front	Back to front	Back to front
Optional airflow kit (includes filter)	None	None	Front to back	Front to back

The Cisco 3900 Series supports a wide range of modules that span industry-leading breadth of services at the branch office. For a list of modules supported on the Cisco 3900 Series, visit: http://www.cisco.com/en/US/products/ps10536/products_relevant_interfaces_and_modules.html.

Selected Part Numbers and Ordering Information

Cisco 3900 Series Integrated Services Routers	
CISCO3945E/K9	Cisco 3945 w/SPE250(4GE,3EHWIC,3DSP,4SM,256MBCF,1GBDRAM,IPB)
CISCO3925E/K9	Cisco 3925 w/SPE200(4GE,3EHWIC,3DSP,2SM,256MBCF,1GBDRAM,IPB)
CISCO3945/K9	Cisco 3925 w/SPE150(3GE,4EHWIC,4DSP,4SM,256MBCF,1GBDRAM,IPB)
CISCO3925/K9	Cisco 3945 w/SPE100(3GE,4EHWIC,4DSP,2SM,256MBCF,1GBDRAM,IPB)
C3900-SPE250/K9=	Cisco Services Performance Engine 250 for Cisco 3945E ISR (Spare)
C3900-SPE200/K9=	Cisco Services Performance Engine 200 for Cisco 3925E ISR (Spare)
C3900-SPE150/K9=	Cisco Services Performance Engine 150 for Cisco 3945 ISR (Spare)
C3900-SPE100/K9=	Cisco Services Performance Engine 100 for Cisco 3925 ISR (Spare)
C3900-SPE100/K9=	Cisco Services Performance Engine 100 for Cisco 3925 ISR (Spare)
Cisco 3900 Series Secure Voice Bundles[1]	
C3945E-VSEC/K9	Cisco 3945E Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3925E-VSEC/K9	Cisco 3925 EVoice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3945-VSEC/K9	Cisco 3945 Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
C3925-VSEC/K9	Cisco 3925 Voice Sec. Bundle, PVDM3-64, UC and SEC License PAK
Cisco 3900 Series Secure Voice and CUBE Bundles[1]	
C3925-VSEC-CUBE/K9	Cisco 3925 Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3945-VSEC-CUBE/K9	Cisco 3945 Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3925E-VSEC-CUBEK9	Cisco 3925E Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
C3945E-VSEC-CUBEK9	Cisco 3945E Voice Sec and CUBE Bundle, PVDM3-64, UC and SEC License P, FL-CUBEE-25
Cisco 3900 Series Security Bundles[1]	
CISCO3945E-SEC/K9	Cisco 3945E Security Bundle w/SEC license PAK
CISCO3925E-SEC/K9	Cisco 3925E Security Bundle w/SEC license PAK
CISCO3945-SEC/K9	Cisco 3945 Security Bundle w/SEC license PAK
CISCO3925-SEC/K9	Cisco 3925 Security Bundle w/SEC license PAK
Cisco 3900 Series Voice Bundles	
CISCO3945E-V/K9	Cisco 3945E Voice Bundle, PVDM3-64, UC License PAK
CISCO3925E-V/K9	Cisco 3925E Voice Bundle, PVDM3-64, UC License PAK
CISCO3945-V/K9	Cisco 3945 Voice Bundle, PVDM3-64, UC License PAK
CISCO3925-V/K9	Cisco 3925 Voice Bundle, PVDM3-64, UC License PAK
C3945E-CME-SRST/K9	3945E Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3925E-CME-SRST/K9	3925E Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3945-CME-SRST/K9	3945 Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
C3925-CME-SRST/K9	3925 Voice Bundle w/ PVDM3-64,FL-CME-SRST-25, UC License PAK
Cisco 3900 Series Service Ready Engine Bundles[1]	
C3945E-VSEC-SRE/K9	Cisco 3945E SRE Bundle, SRE 900, PVDM3-64, UC and SEC License PAK
C3925E-VSEC-SRE/K9	Cisco 3925E SRE Bundle, SRE 900, PVDM3-64, UC and SEC License PAK
C3945-VSEC-SRE/K9	Cisco 3945 SRE Bundle, SRE 700, PVDM3-64, UC and SEC License PAK
C3925-VSEC-SRE/K9	Cisco 3925 SRE Bundle, SRE 700, PVDM3-64, UC and SEC License PAK

Cisco 3900 Series Export Restriction Compliance License (Required by U.S. Export regulations for more than 85Mbps throughput or 225 IPsec tunnels)	
FL-39-HSEC-K9	U.S. Export Restriction Compliance license for 3900 series

1. Additional HSEC license available for high perfomance/scale IPsec deployments

For More Information

http://www.cisco.com/go/3900

Cisco 2900 Series Integrated Services Routers

Cisco 2900 Series Integrated Services Routers (ISRs) are designed to power the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while reducing operating costs.

Cisco 2900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The Integrated Services Routers Generation 2 (ISR G2) platforms are protected for future generations with multicore CPUs, support for high-capacity digital signal processors (DSPs) for future enhanced video capabilities, high-powered service modules with improved availability, Gigabit Ethernet switching with enhanced Power over Ethernet (ePoE), and new energy monitoring and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Services Ready Engine (SRE) module enable you to decouple the deployment of hardware and software, providing a flexible technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 2900 Series offers unparalleled total-cost-of-ownership (TCO) savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The routers include:

*   Services on demand—The Cisco 2900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Cisco IOS Software Universal image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services.
*   Investment protection—The Cisco 2900 Series reduces deployment costs and increases flexibility. The platform also offers investment protection with support for many existing ISR modules.
*   Energy efficiency—The Cisco 2900 Series architecture incorporates higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise support in the future.
*   High performance—The Cisco 2900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 2900 Series offers unparalleled TCO savings and network agility through the intelligent integration of security, wireless, unified communications, and application services.

Ideal for Companies That Need These Features

Cisco 2900 Series	
	* Delivers highly secure data, voice, video, and application services for small offices.
	* Two or 3 integrated 10/100/1000 Ethernet ports with 1 port capable of RJ-45 or Small Form-Factor Pluggable (SFP) connectivity
	* Two service-module slots
	* Four enhanced high-speed WAN interface card (EHWIC) slots
	* Two or 3 onboard digital-signal-processor (DSP) slots
	* One internal service-module slot for application services
	* Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE)

Key Features and Benefits

The Cisco 2900 Series builds on the best-in-class offering of the existing Cisco 2800 Series Integrated Services Routers by offering four platforms: Cisco 2901, 2911, 2921, and 2951 Integrated Services Routers.

All Cisco 2900 Series Integrated Services Routers offer embedded hardware encryption acceleration, voice- and video-capable digital-signal-processor (DSP) slots, optional firewall, intrusion prevention, call processing, voicemail, and application services. In addition, the platforms support the industry's widest range of wired and wireless connectivity options such as T1/E1, T3/E3, xDSL, copper, and fiber Gigabit Ethernet.

Key architectural features of the Cisco 2900 Series include:

*   Modular platform
    *   The Cisco 2900 Series ISRs are highly modular platforms with several types of module slots to add connectivity and services for varied branch-office network requirements.
    *   The ISRs offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades for future technologies without requiring a platform replacement.
*   Processors
    *   The Cisco 2900 Series are powered by high-performance multi-core processors that can support the growing demands of high-speed WAN connections to the branch-office while also running multiple concurrent services.
*   Advanced security with embedded IP Security with Security Sockets Layer (IPSec/SSL) VPN hardware acceleration

- Embedded hardware encryption acceleration is enhanced to provide higher scalability, which combined with an optional Cisco IOS Security license, enables WAN link security and VPN services (both IPSec and SSL acceleration). The onboard encryption hardware replaces and outperforms the advanced integration modules (AIMs) of previous generations.
- The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN). The 3900 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
- More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module.
- Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
- Cisco Configuration Professional comes standard on all Cisco 2900 Series Integrated Services Routers.
- Multigigabit fabric (MGF)
  - The Cisco 2900 Series introduces an innovative multigigabit fabric (MGF) that allows for efficient module-to-module communication, enabling tighter services interactions across modules while reducing the overhead on the route processor.
- TDM interconnectivity fabric
  - Unified communications services in the branch office are significantly enhanced with the use of a TDM interconnectivity fabric in the system architecture, allowing for scaling of DS-0 channel capacity.
- High-capacity, video-ready Packet Voice Video Digital Signal Processor Module (PVDM3)
  - Enhanced architecture delivers a new packet-processing engine optimized for video and rich-media applications, while concurrently supporting packet voice.
  - Enables scaling of high-definition (HD) voice capacity and is optimized for future enhanced video capabilities.
- Integrated Gigabit Ethernet ports
  - All onboard WAN ports are 10/100/1000 Gigabit Ethernet WAN routed ports.
  - One of the three 10/100/1000 Ethernet WAN ports on the Cisco 2921 and 2951 supports Small Form-Factor Pluggable (SFP)-based connectivity in lieu of a RJ-45 port and enabling fiber connectivity.
- Innovative USB-based console access
  - A new, innovative USB console port offers management connectivity for devices without a serial port such as modern laptop computers.
  - Traditional console and auxiliary ports are also available.
- Optional integrated power supply for distribution of PoE and universal DC power supply
  - An optional upgrade to the internal power supply provides inline power (802.3af-compliant PoE and Cisco Inline Power) to integrated switch modules.
  - On the Cisco 2911, 2921, and 2951, an optional DC power supply will be available in the future that extends deployment into central offices and industrial environments.
- Optional external redundant power supply (RPS)
  - The Cisco 2911, 2921, and 2951 allow for power redundancy through the use of an external RPS device, thereby decreasing network downtime and protecting the network from power-supply failures.
  - Redundant power on the Cisco 2900 Series is supported through the Cisco RPS 2300 Redundant Power System. You can use the Cisco RPS 2300 to provide redundant power for Cisco 2900 Series ISRs as well as Cisco Catalyst switches.
  - To use the Cisco RPS 2300, an external RPS adapter is required (configurable option) to connect the platform to the external RPS.
- PoE boost
  - When connected to an external RPS device, the Cisco 2911, 2921, and 2951 can operate in a PoE boost configuration in lieu of redundant power mode, whereby the power capacity of the platform is increased to twice the normal level to power additional PoE ports.
- Designed for flexible deployments
  - The Cisco 2911 and 2951 are designed for NEBS environments
  - The 2911 is 12" deep and has an optional fan filter for deployments in a variety of environments. An assembly that provides front-to-back airflow is also available for 23" racks.

Specifications

Services and Slot Density	Cisco 2901	Cisco 2911	Cisco 2921	Cisco 2951
Embedded hardware-based cryptography acceleration (IPSec + SSL)	Yes	Yes	Yes	Yes
Cisco Unified SRST Sessions	35	50	100	250
Cisco Unified CCME Sessions	35	50	100	150
Total onboard WAN 10/100/1000 Ports	2	3	3	3
RJ-45-based ports	2	3	3	3
SFP-based ports (use of SFP port disables the corresponding RJ-45 port)	0	0	1	1
Service Module slots	0	1	1	2

Double-wide Service Module slots (use of a double-wide slot will occupy all single-wide service module slots in a 2900)	0	0	1	1
EHWIC slots	4	4	4	4
Double-wide EHWIC slots (use of a double-wide EHWIC slot will consume two EHWIC slots)	2	2	2	2
ISM slots	1	1	1	1
Onboard DSP (PVDM) slots	2	2	3	3
Memory DDR2 ECC DRAM - Default	512 MB	512 MB	512 MB	512 MB
Memory (DDR2 ECC DRAM) - Maximum	2 GB	2 GB	2 GB	2 GB
Compact Flash (external) - Default	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none	slot 0: 256 MB slot 1: none
Compact Flash (external) - Maximum	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB	slot 0: 4 GB slot 1: 4 GB
External USB 2.0 flash memory slots (Type A)	2	2	2	2
USB Console port (Type B) (up to 115.2 kbps)	1	1	1	1
Serial console port	1	1	1	1
Serial auxiliary port	1	1	1	1
Power-supply options	AC and PoE	AC, PoE, and DC	AC, PoE, and DC	AC, PoE, and DC
RPS support (External)	No	Cisco RPS 2300	Cisco RPS 2300	Cisco RPS 2300
Power Specifications				
AC input voltage	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging	100 to 240 VAC auto ranging
AC input frequency	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
AC input current range AC power supply (maximum)	1.5 to 0.6A	2.2 to 1.0A	3.4 to 1.4A	3.4 to 1.4A
AC input surge current	<50A	<50A	<50A	<50A
Typical Power (no modules) (Watts)	40	50	60	70
Maximum Power with AC power supply (Watts)	150	210	320	340
Maximum Power with PoE power supply (platform only) (Watts)	175	250	370	405
Maximum end-point PoE power available from PoE power supply (Watts)	130	200	280	370
Maximum end-point PoE power capacity with PoE Boost (Watts)	N/A	750	750	750
Physical Specifications				
Dimensions (H x W x D)	1.75 x 17.25 x 17.3 in. (44.5 x 438.2 x 439.4 mm)	3.5 x 17.25 x 12 in. (88.9 x 438.2 x 304.8 mm)	3.5 x 17.25 x 18.5 in. (88.9 x 438.2 x 469.9 mm)	3.5 x 17.25 x 18.5 in. (88.9 x 438.2 x 469.9 mm)
Rack height	1RU (rack unit)	2RU	2RU	2RU
Rack-mount 19in. (48.3 cm) EIA	included	included	included	included
Rack Mount 23in. (58.4 cm) EIA	optional	optional	optional	optional
Wall-mount (refer to installation guide for approved orientation)	Yes	Yes	No	No
Weight with AC power supply (no modules)	13.4 lb (6.1 kg)	18 lb (8.2 kg)	29 lb (13.2 kg.)	29 lb (13.2 kg)
Weight with AC PoE power supply (no modules)	14.3 lb (6.5 kg)	19 lb (8.6 kg)	30 lb (13.6 kg)	30 lb (13.6 kg)
Typical weight fully configured	16 lb (7.3 kg)	21 lb (9.5 kg)	34 lb (15.5 kg)	34 lb (15.5 kg)
Airflow	Front to side	Side to side	Front to back	Front to back
Optional Airflow Kit	N/A	Front to back	N/A	N/A

Selected Part Numbers and Ordering Information

Cisco 2900 Series Router	
CISCO2951/K9	Cisco 2951 w/3 GE,4 EHWIC,3 DSP,2 SM,256MB CF,512MB DRAM,IPB
CISCO2921/K9	Cisco 2921 w/3 GE,4 EHWIC,3 DSP,1 SM,256MB CF,512MB DRAM,IPB
CISCO2911/K9	Cisco 2911 w/3 GE,4 EHWIC,2 DSP,1 SM,256MB CF,512MB DRAM,IPB
CISCO2901/K9	Cisco 2901 w/2 GE,4 EHWIC,2 DSP,256MB CF,512MB DRAM,IPB
Cisco 2900 Series Security Bundles[1]	
CISCO2951-SEC/K9	Cisco 2951 Security Bundle w/SEC license PAK
CISCO2921-SEC/K9	Cisco 2921 Security Bundle w/SEC license PAK
CISCO2911-SEC/K9	Cisco 2911 Security Bundle w/SEC license PAK
CISCO2901-SEC/K9	Cisco 2901 Security Bundle w/SEC license PAK
Cisco 2900 Series Voice Bundles[1]	
CISCO2951-V/K9	Cisco 2951 Voice Bundle, PVDM3-32, UC License PAK
CISCO2921-V/K9	Cisco 2921 Voice Bundle, PVDM3-32, UC License PAK
CISCO2911-V/K9	Cisco 2911 Voice Bundle, PVDM3-16, UC License PAK
CISCO2901-V/K9	Cisco 2901 Voice Bundle, PVDM3-16, UC License PAK
C2951-CME-SRST/K9	2951 Voice Bundle w/ PVDM3-32,FL-CME-SRST-25, UC License PAK
C2921-CME-SRST/K9	2921 Voice Bundle w/ PVDM3-32,FL-CME-SRST-25, UC License PAK
C2911-CME-SRST/K9	2921 Voice Bundle w/ PVDM3-16,FL-CME-SRST-25, UC License PAK
C2901-CME-SRST/K9	2901 Voice Bundle w/ PVDM3-16,FL-CME-SRST-25, UC License PAK
Cisco 2900 Series Secure Voice Bundles[1]	
C2951-VSEC/K9	Cisco 2951 Voice Sec. Bundle, PVDM3-32, UC and SEC License PAK
C2921-VSEC/K9	Cisco 2921 Voice Sec. Bundle, PVDM3-32, UC and SEC License PAK
C2911-VSEC/K9	Cisco 2911 Voice Sec. Bundle, PVDM3-16, UC and SEC License PAK
C2901-VSEC/K9	Cisco 2901 Voice Sec. Bundle, PVDM3-16, UC and SEC License PAK
Cisco 2900 Series Secure Voice plus CUBE Bundles[1]	
C2901-VSEC-CUBE/K9	Cisco 2901 Voice Sec and CUBE Bundle, PVDM3-16, UC and SEC License P, FL-CUBEE-25
C2911-VSEC-CUBE/K9	Cisco 2911 Voice Sec and CUBE Bundle, PVDM3-16, UC and SEC License P, FL-CUBEE-25
C2921-VSEC-CUBE/K9	Cisco 2921 Voice Sec and CUBE Bundle, PVDM3-32, UC and SEC License P, FL-CUBEE-25
C2951-VSEC-CUBE/K9	Cisco 2951 Voice Sec and CUBE Bundle, PVDM3-32, UC and SEC License P, FL-CUBEE-25
Cisco 2900 Services Ready Engine Bundles[1]	
C2951-VSEC-SRE/K9	Cisco 2951 SRE Bundle, SRE 700, PVDM3-32, UC and SEC License PAK
C2921-VSEC-SRE/K9	Cisco 2921 SRE Bundle, SRE 700, PVDM3-32, UC and SEC License PAK
C2911-VSEC-SRE/K9	Cisco 2911 SRE Bundle, SRE 300, PVDM3-16, UC and SEC License PAK
C2901-VSEC-SRE/K9	Cisco 2901 SRE Bundle, SRE 300, PVDM3-16, UC and SEC License PAK
Cisco 2900 Series Export Restriction Compliance License **(Required by U.S. Export regulations for more than 85Mbps throughput or 225 IPsec tunnels)**	
FL-29-HSEC-K9	U.S. Export Restriction Compliance license for 2921/2951

1. Additional HSEC license available on 2921/2951 for high perfomance/scale IPsec deployments

For More Information

http://www.cisco.com/go/2900

Cisco 1900 Series Integrated Services Routers

The Cisco 1900 Series Integrated Services Router portfolio constitutes the entry-level, highly secure solution for WAN deployments, offering service virtualization and low total cost of ownership (TCO). The Cisco 1900 Series is ideal for small offices requiring modular flexibility for highly secure

mobility and customizable applications with circuit-speed performance up to 25 Mbps with concurrent services.

The Cisco 1900 Series offers a factory-selectable 802.11n access point and a doublewide high-speed WAN interface. Cisco 1900 Series Integrated Services Routers build on 25 years of Cisco innovation and product leadership. The new platforms are architected to enable the next phase of branch-office evolution, providing rich-media collaboration and virtualization to the branch office while maximizing operational cost savings. The Cisco Integrated Services Routers Generation 2 (ISR G2) platforms are protected for future versions with multicore CPUs, Gigabit Ethernet switching with enhanced Power over Ethernet (ePoE), and new energy monitoring and control capabilities while enhancing overall system performance.

Additionally, a new Cisco IOS Software Universal image and Services Ready Engine module enable you to decouple the deployment of hardware and software, providing a stable technology foundation that can quickly adapt to evolving network requirements. Overall, the Cisco 1900 Series offers unparalleled TCO savings and network agility through the intelligent integration of market-leading security, unified communications, wireless, and application services.

The Cisco 1900 Series builds on the best-in-class offering of the existing Cisco 1841 Integrated Services Routers by offering three models—the Cisco 1941, 1941W, and 1921. In addition to the support of a wide range of wireless and wired connectivity options supported on Cisco 1941 Series, the Cisco 1941W offers integration of a IEEE 802.11n access point that is backward-compatible with IEEE 802.11a/b/g access points.

All Cisco 1900 Series Integrated Services Routers offer embedded hardware encryption acceleration, optional firewall, intrusion prevention, and application services. In addition, the platforms support the industry's widest range of wired and wireless connectivity options such as T1/E1, xDSL, third generation (3G), and Gigabit Ethernet.

The routers offer:

- Services on demand—The Cisco 1900 Series Integrated Services Routers reduce initial capital outlays by decoupling the delivery of software from hardware on optional service modules. In addition, you receive a Cisco IOS Software Universal image capable of enabling all of Cisco's rich Cisco IOS Software features and allowing you to quickly deploy new services. The Cisco Services Ready Engine (SRE) on the Cisco 1941 enables a new operational model that allows you to reduce capital expenditures (CapEx) and deploy a variety of application services as needed on a single integrated compute services module.
- Investment protection—The Cisco 1900 Series reduces deployment costs and increases flexibility. The platform also offers investment protection with support for many existing ISR modules.
- Energy efficiency—The Cisco 1900 Series architecture includes higher-efficiency power supplies with intelligent power management, with full Cisco EnergyWise feature support in the future.
- High performance—The Cisco 1900 Series offers significant performance improvements over previous-generation ISRs.

Overall, the Cisco 1900 Series offers unparalleled TCO savings and network agility through the intelligent integration of security, wireless, and application services.

Ideal for Companies That Need These Features

Cisco 1900	• Delivers highly secure data and application services for small offices and branch offices • Two 10/100/1000 Ethernet ports • Two enhanced high-speed WAN interface card (EHWIC) slots • One internal service-module slot for application services (Cisco 1941) • Integrated 802.11a/b/n access point (Cisco 1941W) • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE)
Cisco 1921	• Two integrated 10/100/1000 Ethernet ports • Two enhanced High-Speed WAN Interface Card (EHWIC) slots that can host two single-wide or one double-wide EHWIC modules • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE • Security
Cisco 1941W/1941	• Two integrated 10/100/1000 Ethernet ports • Two Enhanced High-Speed WAN Interface Card slots that can host two single-wide or one double-wide and one single-wide (e)HWIC • One integrated 802.11n Wireless Access Point/1 Internal Services Module slot • Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE

Key Features and Benefits

The Cisco 1900 Series is architected to meet the application demands of today's branch offices with design flexibility for future applications. The modular architecture is designed to support expanding customer requirements, increased bandwidth, and fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE (ePoE).

Key architectural features include:

- Modular platform
  - The Cisco 1900 Series ISR are highly modular platforms with multiple module slots to provide connectivity and services for varied branch network requirements.
  - The ISRs offer an industry-leading breadth of LAN and WAN connectivity options through modules to accommodate field upgrades to future technologies without requiring replacement of the platform.
- Processors

- The Cisco 1900 Series is powered by high-performance multi-core processors that support growing demands of branch office networks by supporting high throughput WAN requirements.
- MultiGigabit fabric
  - The Cisco 1941 model in the Cisco 1900 Series introduces an innovative MultiGigabit Fabric (MGF) which allows for efficient module to module communication, enabling direct services interactions across modules while reducing the overhead on the router processor.
- Embedded IPSec/SSL VPN hardware acceleration
  - Embedded hardware encryption acceleration is enhanced to provide higher scalability, which, combined with an optional Cisco IOS Security license, enables WAN link security and VPN services (Both IPSec and SSL acceleration).
  - The onboard encryption hardware out-performs the Advanced Integration Modules of previous generations.
  - The routers support Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
  - More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures.
  - Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
  - Cisco Configuration Professional comes standard on all Cisco 1900 Series Integrated Services Routers.
- Integrated Gigabit Ethernet Ports
  - All onboard WAN ports are 10/100/1000 Gigabit Ethernet WAN routed ports.
  - Innovative universal-serial-bus (USB)-based console access
  - A new, innovative, mini-B USB console port supports management connectivity when traditional serial ports are not available.
  - The traditional console and auxiliary ports are also available. Either the USB-based console or the RJ-45-based console port can be used to configure the router.
- Optional power supply for distribution of power over Ethernet (PoE)
  - An optional power supply (internal in Cisco 1941 and external in Cisco 1921) provides in-line power (802.3af-compliant Power-over-Ethernet [PoE] and Cisco standard inline power) to optional integrated switch modules.
- Integrated wireless LAN
  - The Cisco 1941W offers a secure integrated access point in a single device.
  - Integrated access point is based on the IEEE 802.11n draft 2.0 standard that uses MIMO (Multi-Input, Multiple-output) to improve coverage for existing 802.11a/ b/g clients and new 802.11n clients.
  - The Cisco 1941W supports dual radios-802.11 b/g/n and 802.11a/n and is capable of operating in both autonomous and unified modes.

Specifications

Services and Slot Density	Cisco 1941, Cisco 1941W	Cisco 1921
Embedded hardware-based crypto acceleration (IPSec + SSL)	Yes	Yes
Total Onboard LAN 10/100/1000	2	2
RJ-45-Based Ports	2	2
EHWIC Slots	2	2
Double-Wide EHWIC slots (use of a double-wide EHWIC slot will consume two EHWIC slots)	1	1
ISM Slots	1 (0 on the Cisco 1941W)	0
Memory (DDR2 DRAM) - Default	512 MB	512 MB
Memory (DDR2 DRAM) - Maximum	2.0 GB	512 MB
Compact Flash—Default	External slot 0: 256 MB slot 1: none	Internal 256 MB
Compact Flash—Maximum	External slot 0: 4 GB slot 1: 4 GB	Internal 256 MB
External USB flash memory slots (Type A)	2	1
USB Console Port (Type B) (up to 115.2 kbps)	1	1
Serial Console Port (up to 115.2 kbps)	1	1

Serial Auxiliary Port (up to 115.2 kbps	1	1
Power Supply Options	AC, PoE (Internal)	AC, PoE
Redundant Power Supply Support	No	No
Power Specifications		
AC Input Voltage	100–240 V ~	100–240 V ~
AC Input Frequency	47–63 Hz	47–63 Hz
AC Input Current range AC Power Supply (Max) (Amps)	1.5–0.6	1.5–0.6
AC Input Surge Current	<50 A	<50 A
Typical Power (No Modules)	35 W	25W
Maximum Power capacity with AC power supply	110 W	60 W
Maximum Power capacity with PoE power supply (platform only)	110 W	70 W
Maximum PoE device power capacity with PoE power supply	80 W	80 W
Physical Specifications		
Dimensions (H x W x D)	3.5 in x 13.5 in x 11.5 in	1.75 in x 13.5 in x 11.5 in
Rack Height	2 RU	1 RU
Rack-mount 19in. (48.3 cm) EIA	Included	Optional
Wall-mount (refer to installation guide for approved orientation)	Yes	Yes
Weight-with AC power supply (no modules)	12 lbs	7 lb
Weight-with PoE power supply (no modules)	12.8 lbs	7 lbs (external PoE)
Maximum Weight-Fully Configured	14 lbs	8 lbs
Airflow	Front to Side	Back to side
CISCO1941W WLAN Specifications		
WLAN hardware	· IEEE 802.11n draft 2.0 standards-based access point with 802.11a/ b/g compatibility · Automatic rate selection for 802.11g/n · Dual radios for 802.11b/g/n and 802.11a/n modes. · RP-TNC connectors for field-replaceable external antennas · 2-dBi default antenna gain · 2 x 3 multiple input, multiple output (MIMO) radio operation · Wi-Fi 802.11n Draft v2.0 certified	
WLAN software features	· Autonomous or unified access point · Cisco WCS support for monitoring of autonomous-mode access points · Option to maximize throughput or maximize range · Software-configurable transmit power · Radio roles, including access point, root bridge, non-root bridge, and workgroup bridge · Wi-Fi Multimedia (WMM) certification · Traffic specifications (TSPEC) Call Admission Control (CAC) to ensure voice quality is maintained · Unscheduled Automatic Power Save Delivery (UPSD) to reduce latency	
Unified WLAN management	· Unified access point features: · Supported by wireless LAN controller and Cisco WCS · Configurable local or central switching for HREAP mode · Radio management through Cisco WCS · Transparent roaming with mobility groups	
Certifications		

Service Set Identifiers (SSIDs)	16
Wireless VLANs	16
WLAN security features	• Standard 802.11i • Wi-Fi Protected Access (WPA) and AES (WPA2) • EAP authentication: Cisco LEAP, PEAP, Extensible Authentication Protocol Transport Layer Security (EAP TLS), Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST), Extensible Authentication Protocol-Subscriber Information Module (EAP-SIM), Extensible Authentication Protocol-Message Digest Algorithm 5 (EAP-MD5), and Extensible Authentication Protocol-Tunneled TLS (EAP-TTLS) • Static and dynamic Wired Equivalent Privacy (WEP) • Temporal Key Integrity Protocol/Simple Security Network (TKIP/SSN) encryption • MAC authentication and filter • User database for survivable local authentication using LEAP and EAP-FAST • Configurable limit to the number of wireless clients • Configurable RADIUS accounting for wireless clients • Pre-Shared Keys (PSKs) (WPA-small office or home office [WPA-SOHO])
Encrypted wireless VLANs	16
Multiple Broadcast Service Set Identifiers (MBSSIDs)	16

Supported Modules

Cisco 1900 Series supports a wide range of modules that span an industry-leading breadth of services at the branch office. Please refer to the following link for the list of modules supported on the Cisco 1900:
http://cisco.com/en/US/products/ps1900/products_relevant_interfaces_and_modules.html.

Selected Part Numbers and Ordering Information

Cisco 1900 Series Router	
CISCO1941/K9	Cisco 1941 w/2 GE,2 EHWIC slots,256MB CF,512MB DRAM,IP Base
CISCO1921/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, IP Base
Cisco 1900 Series Wireless Bundles	
CISCO1941W-A-N-SEC/K9	Cisco 1941 Router w/ 802.11 a/b/g/n FCC Compliant WLAN ISM, SEC Lic
CISCO1941W-E-N-SEC/K9	Cisco 1941 Router w/ 802.11 a/b/g/n ETSI WLAN ISM, SEC Lic
CISCO1941W-A/K9	Cisco 1941 Router w/ 802.11 a/b/g/n FCC Compliant WLAN ISM
CISCO1941W-C/K9	Cisco 1941 Router w/802.11 a/b/g/n China Compliant WLAN ISM
CISCO1941W-E/K9	Cisco 1941 Router w/ 802.11 a/b/g/n ETSI Compliant WLAN ISM
CISCO1941W-P/K9	Cisco 1941 Router w/ 802.11 a/b/g/n Japan Compliant WLAN ISM
CISCO1941W-N/K9	Cisco 1941 Router w/802.11 a/b/g/n Aus, NZ Compliant WLAN ISM
CISCO1941/K9	Cisco 1941 w/2 GE,2 EHWIC slots,256MB CF,512MB DRAM,IP Base
CISCO1921/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, IP Base Lic
Cisco 1900 Series Security Bundles	
CISCO1941-SEC/K9	Cisco 1941 Security Bundle w/SEC license PAK
Cisco1921-T1SEC/K9	Cisco 1921 SEC T1 Bundle incl. HWIC-1DSU-T1,256F/512D, SEC Lic
CISCO1921-SEC/K9	CISCO 1921 Modular Router, 2 GE, 2 EHWIC slots, 256F/512D, SEC Lic
Cisco 1900 Series DSL Bundles	
C1921-4SHDSL/K9	CISCO 1921 ADSL Annex M, 3G HSPA Bundle, 256F/512D, SEC Lic
C1921-ADSL2-M/K9	Cisco 1921 ADSL2 Annex M Bundle, HWIC-1ADSL-M, 256F/512D, IP Base Lic
CISCO1921-ADSL2/K9	Cisco 1921 ADSL2+ Bundle, HWIC-1ADSL, 256F/512D, IP Base Lic

For More Information

http://www.cisco.com/go/1900

Cisco 800 Series Integrated Services Routers

Cisco 880 Series Integrated Services Routers are fixed-configuration routers that provide collaborative business solutions for secure voice and data communication to small businesses and enterprise teleworkers. They offer concurrent broadband services over third-generation (3G), Metro Ethernet, and multiple DSL technologies to provide business continuity. Wireless 802.11n and 3G offer LAN and WAN mobility. The routers provide the performance required for concurrent services, including firewall, intrusion prevention, content filtering, and encryption for VPNs; optional 802.11g/n for mobility; and quality-of-service (QoS) features for optimizing voice and video applications. In addition, the web-based Cisco Configuration Professional configuration tool simplifies setup and deployment. Centralized management capabilities give network managers visibility and control of the network configurations at the remote site.

Ideal for Companies That Need These Features

Cisco 800
- Ethernet ports with VLAN support, Metro Ethernet support
- WAN connectivity, including 3G and ISDN Basic Rate Interface (BRI), ADSL, and G.SHDSL
- Advanced security including Firewall, Intrusion Prevention, Content Filtering, Encryption for VPN
- Wireless LAN (802.11 a/g/n) access points
- Quality of service (QoS) features for optimizing voice and video applications

Key Features and Benefits

Cisco 880 Series Integrated Services Routers offer:
- High performance for broadband access in small offices and small branch-office and teleworker sites
- Collaborative services with secure analog, digital voice, and data communication
- Business continuity and WAN diversity with redundant WAN links: Fast Ethernet, G.SHDSL, VDSL2, 3G, and ISDN
- Survivable Remote Site Telephony (SRST) voice continuity for enterprise small branch-office and teleworker sites
- Enhanced security, including:
  - Firewall with advance application and control for email, instant messaging (IM), and HTTP traffic
  - Site-to-site remote-access and dynamic VPN services—IP Security (IPsec) VPNs (Triple Data Encryption Standard [3DES] or Advanced Encryption Standard [AES]), Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport VPN with onboard acceleration, and Secure Sockets Layer (SSL) VPN
  - Intrusion prevention system (IPS)—An inline, deep-packet inspection feature that effectively mitigates a wide range of network attacks
  - Content filtering—A subscription-based integrated security solution that offers category-based reputation rating; keyword blocking; and protection against adware, malware, spyware, and URL blocking
- Four-port 10/100 Fast Ethernet managed switch with VLAN support; two ports support Power over Ethernet (PoE) for powering IP phones or external access points
- Secure 802.11g/n access point option based on draft 802.11n standard with support for autonomous or Cisco Unified WLAN architectures
- CON/AUX port for console or external modem
- One USB 1.1 port for security eToken credentials, booting from USB, loading configuration
- Easy setup, deployment, and remote-management capabilities through web-based tools and Cisco IOS® Software

Cisco 890 Series Integrated Services Routers are fixed-configuration routers that provide collaborative business solutions for secure voice and data communications to enterprise small branch offices. They are designed to deliver secure broadband, Metro Ethernet, wireless LAN (WLAN) connectivity, and business continuity. The routers also come with powerful management tools, such as the web-based Cisco Configuration Professional configuration management tool, which simplifies setup and deployment. Centralized management capabilities give network managers visibility and control of the network configurations at the remote site.

Cisco 890 Series Integrated Services Routers offer:
- High performance for secure broadband and Metro Ethernet access with concurrent services for enterprise small branch offices
- Business continuity and WAN diversity with redundant WAN links: Fast Ethernet, V.92, and ISDN Basic Rate Interface (BRI)
- Integrated secure 802.11a/g/n access point (optional) based on the draft 802.11n standard; dual-band radios for mobility and support for autonomous or Cisco Unified WLAN architectures
- Enhanced security including:
  - Firewall with advance application and control for email, instant messaging (IM), and HTTP traffic
  - Site-to-site remote-access and dynamic VPN services: IP Security (IPsec) VPNs (Triple Data Encryption Standard [3DES] or Advanced Encryption Standard [AES]), Dynamic Multipoint VPN [DMVPN], Group Encrypted Transport VPN [GET VPN] with onboard acceleration, and Secure Sockets Layer [SSL] VPN
  - Intrusion prevention system (IPS): An inline, deep-packet-inspection feature that mitigates a wide range of network attacks
  - Content filtering: A subscription-based integrated security solution that offers category-based reputation rating, keyword blocking, and protection against adware, malware, spyware, and URL blocking

- An 8-port 10/100 Fast Ethernet managed switch with VLAN support and 4-port support for Power over Ethernet (PoE) (optional) to power IP phones or external access points
- Metro Ethernet features include:
  - One 1000 BASE-T Gigabit Ethernet WAN port
  - One 10/100 BASE-T Fast Ethernet WAN port
  - Intelligent hierarchical quality of service (HQoS): Supports hierarchical queuing and shaping
  - Connectivity Fault Management (CFM), based on 802.1ag
  - 802.3ah standard based Link operational administration and maintenance (OAM)
  - Ethernet Local Management Interface (E-LMI) for the Customer Edge
  - CFM Interworking and backwards compatibility
  - Performance Management based on IP service-level agreement (SLA) for Ethernet
- Dedicated console and auxiliary ports for configuration and management
- Two USB 2.0 ports for security eToken credentials, booting, and loading configuration from USB
- Easy setup, deployment, and centralized and remote-management capabilities through web-based tools and Cisco IOS Software

Specifications

Feature	Cisco 861	Cisco 881	Cisco 887V	Cisco 888/ 888E	Cisco 891	Cisco 892
Fixed LAN Port Connections	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	4-port 10/100 Ethernet switch	8-port 10/100 Ethernet switch	8-port 10/100 Ethernet switch
PoE	No	Optional 2-port	Optional 2-port	Optional 2-port	Optional 4-port	Optional 4-port
Fixed WAN Port Connections	1-port 10/100 Ethernet	1-port 10/100 Ethernet	1-port VDSL2	888: 1-port G.SHDSL (ATM mode) 888E: 1-port G.SHDSL (EFM mode)	1-port 10/100 Ethernet, 1-port GE	1-port 10/100 Ethernet, 1-port GE
Wireless LAN	IEEE 802.11 b/g/n ("W" model)	IEEE 802.11 b/g/n ("W" model)	No	IEEE 802.11 b/g/n ("W" model)	IEEE 802.11 a/b/g/n ("W" model)	IEEE 802.11 a/b/g/n ("W" model)
3G	No	Yes ("G" model)	Yes ("G" model)	Yes ("G" model)	No	No
ISDN BRI	No	No	Yes	Yes	No	Yes
V.92 modem	No	No	No	No	Yes	No
4-port FXS	No	Yes ("SRST" model)	No	Yes ("SRST" model)	No	No
FXO	No	Yes ("SRST" model)	No	No	No	No
Voice BRI	No	No	No	Yes ("SRST" model)	No	No
Maximum VPN Tunnels	5	20	20	20	50	50
Content Filtering	No	Yes	Yes	Yes	Yes	Yes
Stateful Firewall	Yes	Yes	Yes	Yes	Yes	Yes
Inline IPS	No	Yes	Yes	Yes	Yes	Yes

Selected Part Numbers and Ordering Information

CISCO861W-GN-A-K9, E-K9, P-K9	Cisco 861 Ethernet Security Router 802.11n (Americas-A, Europe-E. Japan-P)
CISCO881-SEC-K9	Cisco 881 Ethernet Sec Router w/ Adv IP Services
CISCO881W-GN-A-K9, E-K9, P-K9	Cisco 881 Ethernet Security Router 802.11n (Americas-A, Europe-E. Japan-P)
CISCO881GW-GN-A-K9, E-K9	Cisco 881 Ethernet Security Router with 3G, 802.11n (Americas-A, Europe-E)
CISCO881G-A-K9	Cisco 881G FE Sec Router with Adv IP Serv, 3G N. America GSM/HSPA
CISCO881G-G-K9	Cisco 881G FE Sec Router with Adv IP Serv, 3G N. Global GSM/HSPA
CISCO881G-S-K9	Cisco 881G FE Sec Router bundle with Adv IP Serv, 3G Sprint
CISCO881G-V-K9	Cisco 881G FE Sec Router bundle with Adv IP Serv, 3G Verizon
CISCO887V-SEC-K9	Cisco 887 VDSL2 over POTS Sec Router w/ ISDN B/U, Adv IP Services

CISCO888GW-G-AN-K9, EN-K9	Cisco 888 G.SHDSL Wireless Router with 3G; 802.11n (Americas-A, Europe-E)
CISCO888EW-GN-E-K9	Cisco 888E G.SHDSL Router with 802.11n ETSI Compliant and 802.3ah EFM Support
C881SRSTW-GN-A-K9, E-K9	Cisco 881 SRST Ethernet Security Router with FXS, FXO; 802.11n (Americas-A, Europe-E)
C888SRSTW-GN-A-K9, E-K9	Cisco 881 SRST Ethernet Security Router with FXS, BRI; 802.11n (Americas-A, Europe-E)
CISCO891W-AGN-A-K9, N-K9	Cisco 891W Gigabit Ethernet Security Router w/ 802.11n (Americas-A, Australia-N)
CISCO892W-AGN-E-K9	Cisco 892W Gigabit Ethernet Security Router w/ 802.11n ETSI Comp

For More Information

http://www.cisco.com/go/800

Cisco 3800 Series Integrated Services Routers

The Cisco 3800 Series Integrated Services Routers constitute the flagship platform in a portfolio of next-generation routers that integrate advanced technologies, adaptive services, wireless support, and secure enterprise communications.

These new routers offer the performance and reliable packet delivery necessary to efficiently deliver mission-critical network capabilities, including real-time applications such as voice over IP (VoIP), business video, and collaborative communications. Architectural enhancements include embedded security processing, significant platform performance and memory improvements, and new high-density interface types.

Ideal for Companies That Need These Features

Cisco 3825
- Low density (up to 88 ports), integrated 10/100 switching
- Up to 360W Cisco Inline Power, or PoE
- Integrated onboard security acceleration for IPsec for improved IPsec performance and an integral part of Cisco Self-Defending Network
- Medium- to large-sized branch offices and businesses that can support concurrent data, security, voice, and advanced services at wire speed up to one-half T3/E3 rates.

Cisco 3845
- Same features as above plus higher availability and resiliency (such as redundant system and inline power, online-insertion-and-removable (OIR) components, and field-replaceable components such as the CPU motherboard and fan assembly).
- Medium- to large-sized branch offices and businesses, providing very high performance and densities for concurrent data, security, voice, and advanced services with the ability to run at wire speed up to T3/E3 rates.

Key Features and Benefits

- Cisco IOS Firewall provides stateful, application-based filtering (context-based access control); per-user authentication and authorization; real-time alerts; a transparent firewall; and an IPv6 firewall.
- The Cisco 3845 Integrated Services Routers offer VPN services, including Data Encryption Standard (DES), Triple DES (3DES), and Advanced Encryption Standard (AES) 128, 192, and 256 cryptology support. They support embedded hardware-based VPN acceleration on the motherboard, and (optional) higher-performance AIM-based security acceleration with Layer 3 compression. The routers support up to 1800 tunnels with the VPN module, Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
- The 3800 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
- Onboard universal-serial-bus (USB) 1.1 port(s) offer future support for secure token and flash memory.
- More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module. IPS AIM is also supported.
- Content Filtering includes URL/keyword blocking and features category-based productivity and security ratings. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs™ threat database, and is closely integrated with Cisco IOS Software.
- Cisco Network Admission Control (NAC), a Cisco Self-Defending Network initiative, seeks to dramatically improve the ability of networks to identify, prevent, and adapt to threats by allowing network access only to compliant and trusted endpoint devices.
- Cisco Configuration Professional comes standard on all Cisco 3800 Series Integrated Services Routers.
- Integrated IEEE 802.11 a/b/g standalone access-point high-speed WAN interface cards (HWICs) provide wireless support.
- Wireless LAN (WLAN) controller modules are a component of the Cisco Unified Wireless Network.
- The routers support IP phones through an optional integrated power supply with inline power. Standard 802.3af support derives from 360W of inline power.
- The routers offer analog voice support for up to 88 foreign-exchange-station (FXS) and 56 foreign-exchange-office (FXO) ports and digital voice support for up to 720 calls. The motherboard has 4 packet-voice-DSP-module (PVDM) slots. Finally, the routers support local conferencing and transcoding.

- Cisco Communications Manager Express software on these routers supports up to 240 phones; Cisco Survivable Remote Site Telephony (SRST) supports up to 720 phones.
- The routers have up to 120 mailboxes using a Cisco Unity Express network module.
- Voice interfaces support FXS, FXO, Direct Inward Dial (DID), Ear & Mouth (E&M), Centralized Automated Message Accounting (CAMA), Basic Rate Interface (BRI), T1, E1, J1, Primary Rate Interface (PRI), Q.SIG, and channel associated signaling (CAS).

Specifications

Feature	Cisco 3825	Cisco 3845
Network Module Slots	2	4
Advanced Integration Module (AIM) Slots	2	Same As Cisco 3825
High speed WAN Interface Card (HWIC) Slots	4	Same As Cisco 3825
10/100/1000 GE Ports	2	Same As Cisco 3825
Small Form Pluggable (SFP) ports	1	Same As Cisco 3825
Onboard PVDM slots	4	Same As Cisco 3825
WAN Network Modules	Yes	Same As Cisco 3825
ATM AIM Modules	Yes	Same As Cisco 3825
Voice/Fax Network Modules	Yes	Same As Cisco 3825
WAN Interface Card (WIC) Modules	Yes	Same As Cisco 3825
Multiflex Voice/WAN Interface Cards	Yes	Same As Cisco 3825
Voice Interface Card (VIC) Modules	Yes	Same As Cisco 3825
Modem Modules	Yes	Same As Cisco 3825
EtherSwitch Modules	Yes, HWIC and Network Modules	Same As Cisco 3825
Performance with Services	Up to 14 T1/E1's	Up to T3
VPN/Security Advanced Integration Modules (AIM)	Yes, AIM-VPN/EPII-PLUS	Yes, AIM-VPN/EPII-PLUS
Flash Memory (External)	64 MB (default) -256 MB (optional)	Same As Cisco 3825
DRAM Memory	256 MB (default) - 1024 MB (max)	Same As Cisco 3825
Power Supply	AC, AC +POE, DC, external redundant AC	AC, DC, internal redundant AC + POE
Dimensions (H x W x D)	3.5 x 17.1 x 14.7 in.	5.25 x 17.25 x 16 in.

Selected Part Numbers and Ordering Information

Cisco 3800 Series Integrated Services Routers	
CISCO3825	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and AC power
CISCO3825-AC-IP	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, AC Power, and PoE
CISCO3825-DC	Cisco 3825 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and DC power
CISCO3845	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 4 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and AC power
CISCO3845-AC-IP	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 4 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, AC Power, and PoE
CISCO3845-DC	Cisco 3845 Integrated Services Router with 2 Gigabit Ethernet, 1 SFP, 2 NME, 4 HWIC, 2 AIM, Cisco IOS IP Base software, and DC power

Cisco 3800 Series Secure Voice Bundles	
CISCO3845-H-VSEC/K9	Cisco 3845 High Performance VSEC:AIM-VPN3/SSL, PVDM2, CCME/SRST, AIS, 512F/1024D
CISCO3825-H-VSEC/K9	Cisco 3825 High Performance VSEC:AIM-VPN3/SSL, PVDM2, CCME/SRST, AIS, 512F/1024D
C3845-VSEC/K9	Cisco 3845 Voice Security Bundle, PVDM2-64,Adv IP Services, 128MB Flash/512MB DRAM
C3825-VSEC/K9	Cisco 3825 Voice Security Bundle, PVDM2-64,Adv IP Services, 128MB Flash/512MB DRAM

C3845-VSEC-CCME/K9	Cisco 3845 VSEC Bundle, PVDM2-64, FL-CCME-240, Adv IP Services, 128MB Flash/512MB DRAM
C3825-VSEC-CCME/K9	Cisco 3825 VSEC Bundle, PVDM2-64, FL-CCME-168, Adv IP Services, 128MB Flash/512MB DRAM
C3845-VSEC-SRST/K9	Cisco 3845 VSEC Bundle, PVDM2-64, FL-SRST-240, Adv IP Services,128MB Flash/512MB DRAM
C3825-VSEC-SRST/K9	Cisco 3825 VSEC Bundle, PVDM2-64, FL-SRST-168, Adv IP Services, 128MB Flash/512MB DRAM
C3845-VSEC-CUBE/K9	Cisco 3845 VSEC Bundle w/ PVDM2-64, FL-CUBE-400, AVS,128F/512D
C3825-VSEC-CUBE/K9	Cisco 3825 VSEC Bundle w/ PVDM2-64, FL-CUBE-300, AVS,128F/512D
Cisco 3800 Series Security Bundles	
CISCO3845-SEC/K9	Cisco 3845 Security Bundle with IOS Advanced Security, 64MB Flash/256 MB DRAM
CISCO3845-HSEC/K9	Cisco 3845 Security Bundle with IOS Advanced IP Services, AIM-VPN/HPII Plus, 128MB Flash/512 MB DRAM
CISCO3825-SEC/K9	Cisco 3825 Security Bundle with IOS Advanced Security, 64MB Flash/256MB DRAM
CISCO3825-HSEC/K9	Cisco 3825 Security Bundle with IOS Advanced IP Services, AIM-VPN/EPII Plus, 128MB Flash/512 MB DRAM
Cisco 3800 Series Voice Bundles	
CISCO3845-V/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, 64 MB Flash/256 MB DRAM
CISCO3845-SRST/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, FL-SRST (240 users), 64 MB Flash/256 MB DRAM
CISCO3845-CCME/K9	Cisco 3845 Voice Bundle with IOS SP Services, PVDM2-64, FL-CCME (240 users), 64 MB Flash/256 MB DRAM
CISCO3825-V/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, 64 MB Flash/256 MB DRAM
CISCO3825-SRST/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, FL-SRST (168 users), 64 MB Flash/256 MB DRAM
CISCO3825-CCME/K9	Cisco 3825 Voice Bundle with IOS SP Services, PVDM2-64, FL-CCME (168 users), 64 MB Flash/256 MB DRAM
Cisco 3800 Series WAAS Optimization Bundles	
CISCO3825-WAE/K9	Cisco 3825, NME-WAE-502/K9,WAAS Trans,IPBase,128F/512D
CISCO3845-WAE/K9	Cisco 3845, NME-WAE-502/K9,WAAS Trans,IPBase,128F/512D

For More Information

http://www.cisco.com/go/3800

Cisco 2800 Series Integrated Services Routers

The Cisco 2800 Series Integrated Services Routers offer performance improvements, increased security and voice performance, wireless support new embedded service options, and increased slot performance and density. These routers maintain support for most existing interface cards and modules available for the Cisco 1700 and 2600 Series Routers. Comprising four platforms (the Cisco 2801, Cisco 2811, Cisco 2821, and Cisco 2851 Integrated Services Routers), the Cisco 2800 Series features the ability to deliver multiple, high-quality, simultaneous services at wire speed at up to multiple T1, E1, and xDSL connections.

Ideal for Companies That Need These Features

Cisco 2800

- Performance and densities for concurrent data, security, voice, and advanced services up to multiple T1, E1, and xDSL connections
- VPN connections (or plan to migrate to them over time)
- Integrated security services that enable network device protection, threat defense, secure connectivity, and endpoint protection and control
- Secure integrated call processing, voicemail, flexible telephony interfaces, redundancy for centralized call processing, or robust digital-signal-processor (DSP) support, including local conferencing and transcoding
- Wireless support through integrated IEEE 802.11 a/b/g standalone access-point high-speed WAN interface cards (HWICs)
- Wireless LAN controller modules (components of the Cisco Unified Wireless Network)
- Integrated Layer 2 switching capability in densities from 4 to 48 ports and the ability to use Cisco StackWise connectivity

Key Features and Benefits

- Cisco 2800 Integrated Services Routers offer a modular architecture; a wide variety of LAN and WAN options are available. Network interfaces can be upgraded in the field to accommodate future technologies. Several types of slots are available to add connectivity and services in the future on an "integrate-as-you-grow" basis.
- Cisco IOS Firewall provides stateful, application-based filtering (context-based access control); per-user authentication and authorization; real-time alerts; a transparent firewall; and an IPv6 firewall.
- The Cisco 2800 Integrated Services Routers offer VPN services, including Data Encryption Standard (DES), Triple DES (3DES), and Advanced Encryption Standard (AES) 128, 192, and 256 cryptology support. They support embedded hardware-based VPN acceleration on the motherboard, and (optional) higher-performance AIM-based security acceleration with Layer 3 compression. The routers support, Cisco Easy VPN (remote and server), Dynamic Multipoint VPN (DMVPN), Group Encrypted VPN (GET VPN), and Secure Socket Layer VPN (SSL VPN).
- The 2800 Series routers support Multiprotocol Label Switching (MPLS) VPNs. Specific provider-edge capabilities include Virtual Route Forwarding (VRF) firewall and VRF IP Security (IPsec).
- Onboard universal-serial-bus (USB) 1.1 port(s) offer future support for secure token and flash memory.
- More than 3700 intrusion-prevention-system (IPS) signatures are supported in Cisco IOS Software, with the ability to load and enable selected IPS signatures. More than 4500 IPS signatures are available with the optional high-performance intrusion-prevention-system (IPS) network module. IPS AIM is also supported.
- URL filtering features provided. Local URL filtering occurs in Cisco IOS Software based on the external server.
- Integrated dual Fast Ethernet or Gigabit Ethernet ports provide two 10/100 Ethernet ports on the Cisco 2801 and 2811 models and two 10/100/1000 Ethernet ports on the Cisco 2821 and 2851 models.
- The routers offer high-speed WAN interface card (HWIC) slots with enhanced functions, including wireless LAN (WLAN) access points, dual advanced-integration-module (AIM) slots, and packet-voice-DSP-module (PVDM) slots on the motherboard.
- IP telephony solutions facilitate an all-in-one voice-over-IP (VoIP) solution with Cisco Unified Communications Manager Express, telephony interfaces, and Cisco Unity Express for voicemail and Automated-Attendant functions.
- Digital-signal-processor (DSP) modules deliver support for analog and digital voice, conferencing, transcoding, and secure Real-Time Transport Protocol (RTP) applications.
- Cisco Network Admission Control (NAC), a Cisco Self-Defending Network initiative, seeks to dramatically improve the ability of networks to identify, prevent, and adapt to threats by allowing network access only to compliant and trusted endpoint devices.
- The routers offer an optional integrated power supply for distribution of Power over Ethernet (PoE).
- The routers provide real-time clock support.

Specifications

Feature	Cisco 2801	Cisco 2811	Cisco 2821	Cisco 2851
Fixed USB 1.1 ports	1	2	Same As Cisco 2811	Same As Cisco 2811
Onboard LAN ports	2 - 10/100	Same As Cisco 2811	2 - 10/100/1000	Same As Cisco 2821
Onboard AIM (internal) slot	2	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Interface card slots	4 slots; 2 slots support HWIC, WIC, VIC, or VWIC type modules 1 slot supports WIC, VIC, or VWIC type modules 1 slot supports VIC or VWIC type modules	4 slots, each slot can support HWIC, WIC, VIC, or VWIC type modules		
Network-module slot	No	1 slot, supports NM and NME type modules	1 slot, supports NM, NME and NME-X type modules	1 slot, supports NM, NME, NME-X, and NME-XD type modules
Extension Voice Module Slot	0	Same As Cisco 2801	1	Same As Cisco 2821
PVDM (DSP) slots on motherboard	2	Same As Cisco 2801	3	Same As Cisco 2821
Integrated hardware-based encryption	Yes	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Optional PoE	Yes, requires AC-IP system power supply	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Console port (up to 115.2 kbps)	1	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Auxiliary port (up to 115.2 kbps)	1	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Minimum Cisco IOS Software release	12.3(8)T4	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801

Rack mounting	Yes, 19-inch	Yes, 19- and 23-in. options	Same As Cisco 2811	Same As Cisco 2811
Wall mounting	No	Yes	Same As Cisco 2801	Same As Cisco 2801
AC input voltage	100 to 240 VAC	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC input frequency	47-63 Hz	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC input current	2A (110V); 1A (230V)	Same As Cisco 2801	3A (110V); 2A (230V)	Same As Cisco 2821
AC input surge current	50A maximum, one cycle (-48V power included)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
AC-IP max in-line power distribution	120W	160W	240W	360W
AC-IP input current	4A (110V); 2A (230V)	Same As Cisco 2801	8A (110V); 4A (230V)	Same As Cisco 2821
AC-IP input surge current	50A maximum, one cycle (−48V power included)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
DC input voltage	No DC Power Option available	24 to 60 VDC, autorunning positive or negative	Same As Cisco 2811	Same As Cisco 2811
DC input current	No DC Power Option available	8A (24V) 3A (60V) Startup current 5A<10 ms	12A (24V) 5A (60V) Startup current 50A<10 ms	Same As Cisco 2821
Power dissipation— AC without PoE support	150W (511 BTU/hr.)	170W (580 BTU/hr.)	280W (955 BTU/hr.)	Same As Cisco 2821
Power dissipation— AC with PoE-IP phones	180W (612 BTU/hr.)	160W (546 BTU/hr.)	240W (819 BTU/hr.)	Same As Cisco 2821
Power dissipation— DC	Not applicable	180W (614 BTU/hr.)	300W (1024 BTU/hr.)	Same As Cisco 2821
Redundant Power Support (RPS)	No	External only, connector for RPS provided by default	Same As Cisco 2811	Same As Cisco 2811
Recommended RPS unit	No RPS option	Cisco RPS-675 Redundant Power System	Same As Cisco 2811	Same As Cisco 2811
Operating temp	32 to 104ºF; (0 to 40ºC)	Same As Cisco 2801	Same As Cisco 2801	Same As Cisco 2801
Operating humidity	10 to 85% non condensing	5 to 95%, non condensing	Same As Cisco 2811	Same As Cisco 2811
Non operating temp	N/A	−4 to 149žF (−20 to 65žC)	Same As Cisco 2811	Same As Cisco 2811
Dimensions (H x W x D)	1.72 x 17.5 x 16.5 in. (43.7 x 445 x 419 mm.)	1.75 x 17.25 x 16.4 in. (44.5 x 438.2 x 416.6 mm.)	3.5 x 17.25 x 16.4 in. (88.9 x 438.2 x 416.6 mm.)	Same As Cisco 2821
Rack height	1 rack unit (1RU)	1 rack unit (1RU)	2RU	Same As Cisco 2821
Weight (configured)	13.7 lb. (6.2 kg)	14 lb. (6.4 kg)	25 lb. (11.4 kg)	Same As Cisco 2821

Selected Part Numbers and Ordering Information

Cisco 2800 Series Router	
CISCO2801	Integrated services router with AC power, 2FE, 4 Interface Card Slots, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2801-AC-IP	Integrated services router with AC power including Inline power distribution capability, 2FE, 4 Interface Card Slots, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811	Integrated services router with AC power, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811-AC-IP	Integrated services router with AC power including Inline power distribution capability, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2811-DC	Integrated services router with DC power, 2FE, 1 NME, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software

CISCO2821	Integrated services router with AC power, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 2 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2821-AC-IP	Integrated services router with AC power including inline power distribution capability, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2821-DC	Integrated services router with DC power, 2GE, 1 NME-X, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851	Dual Gigabit Ethernet integrated services router with AC power, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851-AC-IP	Integrated services router with AC power including inline power distribution capability, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
CISCO2851-DC	Integrated services router with DC power, 2GE, 1 NME-XD, 1 EVM, 4 HWICs, 3 PVDM slots, 2 AIMs, and Cisco IOS IP Base Software
Cisco 2800 Series Security Bundles	
CISCO2801-SEC/K9	Cisco 2801 Security Bundle,Adv Security,64F/256D
CISCO2801-HSEC/K9	Cisco 2801 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2811-SEC/K9	Cisco 2811 Security Bundle,Adv Security,64F/256D
CISCO2811-HSEC/K9	Cisco 2811 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2821-SEC/K9	Cisco 2821 Security Bundle,Adv Security,64F/256D
CISCO2821-HSEC/K9	Cisco 2821 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
CISCO2851-SEC/K9	Cisco 2851 Security Bundle,Adv Security,64F/256D
CISCO2851-HSEC/K9	Cisco 2851 Bundle w/AIM-VPN/SSL-2,Adv. IP Serv,10 SSL lic,64F/256D
Cisco 2800 Series Voice Bundles	
CISCO2801-V/K9	Cisco 2801 Voice Bundle,PVDM2-8,SP Serv,64F/256D
CISCO2801-CCME/K9	Cisco 2801 Voice Bundle w/ PVDM2-8,FL-CCME-24, SP Serv,64F/256D
CISCO2801-SRST/K9	Cisco 2801 Voice Bundle w/ PVDM2-8,FL-SRST-24,SP Serv,64F/256D
CISCO2811-V/K9	Cisco 2811 Voice Bundle,PVDM2-16,SP Serv,64F/256D
CISCO2811-CCME/K9	Cisco 2811 Voice Bundle w/ PVDM2-16,FL-CCME-36,SP Serv,64F/256D
CISCO2811-SRST/K9	Cisco 2811 Voice Bundle w/ PVDM2-16,FL-SRST-36,SP Serv,64F/256D
CISCO2821-V/K9	Cisco 2821 Voice Bundle,PVDM2-32,SP Serv,64F/256D
CISCO2821-CCME/K9	Cisco 2821 Voice Bundle w/ PVDM2-32,FL-CCME-48,SP Serv,64F/256D
CISCO2821-SRST/K9	Cisco 2821 Voice Bundle w/ PVDM2-32,FL-SRST-48,SP Serv,64F/256D
CISCO2851-V/K9	Cisco 2851 Voice Bundle,PVDM2-48,SP Serv,64F/256D
CISCO2851-CCME/K9	Cisco 2851 Voice Bundle w/ PVDM2-48,FL-CCME-96,SP Serv,64F/256D
CISCO2851-SRST/K9	Cisco 2851 Voice Bundle w/ PVDM2-48,FL-SRST-96,SP Serv,64F/256D
Cisco 2800 Series Unified Communications Bundles	
C2801-10UC/K9	Cisco 2801 w/ PVDM2-32,AIM-CUE,10 CME/CUE/Ph lic,SP Serv,128F/256D
C2801-10UC-VSEC/K9	Cisco 2801 w/ PVDM2-32,AIM-CUE,10 CME/CUE/Ph lic,Adv IP,128F/256D
C2811-15UC/K9	Cisco 2811 w/ PVDM2-32,AIM-CUE,15 CME/CUE/Ph lic,SP Serv,128F/256D
C2811-15UC-VSEC/K9	Cisco 2811 w/ PVDM2-32,AIM-CUE,15 CME/CUE/Ph lic,Adv IP,128F/256D
C2821-25UC/K9	Cisco 2821 w/ PVDM2-32,AIM-CUE,25 CME/CUE/Ph lic,SP Serv,128F/256D
C2821-25UC-VSEC/K9	Cisco 2821 w/ PVDM2-32,AIM-CUE,25 CME/CUE/Ph lic,Adv IP,128F/256D
C2851-35UC/K9	Cisco 2851 w/ PVDM2-48,NME-CUE,35 CME/CUE/Ph lic,SP Serv,128F/256D
C2851-35UC-VSEC/K9	Cisco 2851 w/ PVDM2-48,NME-CUE,35 CME/CUE/Ph lic,Adv IP,128F/256D
Cisco 2800 Series Secure Voice Bundles	
C2801-VSEC-CCME/K9	Cisco 2801 VSEC Bundle w/PVDM2-8,FL-CCME-24,Adv IP Serv,64F/256D
C2801-VSEC-SRST/K9	Cisco 2801 VSEC Bundle w/PVDM2-8,FL-SRST-24,Adv IP Serv,64F/256D
C2811-VSEC-CCME/K9	Cisco 2811 VSEC Bundle w/PVDM2-16,FL-CCME-36,Adv IP Serv,64F/256D
C2811-VSEC-SRST/K9	Cisco 2811 VSEC Bundle w/PVDM2-16,FL-SRST-36,Adv IP Serv,64F/256D

C2821-VSEC-CCME/K9	Cisco 2821 VSEC Bundle w/PVDM2-32,FL-CCME-48,Adv IP Serv,64F/256D
C2821-VSEC-SRST/K9	Cisco 2821 VSEC Bundle w/PVDM2-32,FL-SRST-48,Adv IP Serv,64F/256D
C2851-VSEC-CCME/K9	Cisco 2851 VSEC Bundle w/PVDM2-48,FL-CCME-96,Adv IP Serv,64F/256D
C2851-VSEC-SRST/K9	Cisco 2851 VSEC Bundle w/PVDM2-48,FL-SRST-96,Adv IP Serv,64F/256D
C2801-VSEC/K9	Cisco 2801 Voice Security Bundle,PVDM2-8,Adv IP Serv,64F/256D
C2811-VSEC/K9	Cisco 2811 Voice Security Bundle,PVDM2-16,Adv IP Serv,64F/256D
C2821-VSEC/K9	Cisco 2821 Voice Security Bundle,PVDM2-32,Adv IP Serv,64F/256D
C2851-VSEC/K9	Cisco 2851 Voice Security Bundle,PVDM2-48,Adv IP Serv,64F/256D
C2801-H-VSEC/K9	Cisco 2801 HighPerf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,128F/384D
C2811-H-VSEC/K9	Cisco 2811 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
C2821-H-VSEC/K9	Cisco 2821 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
C2851-H-VSEC/K9	Cisco 2851 High Perf.VSEC; AIM-VPN2/SSL,PVDM2,CCME/SRST,AIS,256F/512D
Cisco 2800 WAN Optimization Bundles	
C2811-WAE-302/K9	Cisco 2811, NME-WAE-302-K9,WAAS Trans,ASK9 ASK9,64F/256D
CISCO2811-WAE/K9	Cisco 2811, NME-WAE-502-K9,WAAS Trans,ASK9 ASK9,64F/256D
CISCO2821-WAE/K9	Cisco 2821, NME-WAE-502-K9,WAAS Trans,ASK9 ASK9,128F/256D
CISCO2851-WAE/K9	Cisco 2851, NME-WAE-502-K9,WAAS Trans,ASK9,128F/256D
Cisco 2800 Series Broadband Bundles	
CISCO2801-ADSL2/K9	Cisco 2801 bundle, HWIC-1ADSL, SP Svcs, 64F/192DR
CISCO2811-ADSL2/K9	Cisco 2811 bundle, HWIC-1ADSL, SP Svcs, 64FL/256DR
CISCO2801-ADSL/K9	Cisco 2801 DSL Bundle,WIC-1ADSL(ADSLoPOTS),SP Serv,64F/192D
CISCO2811-ADSL/K9	Cisco 2811 with WIC-1ADSL (ADSLoPOTs), SP Ser IOS, 64F/256D
C2801-SHDSL-V3/K9	Cisco 2801 bundle, WIC-1SHDSL-V3,SP Svcs, 64F/192D
C2811-SHDSL-V3/K9	Cisco 2811 DSL bundle, WIC-1SHDSL-V3 (4-wire), SP Svcs, 64F/256D
C2801-2SHDSL/K9	Cisco 2801 2-pair G.SHDSL bundle, HWIC-2SHDSL,SP Svcs, 64F/192D
C2801-4SHDSL/K9	Cisco 2801 4-pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/192D
C2811-2SHDSL/K9	Cisco 2811 2-pair G.SHDSL bundle, HWIC-2SHDSL, SP Svcs, 64FL/256DR
C2811-4SHDSL/K9	Cisco 2811 4-pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/256D
C2801-ADSL2-M/K9	Cisco 2801 bundle, HWIC-1ADSL-M, SP Svcs, 64MB CF/192MB DR
C2811-ADSL2-M/K9	Cisco 2811 bundle, HWIC-1ADSL-M, SP Svcs, 64MB CF/256MB DR
C2821-4SHDSL/K9	Cisco 2821 4pair G.SHDSL bundle, HWIC-4SHDSL, SP Svcs, 64F/256D

For More Information

http://www.cisco.com/go/2800

Cisco 1800 Series Integrated Services Routers

Cisco 1800 Series offers three classes of routers to meet the diverse needs of small enterprise branch offices and small and medium-sized businesses (SMBs).

The Cisco 1861 Integrated Services Router is a unified communications solution that provides voice, data, voicemail, Automated-Attendant, video, and security capabilities while integrating with existing desktop applications such as calendar, e-mail, and customer relationship management (CRM) programs.

Both the Cisco 1800 Fixed and Modular Routers are designed for secure data connectivity through Frame Relay, leased-line, or broadband access, and wireless LANs. The routers feature secure, fast, and high-quality delivery of multiple, concurrent services. Cisco 1841 offers flexible WAN connectivity options where Cisco 1801, 1802, and 1803 offer secure data connectivity in a small, fixed form factor.

Ideal for Companies That Need These Features

Cisco 1801, 1802, and 1803	· Secure data access through broadband DSL · Primary WAN access through asymmetric DSL (ADSL) over basic telephone service (Cisco 1801), ADSL over ISDN (Cisco 1802), or G.SHDSL (Cisco 1803) · ADSL 2/2+ capability on Cisco 1801 and 1802 routers · Backup WAN interface using ISDN BRI · Integrated 8-port managed 10/100 Ethernet switch · Integrated IEEE 802.11 a/b/g wireless LAN ("W" models)
Cisco 1841	· Secure data access solution for customer environments up to T1, E1, or xDSL WAN rates with services turned on · Modularity for flexibility in WAN configurations · Support for a broad array of WAN services · Comprehensive security features
Cisco 1861	· Integrated Cisco Unified Communications Manager Express or Cisco Unified Survivable Remote Site Telephony for call processing · Cisco Unity Express for voice messaging and automated attendant · Integrated LAN switching with PoE expandable through Cisco Catalyst switches · Support for a range of HWICs · Built-in hardware encryption enabled through optional security image · Comprehensive security features

Key Features and Benefits

- Cisco 1800 Series Integrated Services Routers are available with an IEEE 802.11 a/b/g standalone wireless access point for "W" models of Cisco 1801 through Cisco 1812 models, and for a high-speed WAN interface card access point (HWIC-AP) for the Cisco 1841.
- The modular Cisco 1841 provides flexibility with an internal advanced-integration-module (AIM) slot designated for higher-speed VPNs and future applications. Several slot types are available to add future connectivity and services on an "integrate-as-you-grow" basis.
- An optional 4-port switch HWIC is available for the Cisco 1841.
- These routers support the latest Cisco IOS Software-based QoS bandwidth management features.
- The routers offer advanced device management using Cisco Configuration Professional.
- A high-performance processor supports concurrent deployment of high-performance, secure data services with headroom for future applications.
- Integrated hardware-based encryption acceleration offers a cryptography accelerator as standard integrated hardware that can be enabled with optional Cisco IOS Software for Triple Digital Encryption Standard (3DES) and Advanced Encryption Standard (AES) encryption support.
- A security performance-enhanced feature set offers an intrusion prevention system (IPS), Cisco Network Admission Control (NAC), and firewall functions.
- These routers allow LAN segmentation using VLANs.
- An integrated standard power supply offers easier router platform installation and management.

Specifications

Feature	Cisco 1861	Cisco 1841	Cisco 1800 Series (FC)
Form factor	Desktop, 1.5 rack unit (RU)	Desktop, 1-rack-unit (1RU) height (4.75 cm high with rubber feet)	Desktop, 1-rack-unit (1-RU) high (4.75-cm high with rubber feet)
Target Applications	Small Office Unified Communications, Data and Security	Secure data with frame relay or leased line access (T1/E1)	Secure data with broadband access and backup WAN
Chassis	Metal	Metal	Metal
Wall-mountable	Yes	Yes	Yes
Rack-mountable	Yes (optional rackmount kit is required)	Yes (optional 19-in rackmount kit is required)	Yes (optional 19-in. rack-mount kit required)
Dimensions (W x D)	2.625 x 10.5 x 11.05 in. (6.67 x 26.67 x 28.07 cm)	13.5 x 10.8 in. (34.3 x 27.4 cm); Height without rubber feet: 1.73 in. (4.39 cm); Height with rubber feet: 1.87 in. (4.75 cm)	12.74 x 9.7 in. (32.36 x 24.64 cm); Height without rubber feet: 1.75 in. (4.45 cm); Height with rubber feet 1.89 in. (4.80 cm)
Weight	8 lb (3.63 kg)	Maximum: 6.2 lb. (2.8 kg); with interface cards and modules; Minimum: 6.0 lb. (2.7 kg) (no interface cards and modules)	Maximum: 6.1 lb. (2.8 kg)
DRAM	· Cisco IOS Software: 256 MB · Voice messaging: 512 MB	Synchronous dual in-line memory module (DIMM) DRAM	Synchronous dual in-line memory module (DIMM) SDRAM (1 DIMM slot)

DRAM capacity	Default: 256 MB Maximum: 256 MB	Default: 128 MB; Maximum: 384 MB	Default: 256 MB; Maximum: 384 MB
Flash memory	· Cisco IOS Software: 128 MB · Voice messaging: 1 GB; Compact Flash	External removable compact Flash	External removable Compact Flash
Integrated H/W-based encryption on motherboard	Yes	Yes	Yes
IPSec Tunnels	100 with on-board encryption	100 with on-board encryption, 800 with VPN AIM	50
IPSec VPN Performance	40 Mbps 3DES @ 1400 byte packets	40 Mbps 3DES @ 1400 byte packets	40 Mbps 3DES @ 1400 byte packets
Encryption support in software and hardware by default	IPsec DES; 3DES; and AES 128, 192, and 256 cryptology by using an optional security image	DES, 3DES, AES 128, AES 192, AES 256	DES, 3DES, AES 128, AES 192, AES 256
Cisco IOS Firewall Performance	100 Mbps @ 1400 byte packets	100 Mbps @ 1400 byte packets	100 Mbps @ 1400 byte packets
Wireless LAN Hardware	Optional 802.11b/g models	Optional IEEE 802.11 a/b/g or IEEE 802.11 b/g via HWIC	IEEE 802.11 a/b/g on wireless models
Wireless LAN features	IEEE 802.11a/b/g; Automatic rate selection for 802.11b/g; RP-TNC connectors for field-replaceable external antennas (antenna options for extended coverage); Antenna diversity; Indoor range: 1 Mbps at 320 ft. (97.54m); Wireless Ethernet Compatibility Alliance (WECA) interoperability; Default antenna gain—2.2 dBi	IEEE 802.11a/b/g; Automatic rate selection for 802.11a/11b/11g; Field-replaceable antennae; External antenna; Antenna diversity; Wi-Fi Certified for WPA-Personal and WPA-Enterprise; Default antenna gain—2.2 dBi	IEEE 802.11a/b/g; Automatic rate selection for 802.11a/11b/11g; Field-replaceable antennae; External antenna; Antenna diversity; Wi-Fi Certified for WPA-Personal and WPA-Enterprise; Default antenna gain—2.2 dBi
Data Rates Supported	The integrated 802.11b/g access point in the Cisco 1861 supports up to 54-Mbps connections.	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Range	None		Range—Indoor 1 Mbps at 320 ft.
Wireless LAN Software Features	· Cisco 1861 Series—802.1X; 802.11e; WPA and AES (WPA2); EAP authentication: Cisco LEAP, PEAP, and Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST); Static and dynamic WEP; Temporal Key Integrity Protocol Simple Security Network (TKIP/SSN) encryption; MAC authentication and filter; User database for survivable local authentication using LEAP and EAP-FAST; Configurable limit to the number of wireless clients; Configurable RADIUS accounting for wireless clients; Preshared keys (PSKs); Workgroup Bridge Association · Cisco 1841 Series—N/A · Cisco 1800 Series Fixed-Configuration Routers—Maximize throughput or maximize range option; Software-configurable transmit power; Support for Wi-Fi Multimedia (WMM); Quality of Service (QoS) for WLANs		
SSIDs	8	8	8
Wireless LAN		Supported by CiscoWorks 2000, CiscoView and Router, and Security Device Management (SDM)	Supported by CiscoWorks 2000, CiscoView and Router, and Security Device Management (SDM)
Management Features	GUI-based network management	GUI-based network management for wireless interface is provided	GUI-based network management for wireless interface is provided
User Support	Up to 15 UC users	Up to 50 users (recommended)	Up to 50 users (recommended)
Internal system power supply	Yes	Yes	Yes
Power over Ethernet (PoE) power supply	Internal	None	External
Redundant power supply	No	No	No
DC power support	No	No	No
AC input voltage	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC
Frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz

AC input current	4 to 2A (100 to 240V)	1.5A maximum	1.5A maximum
Output power	80W	50W (maximum)	50W (maximum)

Selected Part Numbers and Ordering Information

Cisco 1861	
C1861-SRST-F/K9	Cisco 1861, 8-User SRST license, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-B/K9	Cisco 1861, 8-User /SRST license, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-C-F/K9	Cisco 1861, 8-User SRST & CUE license, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-SRST-C-B/K9	Cisco 1861, 8-User SRST & CUE license, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-UC-4FXO-K9	Cisco 1861, 8-user CME, CUE, Phone Licenses, 4 PSTN trunks (FXO), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-UC-2BRI-K9	Cisco 1861, 8-user CME, CUE, Phone Licenses, 2 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports, 1 HWIC slot for WAN
C1861-2B-VSEC/K9	Cisco 1861, 8-user CME, CUE, Ph Lic, 4FXS, 2BRI, 8xPOE, HWIC slot, Adv IP
C1861-4F-VSEC/K9	Cisco 1861, 8-user CME, CUE, Ph Lic, 4FXS, 4FXO, 8xPOE, HWIC slot, Adv IP
C1861W-SRST-F/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, SRST, 8-user License, SP Svcs
C1861W-SRST-B/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, SRST 8-user License, SP Svcs
C1861W-SRST-C-F/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, SRST 8-user License, CUE, SP
C1861W-SRST-C-B/K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, SRST 8-user License, CUE, SP
C1861W-UC-4FXO-K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 4FXO, CME 8-user License, CUE, Ph.
C1861W-UC-2BRI-K9	Cisco 1861, WLAN, 8xPOE, 4FXS, 2BRI, CME 8-user License, CUE, Ph.
Cisco 1800 Series (Modular) Integrated Services Routers	
CISCO1841	Cisco 1841 Modular Router w/2xFE, 2 WAN slots, 32 FL/128 DR
CISCO1841-T1	Cisco 1841 bundle w/WIC-1DSU-T1-V2, IP Base, 32FL/128DR
Cisco 1800 Series (Fixed) Integrated Services Routers	
CISCO1801	ADSL/POTS router w/IOS IP Broadband
CISCO1801/K9	ADSL/POTS Router with Firewall/IPS and IPSEC 3DES
CISCO1801-M	ADSL over POTS Annex M Router w/IOS IP Broadband
CISCO1801-M/K9	ADSL over POTS Annex M Router
CISCO1802	ADSL/POTS router w/IOS IP Broadband
CISCO1802/K9	ADSL/ISDN Router with Firewall/IPS and IPSEC 3DES
CISCO1803/K9	G.SHDSL Router with Firewall/IPS and IPSEC
CISCO1811/K9	Dual Ethernet Security Router with V.92 Modem Backup
CISCO1812/K9	Dual Ethernet Security Router with ISDN S/T Backup
Cisco 1800 Series (Fixed Wireless) Integrated Services Router	
CISCO1801W-AG-P/K9, B/K9, C/K9, N/K9	ADSL/POTS Router with 802.11a+g (FCC-B, China-C, Australia/NZ-N) Compliant and Security
CISCO1803W-AG-P/K9, B/K9	G.SHDSL Router with 802.11a+g (FCC-B) Compliant and Security
Cisco 1800 Series (Modular) Security bundles	
CISCO1841-SEC/K9	Cisco 1841 Security Bundle,Adv.Security,64FL/256DR
CISCO1841-HSEC/K9	Cisco 1841 Security bundle w/AIM-VPN,Adv.IP Svcs,64FL/256DR
CISCO1841-T1SEC/K9	Cisco 1841 Security Bundle w/ WIC-1DSU-T1-V2, Adv.Sec.,64FL,256DR
Cisco 1800 Series (Modular) Broadband bundles	
CISCO1841-ADSL	Cisco 1841 ADSLoPOTS Bdle, IP Broadband,32FL/128DR
CISCO1841-ADSL-DG	Cisco 1841 ADSLoPOTS w/dying gasp Bundle, IP Broadband, 32FL/128DR

CISCO1841-ADSLI	Cisco 1841 ADSLoISDN Bundle, IP Broadband, 32FL/128DR
CISCO1841-SHDSL-V3	Cisco 1841 G.shdsl 4-wire Bundle, includes WIC-1SHDSL-V3,IP Broadband, 32 MB flash/128 MB DRAM
CISCO1841-ADSL2	Cisco 1841 bundle, HWIC-1ADSL, IP BB, 32F/128D
CISCO1841-ADSL2-B	Cisco 1841 bundle, HWIC-ADSL-B/ST,IP BB,32F/128D

For More Information

http://www.cisco.com/go/1800

Cisco 7600 Series Routers

The Cisco 7600 Series Routers combine optical WAN and metropolitan-area network (MAN) networking and high-volume Ethernet aggregation with a focus on the delivery of high-touch services for the IP and Multiprotocol Label Switching (MPLS) edge. These routers combine Layer 2 and Layer 3 networking capabilities with a high-bandwidth, high-performance architecture, including hardware-based forwarding of Multiprotocol Label Switching (MPLS), IPv4, and IPv6. Cisco 7600 Series form factors include the Cisco 7603-S, 7604, 7606-S, 7609-S, and 7613 models. Each router can deliver DS-0 to OC-192 WAN and n x 10-Mbps Ethernet to n x 10-Gigabit Ethernet connectivity into service provider edge, MAN, and enterprise networks for a variety of quad-play (data, voice, video, and mobile) and aggregation solutions. All Cisco 7600 Series Routers comply with Network Equipment Building Standards (NEBS) and have a 30-Mpps forwarding rate.

Ideal for Companies That Need These Features

Cisco 7603	• Three-slot (horizontal) chassis; 320-Gbps backplane bandwidth
Cisco 7604	• Four-slot (horizontal) chassis; 320-Gbps backplane bandwidth
Cisco 7606	• Six-slot (horizontal) chassis; 480-Gbps backplane bandwidth
Cisco 7609	• Nine-slot (vertical) chassis; 720-Gbps backplane bandwidth
Cisco 7613	• Thirteen-slot (horizontal) chassis; 720-Gbps backplane bandwidth

Key Features and Benefits

- Cisco 7600 Series Routers provide up to 30-Mpps central or up to 400-Mpps distributed forwarding with hardware-accelerated IPv4, IPv6, and Multiprotocol Label Switching (MPLS).
- The modular routers are scalable from 32- to 720-Gbps switch fabric.
- These routers represent one of the widest, most complete ranges of WAN interfaces in the industry, with DS-0 to OC-192 connectivity.
- Using the Cisco 7600 Series/Catalyst 6500 Series Enhanced FlexWAN Module, Cisco 7000 Series port adapters are shared with the Cisco 7200, 7300, 7400, and 7500 models, simplifying sparing and protecting customer investment in interfaces.
- Cisco 7600 Series Routers support many Cisco Catalyst 6500 LAN interfaces, offering n x 10-Mbps Ethernet to 10 Gbps.

Specifications

Feature	Cisco 7603	Cisco 7604	Cisco 7606	Cisco 7609	Cisco 7613
Fixed Ports	SFP & 10/100/1000 (Sup720)	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Expansion Slots	3 (horizontal)	4 (horizontal)	6 (horizontal)	9 (vertical)	13 (horizontal)
WAN Interface Range	DS0 to OC-192	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Processor	Supervisor720-3B Supervisor720-3BXL Supervisor 32 RSP720-3C RSP720-3CXL RSP720-10G-3C RSP720-10G-3CXL	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Forwarding Rate	Up to 30 Mpps	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Backplane Capacity	240 Gbps	320 Gbps	480 Gbps	720 Gbps	720 Gbps

Flash PCMCIA Memory	up to 512MB	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
System DRAM Memory	512MB on Sup720-3B 1G on Sup720-3BXL 1G on RSP720-3C 2G on RSP720-3CXL	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Internal Power Supply	AC or DC	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
RPS Support	Yes	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603	Same as Cisco 7603
Chassis Height	4 RU	5 RU	7 RU	20 RU	18 RU
Rack Mountable	Yes, up to 11 per rack	Yes, up to 10 per rack	Yes, up to 6 per rack	Yes, up to 2 per rack	Yes, up to 2 per rack
Dimensions (H x W x D)	7 x 17.37 x 20.3 in.	7 x 17.37 x 21.75 in.	12.25 x 17.37 x 21.75 in.	36.75 x 17.2 x 20.7 in.	33.3 x 17.2 x 18.1 in.

Selected Part Numbers and Ordering Information

Cisco 7613 Systems	
7613-RSP720C-P	Cisco 7613 Chassis,13-slot,RSP720-3C,PS
7613-RSP720CXL-P	Cisco 7613 Chassis,13-slot,RSP720-3CXL,PS
CISCO7613	Cisco 7613 Chassis
CISCO7613/EHA1	Bundle: Cisco Enhanced Home Agent R1 for 7613 (600k Sessions)
7613-S323B-8G-P	Cisco 7613 Chassis, 13-slot, SUP32-8GE-3B, PS
7613-S323B-10G-P	Cisco 7613 Chassis, 13-slot, SUP32-2X10GE-3B, PS
7613-SUP720XL-PS	Cisco 7613 13-slot, SUP720-3BXL and PS
7613-SUP7203B-PS	Cisco 7613 Chassis, 13-slot, SUP7203B, Power Supply
7613-2SUP7203B-2PS	Cisco 7613 Chassis, 13-slot, 2 SUP7203B, 2 Power Supply
Cisco 7609 Systems	
7609-RSP720C-P	Cisco 7609 Chassis,9-slot,RSP720-3C,PS
7609-RSP720CXL-P	Cisco 7609 Chassis,9-slot,RSP720-3CXL,PS
7609S-RSP720C-P	Cisco 7609-S Chassis,9-slot,RSP720-3C,PS
7609S-RSP720CXL-P	Cisco 7609-S Chassis,9-slot,RSP720-3CXL,PS
7609S-S32-10G-B-P	Cisco 7609-S Chassis,9-slot,SUP32-2X10GE-3B,PS
7609S-S32-8G-B-P	Cisco 7609-S Chassis,9-slot,SUP32-8GE-3B,PS
7609S-SUP720B-P	Cisco 7609-S Chassis,9-slot,SUP720-3B,PS
7609S-SUP720BXL-P	Cisco 7609-S Chassis,9-slot,SUP720-3BXL,PS
CISCO7609	Cisco 7609 Chassis
CISCO7609-S	Cisco 7609-S Chassis
CISCO7609/EHA1	Bundle: Cisco Enhanced Home Agent R1 for 7609 (300k Sessions)
7609-S323B-8G-P	Cisco 7609 Chassis, 9-slot, SUP32-8GE-3B, PS
7609-S323B-10G-P	Cisco 7609 Chassis, 9-slot, SUP32-2X10GE-3BB, PS
7609-SUP720XL-PS	Cisco 7609 9-slot, SUP720-3BXL and PS
7609-SUP7203B-PS	Cisco 7609 Chassis, 9-slot, SUP7203B, Power Supply
7609-2SUP7203B-2PS	Cisco 7609 Chassis, 9-slot, 2 SUP7203B, 2 Power Supply
Cisco 7606 Systems	
7606-RSP720C-P	Cisco 7606 Chassis,6-slot,RSP720-3C,PS
7606-RSP720CXL-P	Cisco 7606 Chassis,6-slot,RSP720-3CXL,PS
CISCO7606	Cisco 7606 Chassis

CISCO7606-S	Cisco 7606-S Chassis
7606-S323B-8G-P	Cisco 7606 Chassis, 6-slot, SUP32-8GE-3B, PS
7606-S323B-10G-P	Cisco 7606 Chassis, 6-slot, SUP32-2X10GE-3B, PS
7606-SUP720XL-PS	Cisco 7606 6-slot, SUP720-3BXL and PS
7606-SUP7203B-PS	Cisco 7606 Chassis, 6-slot, SUP7203B, Power Supply
7606-2SUP7203B-2PS	Cisco 7606 Chassis, 6-slot, 2 SUP7203B, 2 Power Supply
CISCO7606-CHASS	Cisco 7606 Chassis
7606S-RSP720C-P	Cisco 7606-S Chassis,6-slot,RSP720-3C,PS
7606S-RSP720CXL-P	Cisco 7606-S Chassis,6-slot,RSP720-3CXL,PS
7606S-S32-8G-B-P	Cisco 7606-S Chassis,6-slot,SUP32-8GE-3B,PS
7606S-S32-10G-B-P	Cisco 7606-S Chassis,6-slot,SUP32-2X10GE-3B,PS
7606S-SUP720B-P	Cisco 7606-S Chassis,6-slot,SUP720-3B,PS
7606S-SUP720BXL-P	Cisco 7606-S Chassis,6-slot,SUP720-3BXL,PS
Cisco 7604 Systems	
CISCO7604	Cisco 7604 Chassis
7604-RSP720C-P	Cisco 7604 Chassis,4-slot,RSP720-3C,PS
7604-RSP720CXL-P	Cisco 7604 Chassis,4-slot,RSP720-3CXL,PS
7604-S323B-8G-P	Cisco 7604 Chassis, 4-slot, SUP32-8GE-3B, PS
7604-S323B-10G-P	Cisco 7604 Chassis, 4-slot, SUP32-2X10GE-3B, PS
7604-SUP7203B-PS	Cisco 7604 Chassis, 4-slot, SUP720-3B, PS
7604-2SUP7203B-2PS	Cisco 7604 Chassis, 4-slot, 2 SUP720-3B, 2 PS
7604-SUP720XL-PS	Cisco 7604 chassis, 4-slot, SUP720-3BXL, PS
7604-2SUP720XL-2PS	Cisco 7604 Chassis, 4-slot, 2SUP720-3BXL, 2 PS
Cisco 7603 Systems	
7603S-RSP720C-P	Cisco 7603-S Chassis,3-slot,RSP720-3C,PS
7603S-RSP720CXL-P	Cisco 7603-S Chassis,3-slot,RSP720-3CXL,PS
7603S-S32-10G-B-P	Cisco 7603-S Chassis,3-slot,SUP32-2X10GE-3B,PS
7603S-S32-8G-B-P	Cisco 7603-S Chassis,3-slot,SUP32-8GE-3B,PS
7603S-SUP720B-P	Cisco 7603-S Chassis,3-slot,SUP720-3B,PS
7603S-SUP720BXL-P	Cisco 7603-S Chassis,3-slot,SUP720-3BXL,PS
CISCO7603-S	Cisco 7603-S Chassis

For More Information
http://www.cisco.com/go/7600

Cisco 7300 Series Routers

The Cisco 7301 is targeted at principal application areas within a service provider network in a compact, single-rack form factor coupled with a broad set of interfaces and Cisco IOS Software features. It packs high performance of up to 1 Mpps in a space- and power-efficient form factor that includes a single Cisco 7000 Series port adapter slot and 3 onboard Gigabit Ethernet (copper or optical) or Fast Ethernet ports.

Ideal for Companies That Need These Features

Cisco 7301
· Compact, power-efficient 1RU form factor
· Single Cisco 7000 Series port adapter slot

Key Features and Benefits

· This router offers up to 1 Mpps processing performance; Pluggable Gigabit Ethernet optics (Small Form-Factor Pluggables [SFPs]); 3 fixed 10-/100-/1000-Mbps ports (RJ-45 or SFP optics) directly on the

processor; Full Cisco IOS Software feature support; Up to 1 GB of available DRAM; up to 256 MB of removable Compact Flash memory; Front-to-back airflow and single-sided management

Specifications

Feature	Cisco 7301
Fixed Ports	Three Gigabit Ethernet ports
Expansion Slots	1
WAN Interface Range	DS-1 to OC-3
Forwarding Rate	Up to 1 Mpps
Backplane Capacity	1.2 Gbps
Flash PCMCIA Memory	64 MB (expandable to 256 MB)
System DRAM Memory	512 MB (expandable to 1 GB)
Min Cisco IOS Release	12.2(11)YZ
Internal Power Supply	AC or DC
RPS Support	Yes, for AC or DC
Chassis Height	1 RU
Rack Mountable	Yes, up to 40 per rack
Dimensions (H x W x D)	1.73 x 17.3 x 13.87 in. (4.39 x 43.94 x 35.23 cm.)

Selected Part Numbers and Ordering Information

Cisco 7301 System	
CISCO7301=	Cisco 7301 chassis, 512 MB memory, A/C power,64MB Flash
CISCO7301-BB	Cisco7301,512MB Mem,16K license,64MB Flash, A/C power, IP/IOS
CISCO7301-BB-8K	Cisco 7301, 512M SDRAM, 8K Sub Broadband Feature License
CISCO7301BB-1G	Cisco 7301, 1 G Mem,64MB Fl, AC Pwr, IP IOS, up to 16k sub BBA lic
CISCO7301BB-8K-1G	Cisco 7301,1 G Mem, 64MB Fl, AC Pwr, IP IOS, up to 8k sub BBA lic
CISCO7301/ITP/BUN	Cisco ITP Signaling Gateway Bundle
CISCO7301/2+VPNK9	Cisco 7301, VAM2+, AC pwr, 512 sys mem, SDM

For More Information

http://www.cisco.com/go/7300

Cisco 7200 Series Routers

The Cisco 7200 Series Routers (Cisco 7201, Cisco 7204VXR, and Cisco 7206VXR) deliver an exceptional price-to-performance ratio, versatility, and feature richness in a compact form factor. The Cisco 7200 is an optimized integrated services aggregation OC-3/Gigabit Ethernet edge router that is ideal as a WAN aggregator for the service provider (small point of presence [POP]) or enterprise edge, as an enterprise WAN gateway, as high-end managed customer premises equipment (CPE), for IBM data center connectivity, or as a small core router. With the hardware-supported IP Security (IPSec) encryption module as well as robust firewall and Virtual Route Forwarding (VRF)-aware IPSec with Network Address Translation (NAT) support, the Cisco 7200 Series is ideal for integrated security services. The Cisco 7200 also supports gatekeeper and IP-to-IP gateway functions. Modularity combined with a low initial price point helps guarantee both investment protection and maximum return on investment, allowing customers to upgrade or redeploy their Cisco 7200 Series Router as their network needs change.

Ideal for Companies That Need These Features

Cisco 7201
- 1-slot chassis
- Built-in NPE-G2 Network Processing Engine with up to 2 Mpps
- WAN services aggregation (for example, Multiprotocol Label Switching [MPLS] provider edge traffic segmentation)
- Integrated edge services (for example, integrated security)
- Multiservice Interchange (MIX)-enabled bus for data, voice, and video applications

Cisco 7204VXR	· 4-slot chassis
	· Modular processor, 1 Mpps, or 2 Mpps (Cisco NPE-G1, and Cisco NPE-G2 Network Processing Engines)
	· 1.8-Gbps backplane
	· WAN services aggregation (for example, MPLS provider edge traffic segmentation)
	· Integrated edge services (for example, integrated security)
	· MIX-enabled bus for data, voice, and video applications
Cisco 7206VXR	· All the features of the Cisco 7204VXR Router in a 6-slot chassis

Key Features and Benefits

- Compact form factor—The router offers up to six port adapters in a fully modular 3RU form factor; seven port adapters with a port adapter jacket card; choice of a 1-slot, and a 1RU chassis with built-in Cisco NPE-G2.
- Modularity—The router has choices of 1-, 4-, and 6-slot chassis, a selection of processors providing up to 2 Mpps, an extensive range of LAN and WAN interfaces with up to 48 ports per chassis, and single or dual power supplies. Chassis are expandable to an additional slot by using an I/O slot as a port or service adapter slot by using the port adapter jacket card.
- Exceptional value—The router offers superior price-to-performance ratio supporting high-speed media and high-density configurations with up to 2 million packets per second processing at a competitive price point.
- Feature richness—The router supports Cisco IOS Software and enhancements for high-performance network services. It offers industry-leading network services, including MPLS; route reflectors; broadband aggregation; the Cisco IOS Intelligent Services Gateway; QoS; service management; IBM data center; storage-area-network application; security; voice, video, and data support; and gatekeeper and IP-to-IP gateway (session border controller) support.
- Connectivity and flexibility—The router provides high port density and an extensive range of LAN and WAN media.
- Common port adapters—Port adapters are shared with the Cisco 7300 and 7600 Series (with the Cisco FlexWAN Module), simplifying sparing and protecting customer investment in interfaces.
- IP-to-IP gateway—Highest capacity of call support in Cisco router portfolio

Specifications

Feature	Cisco 7201	Cisco 7204VXR	Cisco 7206VXR
Fixed Ports	4 GEs	0	0
Expansion Slots	1	4 (5 with port adapter jacket card[1] utilizing the I/O slot)	6 (7 with port adapter jacket card utilizing the I/O slot)
WAN Port Adapters	DS0 to OC-3	DS0 to OC-3	Same as 7204VXR
Forwarding Rate	Up to 2 Mpps	Up to 2 Mpps	Up to 2 Mpps
Backplane Capacity	N/A	1.8 Gbps (with NPE-G2)	Same as 7204VXR
Flash (Compact) Memory	256 MB (default and max.)	For NPE-G2: 256 MB (default and max.) For NPE-G1: 64 MB (expandable to 256 MB)	Same as 7204VXR
System DRAM Memory	1 GB (default); 2 GB (max.)	NPE-G2: 1 GB (default); 2 GB (max.) NPE-G1: 512 MB (default); 1 GB (max.)	Same as 7204VXR
Minimum Cisco IOS Release	· Cisco 7201: 12.4(4)XD7; 12.2(31)SB4; 12.4(15)T · Cisco 7204VXR: NPE-G2: 12.4(4)XD; 12.4(15)T; 12.2(31)SB4 (and later),: NPE-G1: 12.2(4)BW, 12.2(15)B, 12.2(14)S, 12.2(14)SU, 12.2(15)T, 12.1(14)E, 12.3(1), 12.3(2)T, 12.0(28)S, 12.3(1a)B (and later); Cisco 7206VXR: Same as 7204VXR		
Internal Power Supply	Dual AC or Dual DC – By default	AC or DC, dual option	Same as 7204VXR
Redundant Power Supply	Yes, Dual AC or DC by default	Yes, for AC or DC	Same as 7204VXR
Chassis Height	1 RU	4 RU	6 RU
Rack Mountable	Yes	Yes, up to 16 per rack	Same as 7204VXR
Dimensions (H x W x D)	1.75 x 19 x 16.9 in.	5.25 x 16.8 x 17 in.	10.5 x 16.8 x 17 in.

1. Jacket Card part number: C7200-JC-PA

Selected Part Numbers and Ordering Information

Cisco 7200 Series Chassis	
CISCO7201	Cisco 7201 router, with built-in dual power supplies, NPE-G2, and IP Software
Cisco 7200 NPE Bundles	
7206VXR/NPE-G2	Cisco 7206VXR with NPE-G2 includes 3GigE/FE/E Ports and IP SW

7206VXR/NPE-G1	Cisco 7206VXR with NPE-G1 includes 3GigE/FE/E Ports and IP SW
Cisco 7200 MPLS/IPv6 Bundles	
7206-IPV6/ADSVC/K9	Cisco 7206VXR IPv6/Adv. Ent. Services with NPE-G2
Cisco 7200 Security Bundles	
7206VXRG2/VSAVPNK9	Cisco 7206VXR chassis, NPE-G2, C7200-VSA Security Module, 256 MB Flash, 1GB DRAM, IOS ADVANCED SECURITY, SDM
7206VXRG2/2+VPNK9	Cisco 7206VXR NPE-G2 Bundle with Advanced Security IOS, 3 FE/GE, 64 MB Flash/1 GB DRAM, VAM2+
7206VXRG1/2+VPNK9	Cisco 7206VXR, NPE-G1, SA-VAM2+, AC pwr, 512 sys mem, SDM
Cisco 7200 Broadband Bundles	
CISCO7206-BB	Cisco 7206 Broadband Bundle NPE-G1 includes 3GigE/FE/E Ports
Cisco 7200 Channel Bundles	
CISCO7204VXR-CH	Cisco 7204VXR, 4-slot chassis, 1 AC Supply w/ IP Software
CISCO7206VXR-CH	Cisco 7206VXR, 6-slot chassis, 1 AC Supply w/IP Software
Cisco 7200 MPLS/IPv6 Bundles	
7206-IPV6/ADSVC/K9	Cisco 7206VXR IPv6/Adv. Ent. Services with NPE-G2

For More Information

http://www.cisco.com/go/7200

Cisco Carrier Routing System (CRS)

The Cisco Carrier Routing System (CRS) provides industry-leading performance, advanced services intelligence, environmentally aware design, and system longevity. Each model uses Cisco IOS XR Software, a unique self-healing, distributed operating system.

Models include:

- Cisco CRS-3, powered by Cisco QuantumFlow Array, a chipset architecture engineered in multiple dimensions of scale, services, and savings
- Cisco CRS-1, built on the Cisco Silicon Packet Processor (SPP)

Packet-based data communications are being replaced by video and rich media crossing the IP Next-Generation Network (NGN) in multiple directions. As part of a medianet, a media-aware Cisco IP NGN, Cisco CRS eases this strain on networks. It efficiently handles the multidirectional traffic of network and data center cloud interactions.

The Cisco CRS:

- Delivers continuous operations, with high performance single-flow line-rate forwarding
- Scales easily from numerous single-chassis form factors to a massive multichassis system, up to 322 Tbps
- Provides industry-leading efficiency, requiring low power, cooling, and rack-space use for intelligent, service-rich bandwidth capacity

Cisco CRS-3 models build on the CRS-1 models' backward and forward compatibility, protecting your existing and future investments for decades to come.

The Cisco CRS includes two major elements, line card shelves and fabric shelves, combinations of which allow the system to scale from four 40-Gbps or 140-Gbps slots to as many as 1152 40-Gbps or 140-Gbps slots in 72 line card shelves interconnected using eight fabric shelves, all operating as a single system.

- Cisco CRS 16-Slot Single-Shelf System—A single, 16-slot line card shelf with total switching capacity of 1.2 Tbps (40-Gbps/slot) or 4.48 Tbps (140-Gbps/slot); built from a 16-slot line card chassis featuring a midplane design
- Cisco CRS 8-Slot Single-Shelf System—A single, 8-slot line card shelf with total switching capacity of 640 Gbps (40-Gbps/slot) or 2.24 Tbps (140-Gbps/slot); built from an 8-slot line card chassis featuring a midplane design
- Cisco CRS 4-Slot Single-Shelf System—A single, 4-slot line-card shelf with total switching capacity of 320 Gbps (40-Gbps/slot) or 1.12 Tbps (140-Gbps/slot); built from a 4-slot line card chassis featuring a midplane design
- Cisco CRS-1 Multishelf System—Two to 72 line card shelves and 1 to 8 fabric shelves with a total switching capacity of up to 92 Tbps (40-Gbps/slot) or 322 Tbps (140-Gbps/slot); shelves are connected only to the fabric-card shelves where stage 2 of the three-stage switching is performed

Key Features and Benefits

- Delivery of differentiated voice, video, and data with mobility and business services with better quality of service (QoS) and performance
- Multicast traffic replicated in the fabric for efficient broadcast video applications
- Optical Transport (ITU G.709) integration with IP-over-DWDM (IPoDWDM) technology
- Intelligence for Data-Center Cloud interaction with Network Positioning System (NPS) technology

- Rich IPv6 support including dual-stack, translation/tunneling techniques with Carrier-Grade IPv6 (CGv6)
- Wire-rate line card integrated application performance monitoring, including for video
- Hardware-accelerated Operations, Administration and Performance (OAM)
- Consolidation of multiple networks into a single platform using secure domain routers (SDRs) while maintaining hardware and software isolation
- Dedicated 8-KB ingress and egress queues on the line cards for superior performance
- Isolation of different classes of services to deliver high-quality voice, video, and premium traffic
- Granular process-level In Service Software Upgrades (ISSUs)
- Non-service affecting online insertion and removal (OIR) of all components to reduce downtime
- Cisco Nonstop Forwarding (NSF) and Stateful Switchover (SSO) to eliminate single points of failure without service interruption, forwarding continues before, during, and after a route-processor switchover
- In-service, non-disruptive scaling from a single chassis to multiple chassis
- Shared port adapters (SPAs) and SPA interface processors (SIPs) to preserve hardware investment across Cisco platforms, including the Cisco 12000, 7600, and 7300 Series Routers
- Interchangeable interfaces between Cisco CRS and a range of other Cisco platforms

Specifications

Feature	16 slot Single-Shelf System	8 slot Single-Shelf System	4 slot Single-Shelf System	Fabric Card Chassis
Design Slots	Midplane design	Midplane design	Midplane design	Midplane design
	Line card: 16 x 40-Gbps/140-Gbps slots Switch Fabric Card: 8 dedicated slots Route Processor: 2 dedicated slots Fan Controller: 2 dedicated slots	Line card: Eight 40-Gbps/ 140-Gbps slots Switch-fabric card: 4 dedicated slots Route processor: 2 dedicated slots Fan tray: 2 fan trays	Line card: 40-Gbps/ 140-Gbps slots Switch fabric card: 4 dedicated slots Route processor: 2 dedicated slots Fans: 4 fans, 1 fan tray	Switch Fabric Card: 24 slots Shelf Controller: 2 dedicated slots
Full-Duplex Throughput	1280 Gbps (40-Gbps/slot) 4480 Gbps (140-Gbps/slot)	640 Gbps(40-Gbps/slot) 2240 Gbps (140-Gbps/slot)	320 Gbps (40-Gbps/slot) 1120 Gbps (140-Gbps/slot)	
Power	Maximum DC power needed when chassis is fully configured with line cards with traffic running: 10.92kW Chassis power supply maximum DC output: 13.2kW	Maximum DC power needed when chassis is fully configured with line cards with traffic running: 5992W Chassis power supply maximum DC output: 7.7kW	AC input = 4270VA @ 16000 BTU/HR DC input = 4326W @16200 BTU/HR	Maximum DC = 9.1kW @ 31,050 BTU/hr Maximum AC = 10.4kW @ 32,668 BTU/hr
Dimensions (H x W x D)	84 x 23.6 x 36 in (213.36 x 59.94 x 91.44 cm); With cable management and front cover—84 x 23.6 x 39.71 in (213.36 x 59.94 x 100.84 cm)	38.5 x 17.5 x 36.6 in (97.79 x 44.45 x 92.964 cm) with base cosmetics; With cable management and front cover—38.5 x 17.5 x 40.5 in (97.79 x 44.45 x 102.87 cm)	30 x 17.643 x 30.28 in (76.2 x 44.813 x 76.91 cm) without doors and cosmetics	Without cable management and front cover—84 x 23.6 x 35 in (213.36 x 59.94 x 88.9 cm); With cable management and front cover—84 x 23.6 x 41 in (213.36 x 59.94 x 104.2 cm)
Weight	939 lbs (425 kg) as shipped, chassis only with build in rack and fan trays installed 1008 lbs (457 kg) chassis only as shipped, including power shelves, without power modules, and with build in rack 1595 lbs (723 kg) chassis fully configured, using all card slots, power shelves, cosmetics, and with build in rack	330.8 lb (148.86 kg) chassis with fan, PDU and blanks (as shipped) 650lb (292.5 kg) chassis as shipped, including power shelves, and all line cards and route processors	260 lb (117.93 kg) chassis with fan, power modules and blanks (as shipped) 380 lb (172.37 kg) chassis as shipped, including power shelf, fabric cards, and all line cards and route processors	644 lbs (292 kg) as shipped, chassis only with fan trays installed 712.8 lbs (323 kg) chassis only as shipped, including power shelves, without power modules 1559 lbs (707 kg) chassis fully configured
IP Features	Control-plane packet handling, IPv4, IPv6, (X)ACLs, QoS/class of service (CoS) using Modular QoS CLI (MQC), IP packet classification and marking, Queuing (both ingress and egress), Policing (both ingress and egress), Diagnostic and network management support			

Software Components	Cisco IOS XR
IP over DWDM (IPoDWDM) Features	· GFEC: standard G.975 Reed-Salomon algorithm · EFEC: standard G.975.1 two orthogonally concatenated BCH super FEC code · Full C-band tunable laser with 50-GHz spacing · Router-to-router SONET/SDH-like operations, administration, maintenance, and provisioning (OAM&P)
Routing Features	Multiprotocol BGP Version 4 (MP-BGPv4), Open Shortest Path First Version 2 (OSPFv2), OSPFv3, IS-IS, Static routes, RPL, Multicast, MPLS, High availability, Security, Manageability

Selected Part Numbers and Ordering Information

CRS-16/S	Cisco CRS-1 Series 16 Slots Carrier Routing System/Single
CRS-8/S	Cisco CRS-1 Series 8 Slots Carrier Routing System/Single
CRS-4/S	Cisco CRS-1 Series 4 Slots Carrier Routing System
CRS-MC-FC2	Cisco CRS-1 Multichassis System with 24-Slot Fabric Chassis
CRS-FC24=	Cisco CRS-1 Fabric Chassis 24-Slot System (complete FCC)
CRS-FCC=	Cisco CRS-1 FCC, spare (Chassis Only)
CRS3-16/S	Cisco CRS-3 16-Slot Carrier Routing System/Single
CRS3-8/S	Cisco CRS-3 8-Slot Single-Shelf System
CRS3-4/S	Cisco CRS-3 4-Slot Single-Shelf System
CRS3-MC-FC24	Cisco CRS-3 Multichassis System with 24-Slot Fabric Chassis
CRS3-FC24=	Cisco CRS-3 Fabric Chassis 24-Slot System (complete FCC)
CRS3-FCC=	Cisco CRS-3 FCC, spare (chassis only)

NOTE: Ordering information for the CRS-3 will be available in the September, 2010 timeframe.

For More Information

http://www.cisco.com/go/crs

Cisco XR 12000 and 12000 Series Routers

The Cisco XR 12000 and 12000 Series Routers compose a portfolio of intelligent routing solutions that scale from 2.5 to n x 10Gpbs capacity per slot, facilitating carrier-class IP/Multiprotocol Label Switching (MPLS) networks and accelerating the evolution to IP next-generation networks.

Key Features and Benefits

· The Cisco XR 12000 and 12000 Series Routers deliver up to 1.28-Tbps switching capacity with wire-speed feature performance, scalability, and graceful hardware and software upgrade paths.

· These routers offer full forward compatibility for all line cards and the portfolio of shared port adapters (SPAs) and SPA interface processors (SIPs).

· The routers scale to the edge, supporting backbone- or edge-optimized line cards in the same chassis.

· The routers maximize the value of line-rate edge applications with 10-G uplinks.

· IP quality of service (QoS) and congestion-control implementation facilitates real-time services such as voice over IP (VoIP) and video. The distributed architecture and class-of-service features of the routers, such as priority-based congestion control (Weighted Random Early Detection [WRED]) and dedicated Low Latency Queuing (Modified Deficit Round Robin [MDRR]), along with virtual output queuing (Virtual Output Queuing [VOQ]), eliminate head-of-line blocking (HOL) and maintain packet sequence integrity under all conditions.

· Non-service-affecting online insertion and removal (OIR) of components (including switch fabric cards) and front accessibility reduce downtime and simplify maintenance.

· Cisco Nonstop Forwarding (NSF) and Cisco Stateful Switchover (SSO) eliminate single points of failure, help maintain system performance, and prevent service interruption; packet forwarding remains uninterrupted before, during, and after a route-processor switchover.

· Performance Route Processor-3 (PRP-3)—PRP-3 is the premium route processor for the Cisco XR 12000 Series Router. This latest generation of Performance Route Processors (PRPs) vastly expands the processing power for control plane and management plane applications, providing up to 300% improvement over PRP-2 performance for such applications. The premium PRP-3 route processor greatly extends the lifetime of the Cisco XR 12000 Series platform.

Specifications

Feature	Cisco XR 12000/ 12000 16-slot Chassis	Cisco XR 12000/ 12000 Series 10-Slot Chassis	Cisco XR 12000/ 12000 Series 6-Slot Chassis	Cisco XR 12000/ 12000 Series 4-Slot Chassis
Slot Capacity	16 slots	10 slots	6 slots	4 slots
Aggregate Switching Capacity	12016: 80 Gbps; 12416: 320 Gbps; 12816: 1280 Gbps	12010: 50 Gbps; 12410: 200 Gbps; 12810: 800 Gbps	12006: 30 Gbps; 12406: 120 Gbps	12404: 80 Gbps
Full-Duplex Throughput Per	12016: 2.5 Gbps/slot 12416: 10 Gbps/slot 12816: 40 Gbps/slot	12010: 2.5 Gbps/slot 12410: 10 Gbps/slot 12810: 40 Gbps/slot	12006: 2.5 Gbps/slot 12406: 10 Gbps/slot	12404: 10 Gbps/slot
Dimensions (H x W x D)	71.5 x 17.25 x 22.0 in (181.6 x 184.2[1] x 55.9 cm); 72.5 x 18.75 x 24.0 in. [2]; (43.8 x 47.6 x 61.0 cm)[3]	37.5 x 19 x 22.0 in. (95.25 x 48.26 x 55.9 cm); 24.0 in. (61.0 cm)	18.5 in. (47.0 cm) chassis width; 17.3 in. (43.9 cm); 18.9 in. (48.0 cm); chassis depth 28.0 in. (71.1 cm)	8.75 in. (22.23 cm) chassis width 17.38 in. (44.15 cm) 18.9 in. (48.01 cm) chassis depth 27.5 in. (69.85 cm)
Weight	140 lb. (64 kg)[4]; 390 lb. (177 kg)[5]	125 lb. (57 kg)[4]; 275 lb. (125 kg)[5]	18.5 in. (47.0 cm); chassis width: 17.3 in. (43.9 cm) 18.9 in. (48.0 cm) chassis depth: 28.0 in. (71.1 cm)	8.75 in. (22.23 cm); chassis width: 17.38 in. (44.15 cm) 18.9 in. (48.01 cm) chassis depth: 27.5 in. (69.85 cm)
Chassis Per Rack	One	Two	Four	Eight
Software Components (Per Base System)	Cisco IOS XR or Cisco IOS Software Operating System; Cisco Express Forwarding for distributed packet forwarding			
Compatibility	12800—Line cards that support 2.5-, 5-, 10-, or 20-Gbps capability; 12400—Line cards that support 2.5-, 5- or 10-Gbps capability; 12000—Line cards that support 2.5-Gbps capability			
Protocols	IPv4/v6, MPLS, BGPv4/v6, IS-IS, OSPFv2.0, RIPv2, IGMP, DVMRP, and PIM DX/SX			
Connectivity	Packet over SONET/SDH (POS), Ethernet, ATM, copper (DS-3/E3), Channelized (CT3, ChOC-3/ CHSTM1, ChOC-12/CHSTM4, ChOC-48/CHSTM16); see Cisco IOS XR Software release notes for specific connectivity support on the Cisco XR 12000 Series			

1. With AC input power shelf or DC input power shelf, front covers installed
2. Including chassis rack-mount flanges
3. Including cable-management system and front cover
4. Chassis only, including power shelf for 16-slot chassis
5. Chassis fully configured, using all card slots, AC or DC power shelf for 16-slot chassis, & AC or DC input power supplies

Selected Part Numbers and Ordering Information

Cisco XR 12000 16-Slot Systems	
XR-12416/320-AC	Cisco XR 12000 16-slot chassis w/ 3 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
XR-12416/320-AC4	Cisco XR 12000 16-slot chassis w/ 4 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
XR-12416/320-DC	Cisco XR 12000 16-slot chassis w/ 4 DC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2
Cisco 12000 16-Slot Systems	
GSR16/80-AC-8R	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-AC	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-AC3	Cisco 12000 16-slot chassis w/ 3 AC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, and 1 PRP-1
GSR16/80-AC4-8R	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-AC4	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-AC4	Cisco 12000 16-slot chassis w/ 4 AC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, & 1 PRP-1

GSR16/80-DC-8R	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 80-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
GSR16/320-DC	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 320-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2
12816/1280-DC	Cisco 12000 16-slot chassis w/ 4 DC power supplies, 1280-Gbps fabric (2 CSC & 3 SFC cards), 2 blowers, 2 alarms, & 1 PRP-1
Cisco XR 12000 10-Slot Systems	
XR-12410/200-AC	Cisco XR 12000 10-slot chassis w/ 2 AC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1
XR-12410/200-DC	Cisco XR 12000 10-slot chassis w/ 2 DC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1
Cisco 12000 10-Slot Systems	
12010-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 50-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12010-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 50-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
GSR10/200-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
GSR10/200-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 200-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12810/800-AC	Cisco 12000 10-slot chassis w/ 2 AC power supplies, 800-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
12810/800-DC	Cisco 12000 10-slot chassis w/ 2 DC power supplies, 800-Gbps fabric (2 CSC & 5 SFC cards), 1 blower, 2
Cisco XR 12000 6-Slot Systems	
XR-12406/120-AC	Cisco XR 12000 6-slot chassis w/ 1 AC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
XR-12406/120-DC	Cisco XR 12000 6-slot chassis w/ 1 DC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
Cisco 12000 6-Slot Systems	
12006-AC	Cisco 12000 6-slot chassis w/ 2 AC power supplies, 30-Gbps fabric (2 CSC & 3 SFC cards), 1 blower, 2
12006-DC	Cisco 12000 6-slot chassis w/ 2 DC power supplies, 30-Gbps fabric (2 CSC & 3 SFC cards), 1 blower, 2
GSR6/120-AC	Cisco 12000 6-slot chassis w/ 1 AC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
GSR6/120-DC	Cisco 12000 6-slot chassis w/ 1 DC power supply, 120-Gbps fabric (1 CSC & 3 SFC cards), 1 blower, 2
Cisco XR 12000 4-Slot Systems	
XR-12404/80-AC	Cisco XR 12000 4-slot chassis w/ 2 AC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-2
XR-12404/80-DC	Cisco XR 12000 4-slot chassis w/ 2 DC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-2
Cisco 12000 4-Slot Systems	
GSR4/80-AC	Cisco 12000 4-slot chassis w/ 2 AC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-1
GSR4/80-DC	Cisco 12000 4-slot chassis w/ 2 DC power supply, 80-Gbps fabric (consolidated switch fabric, clock scheduler, & alarm card), 1 blower, & 1 PRP-1

For More Information

http://www.cisco.com/go/12000

Cisco ASR 9000 Series Aggregation Services Routers

The Cisco ASR 9000 Series represents an exciting new paradigm in the world of Carrier Ethernet transport with exceptional scalability, carrier-class reliability, environmentally conscious design, incredible flexibility, and an enticing new price-to-performance benchmark.

The Cisco ASR 9000 Series is available in two form factors: the Cisco ASR 9010 Router and the Cisco ASR 9006 Router. Cisco ASR 9000 Series Routers are designed to provide true carrier-class reliability using the Cisco IOS XR operating system, comprehensive system redundancy, and a full complement of network resiliency schemes.

The Cisco ASR 9000 Series also offers service and application-level intelligence focused on optimized video delivery and mobile aggregation. Finally, the Cisco ASR 9000 Series is designed to simplify and enhance the operational and deployment aspects of service-delivery networks.

Key Features and Benefits

- Cisco IOS XR modular operating system—The Cisco ASR 9000 Series leverages the Cisco IOS XR operating system made famous by the highly successful Cisco CRS Carrier Routing System platform in core deployments. The Cisco IOS XR operating system is purpose-built for distributed systems such as the Cisco ASR 9000 Series, and uses a microkernel architecture to achieve true modularity. This modularity provides the path to nonstop operations during software image upgrades or module changes, without affecting normal platform operations.

- Fully distributed system—The Cisco ASR 9000 Series operates in a fully distributed fashion; that is, all packet-forwarding decisions and actions take place on the individual line cards. These high-density Ethernet line cards are equipped with a specialized network processor that provides a flexible programming infrastructure with high-density hierarchical quality-of-service (H-QoS) services, security, and integrated synchronous Ethernet. The distributed nature of the Cisco ASR 9000 Series improves resiliency by adding a new dimension in scale for features such as bidirectional forwarding detection (BFD) and Ethernet operations, administration, and maintenance (E-OAM).

- Operationally efficient and redundant hardware—The Cisco ASR 9000 Series provides an infrastructure where all common components, route switch processors (RSPs), switching fabric, fans, and power supplies, are completely redundant. In addition, the platform is designed such that power is used on an as-needed basis depending on system requirements. Power has been modularized for a true pay-as-you-grow approach, reducing capital expenditures (CapEx) and again providing an operationally efficient deployment. The Cisco ASR 9000 also provides a space-optimized small-platform option that uses the Series' common components and retains a central office deployment-ready capability using a patent-pending side-to-back airflow design.

- Environmentally conscious design—In today's world of increasing awareness of the human impact on the environment and the resultant fiscal implications, Cisco ASR 9000 Series Routers bring a fresh new "conscious" approach to product development. From optimal thermal design to the architecture of the power infrastructure, from the placement of line card components to the pitch of each slot, every design aspect had one goal in mind: reduced environmental impact through lowered power consumption and decreased cooling requirements. Even the product packaging process was evaluated to minimize the use of packaging material and thereby reduce waste at customer locations. The Cisco ASR 9000 Series is an example of the continued Cisco commitment to efficient and future-friendly product design.

Specifications

Model	Cisco ASR 9010	Cisco ASR 9006
Dimensions	Height—36.75 in. (933.5 mm) Width—17.5 in. (444.5 mm) Depth: · With doors—31.45 in. (798.8 mm) · Without doors—28.65 in (727.2 mm) Weight: · 191 lbs (86.8 kg) (Unloaded) · 375 lb (170.5 kg) (maximum)	Height—17.5 in. (444.5 mm) Width—17.5 in. (444.5 mm) Depth: · With doors—31.45 in. (798.8 mm) · Without doors—28.65 in (727.2 mm) Weight: · 110 lbs (50 kg) (Unloaded) · 230 lbs (106.8 kg) (Fully Loaded)
Slot Orientation	Vertical	Horizontal
Cisco ASR 9000 Series RSP	Dual redundant RSPs in 2 slots	Same as Cisco ASR 9010
Cisco ASR 9000 Series LCs	Eight line card slots	Four line card slots
"Commons" Components	Two RSPs Two fan trays Two PEMs (either DC or AC) One fan filter	Two RSPs Two fan trays One PEM (either DC or AC) One fan filter
Reliability and Availability	Fabric redundancy Fan redundancy Feed redundancy Power-supply redundancy RSP redundancy Software redundancy	Same as Cisco ASR 9010

Rack Mounting	Yes • 19-inch • 21 and 23 inch adapters available	Same as Cisco ASR 9010 Note: Minimum 17.75-in. opening between posts is needed for proper operation.
Airflow	Front-to-back	Side-to-back
Chassis Switching	Up to 6.4 Tbps	Up to 3.2 Tbps
Capacity		
Fabric	One per RSP • Active /Active non-blocking operation mode in dual RSP redundant configuration. • Fully redundant in dual RSP redundant configuration • Built-in service-intelligence and traffic-prioritization capability	Same as Cisco ASR 9010
Thermal	Two fan trays • Twelve high-efficiency fans per tray • Variable-speed fans for optimal thermal performance • No single point of failure	Two fan trays • Six high-efficiency fans per tray • Variable-speed fans for optimal thermal performance • No single point of failure
Power		
Modularity	• Up to 6 power modules (AC or DC) for future scalability Multiple power module types • 3-kW AC power module • 2.1 and 1.5-kW DC power modules Note: Mixing of AC and DC modules is not supported. DC modules can be mixed and matched.	• Up to 3 power modules (AC or DC) for future scalability Multiple power module types • Same as Cisco ASR 9010 Note: Mixing of AC and DC modules is not supported. DC modules can be mixed and matched.
Redundancy	• Module redundancy: 1:N-1:1 • Feed redundancy • PEM redundancy	• Module redundancy: 1:N-1:1 • Feed redundancy

Selected Part Numbers and Ordering Information

Cisco ASR 9000 Series Chassis	
ASR-9010-AC/ASR-9010-DC	Cisco ASR 9010 chassis
ASR-9006-AC/ASR-9010-DC	Cisco ASR 9006 chassis

For More Information

http://www.cisco.com/en/US/products/ps9853/index.html

Cisco ASR 1000 Series Aggregation Services Routers

The Cisco ASR 1000 Series Aggregation Services Routers include five versions: the Cisco ASR 1002-Fixed Router, the Cisco ASR 1002 Router, the Cisco ASR 1004 Router, the Cisco ASR 1006 Router, and the Cisco ASR1013 Router. All five models use the new, innovative, and powerful Cisco QuantumFlow Processor and are optimized for both service provider, managed services and enterprise deployments.

The Cisco ASR 1000 Series delivers multiple services embedded in the Cisco QuantumFlow Processor at wire speeds of up to 40 Gbps. The services supported on the Cisco Packet QuantumFlow Processor include security services (for example, encryption and firewall), Performance Routing, quality of service (QoS), Network-Based Application Recognition (NBAR), Cisco IOS Flexible Packet Matching (FPM), broadband aggregation, and Cisco Unified Border Element (also known as session border controller), among others.

With the separation of the control and data planes in the Cisco ASR 1000 Series Router architecture, software redundancy (on the Cisco ASR 1002-F, 1002, and 1004 models) and hardware redundancy (on the Cisco ASR 1006 and ASR1013 Router) are provided. Additionally, the modular Cisco IOS XE Software that is introduced with the Cisco ASR 1000 Series facilitates In Service Software Upgrade (ISSU). I/O connectivity is provided through shared port adapters (SPAs), which are housed in the SPA Interface Processor (SIP) card.

From a price-to-performance perspective, the Cisco ASR 1000 Series Router solution fits well between the Cisco 7200 and Cisco 7301 Series and the Cisco 7600 and Cisco Catalyst 6000 Series Switches, thus dramatically enhancing the Cisco midrange routing portfolio.

All the following Cisco ASR 1000 Series Aggregation Services Routers offer L3VPN, route reflector, WAN services aggregation, managed customer premises equipment (CPE), and Layer 2 Tunneling Protocol access concentrator (LAC) or Layer 2 Tunneling Protocol network server (LNS).

Ideal for Companies That Need These Features

Cisco ASR 1002-Fixed
- Support for one SPA
- Support for one integrated 10-Gigabit SIP (ASR1000-SIP10)
- Support for one integrated route processor (ASR1000-RP1)
- Support for one integrated embedded services processor engine (ASR1000-ESP2.5)
- Built-in four 1-Gigabit Ethernet ports
- Support of Software Redundancy

Cisco ASR 1002
- Support for three SPAs
- Support for one integrated 10-Gigabit Ethernet SIP (ASR1000-SIP10)
- Support for one integrated route processor (Cisco ASR 1000 Series RP1)
- Support for one embedded services processor (Cisco ASR 1000-ESP5 or ASR1000-ESP10)
- Built-in four 1-Gigabit Ethernet ports
- Support of Software Redundancy

Cisco ASR 1004
- Support for eight SPAs
- Support for two SIP cards (ASR1000-SIP10), each with 4 SPA slots
- Support for one route processor (ASR 1000-RP1 or ASR1000-RP2)
- Support for one embedded services processor (ASR 1000-ESP10, ASR1000-ESP20, or ASR1000-ESP40)
- Support of Software Redundancy

Cisco ASR 1006
- Support for twelve SPAs
- Support for three SIP cards (ASR1000-SIP10 and/or ASR1000-SIP40), each with 4 SPA slots
- Support for up to two route processors (ASR 1000-RP1 or ASR1000-RP2)
- Support for up to three embedded services processors (ASR1000-ESP10, ASR1000-ESP20 or ASR1000-ESP40)
- In-box hardware redundancy (dual ESP and dual route processor) - optional

Cisco ASR 1013
- Support for twenty-four SPAs
- Support for six SIP cards (ASR1000-SIP10 and/or ASR1000-SIP40), each with 4 SPA slots
- Support for up to two route processors (ASR1000-RP2)
- Support for up to two embedded services processors (ASR1000-ES40)
- In-box hardware redundancy (dual ESP and dual route processor) - optional

Key Features and Benefits

- Compact form factor—The Cisco ASR 1000 Series offers 2.5-Gigabit throughput in a compact 2-rack unit chassis with fixed components, up to 10-Gigabit Ethernet throughput in compact modular 2-rack unit (2RU) form factor, up to 40 Gigabit throughput in a modular 4-rack unit (4RU), on the modular 6-rack unit (6RU) and modular 13-rack unit (13 RU) form factors.
- Modularity—Cisco offers a choice of four chasses that support 1, 3, 8, 12 or 24 SPAs, a selection of embedded services processors (forwarding processors) providing up to 40-Gigabit throughput, and a growing range of LAN and WAN interfaces. SIPs, SPAs, route processors, and embedded services processors are all modular and fully upgradable as future generations are released (with the exception of SIP carrier card and route processor on the Cisco ASR 1002 and the SIP carrier card, route processor, and embedded services processor on the Cisco ASR 1002-Fixed chassis, which are integrated).
- Integrated services—Services can be enabled either at the time of ordering or after the router is already deployed. Encryption, Cisco IOS Software redundancy, firewall, Session Border Controller Functionality (also known as Cisco Unified Border Element [CUBE]), and Flexible Packet Inspection (FPI, including Network Based Application Recognition (NBAR) and Flexible Packet Matching (FPM)) can all be enabled by purchasing feature licenses with no need for hardware upgrades.
- High availability—Cisco offers in-box engine redundancy on the Cisco ASR 1006 and Cisco ASR 1013 and Cisco IOS Software redundancy on the Cisco ASR 1002-F, 1002 and 1004 models.
- Common SPAs—SPAs are shared with the Cisco Catalyst 6500 and Catalyst 7600 Series, simplifying sparing and protecting customer investment in interfaces.
- WebEx Node SPA – double-height SPA supported currently only on the ASR1002, ASR1004, ASR1006, and ASR1013 chassis maximizes bandwidth efficiency and user experience for WebEx users in the Enterprise.

Specifications

Feature	Cisco ASR1002-F	Cisco ASR1002	Cisco ASR1004	Cisco ASR1006	Cisco ASR 1013
Fixed Ports	4 built-in GE ports	4 built-in GE ports	0	0	0
Embedded Service Processor Slots	Integrated	1	1	2	2
Route Processor Slots	Integrated	1	1	2	2
SIP Card Slots	Integrated	Integrated	2	3	6
Shared Port Adapter Slots	1	3	8	12	24
Forwarding Rate	Up to 4 Mpps	Up to 8 Mpps	Up to 17 Mpps	Up to 25 Mpps	Up to 25 Mpps
System DRAM Memory	4 GB (default); 4 GB (max.)	4 GB (default); 4 GB (max.)	2 GB (default); 4 GB (max.)	2 GB (default); 4 GB (max.)	8 GB (default); 8 GB (max.)

Minimum Cisco IOS Release	IOS XE 2.4.0	IOS XE 2.1.0	IOS XE 2.1.0	IOS XE 2.1.0	IOS XE 3.1.0S
Redundant Power Supply	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default	Yes, Dual AC or DC by default
Chassis Height	2 RU	2 RU	4 RU	6 RU	13 RU
Rack Mountable	Yes	Yes	Yes	Yes	Yes
Dimensions (H x W x D)	3.5 x 17.2 x 22 in.	3.5 x 17.2 x 22 in.	7.0 x 17.2 x 22 in.	10.5 x 17.2 x 22 in.	22.8 x 17.2 x 22 in
Airflow	Front-to-back	Front-to-back	Front-to-back	Front-to-back	Front-to-back

Selected Part Numbers and Ordering Information

ASR1002-F	Cisco ASR1002 System, fixed ESP, Crypto, 4 built-in GE, Dual P/S, 4GB DRAM
ASR1002	Cisco ASR1002 chassis, 4 built-in GE, Dual P/S, 4GB DRAM
ASR1004	Cisco ASR1004 chassis, Dual P/S
ASR1006	Cisco ASR1006 chassis, Dual P/S
ASR1013	Cisco ASR1013 chassis, Dual P/S

Additional part numbers including Cisco ASR 1000 bundle part numbers can be found on the Price List or please contact your Cisco account representative.

For More Information

http://www.cisco.com/go/asr1000

Cisco 2000 Series Connected Grid Router

The Cisco Connected Grid portfolio of products and solutions are designed specifically for a Smart Grid network. These solutions include the Cisco 2010 Connected Grid Router (CGR 2010) optimized for use in power substations and meet substation compliance standards including IEEE 1613 and IEC 61850-3.

The CGR 2010 provides the substation operator with the benefits of improved security, manageability, and network reliability. The CGR 2010 uses Cisco IOS software which is the operating system powering millions of Cisco routers deployed worldwide. Cisco IOS software delivers the benefits of integrated security for NERC/CIP compliance, quality of service, and network management to ensure integrity and priority of operational data communications.

Ideal for Utilities That Need These Features

Cisco 2010

- Rugged industrial design and substation compliance with IEC-61850-3 and IEEE 1613 for utility substation environments
- Modular architecture facilitates upgrades without fork lift upgrades
- Integrated security to help utilities address compliance with critical infrastructure protection mandates
- High availability design for maximum network up time and redundancy
- Network and device management tools for deployments, upgrades, and remote monitoring
- Advanced quality of service (QoS) capabilities to support mission-critical substation communications such as SCADA (Supervisory Control and Data Acquisition)
- Comprehensive network security features based on open standards

Key Features and Benefits

- Rugged design for substation compliance—In addition to IEC 61850-3 and IEEE 1613 compliance, convection cooled with no moving parts or fans for maximum reliability and reduced network outages.
- Services integration—The CGR 2010 offers integrated services including advanced data routing, firewall, traffic shaping, quality of service, and network segmentation
- Service on demand—A single Cisco IOS Universal Software image is installed on each CGR 2010. The Universal image contains all of the Cisco IOS technology sets which can be activated with a software license. This allows your business to quickly deploy advanced features without downloading a new IOS image. Additionally, larger default memory is included to support the new capabilities.
- Network agility—Modular interfaces and power supplies offer increased bandwidth, a diversity of connection options, and network resiliency.
- Network management—CiscoWorks LMS and Cisco Configuration Profession (CCP) network management tools to help utilities provision and diagnose network issues.

Specifications

Feature	Cisco CGR 2010
Grid Router WAN Interface Card (GRWIC) Slots	4

Gigabit Ethernet density	2 (dual-purpose ports: 100/1000 fiber SFP and/or 10/100/1000 Gigabit copper)
T1/E1 WAN Module	Yes – 1 or 2 port T1/E1 CSU/DSU module
Serial RS-232 Module	Yes – Up to 8 ports on a single module. 32 ports maximum with all 4 slots populated
Flash Memory (External)	256 MB (default) – second compact flash slot can be populated with additional flash memory
DRAM Memory	1024 MB (default)
Power Supply	External high AC/DC and low DC power supply options available for redundant power supply support
Dimensions (H x W x D)	3.5 x 17.25 x 15 in. (88.9 x 438.2 x 381 mm)

Selected Part Numbers and Ordering Information

Cisco 2010 Connected Grid Router	
CGR-2010/K9	Cisco CGR2010 w/2GE, 4 GRWIC slots, 256MB CF, 1GB DRAM, IPB
CGR-2010-SEC/K9	Cisco CGR2010 security bundle w/SEC license PAK

For More Information
http://www.cisco.com/go/cgr2000

Cisco SRP 500 Series Services Ready Platforms

The Cisco SRP 500 Series Services Ready Platforms are flexible, cost-effective fixed-configuration customer premises equipment (CPE) with embedded intelligence to enable service providers to create, provision, and deploy premium revenue-generating services--a variety of high-quality IP voice, data, security, wireless, and application services--to small businesses on an as-needed basis. These platforms will help enable service providers to deliver differentiated, converged service offers that increase bandwidth usage and average revenue per user while reducing customer churn.

Key Features and Benefits
- Embedded intelligence to support a variety of high-quality voice, data, security, wireless, and application services.
- Integrated voice ports powered by an industry-leading voice Session Initiation Protocol (SIP) stack to deliver clear, high-quality voice service.
- Integrated stateful packet inspection (SPI) firewall and high-speed IP Security (IPsec) VPN capabilities with support for Triple Data Encryption Standard (3DES) to help keep small business data safe.
- 4-port managed Ethernet switch to connect devices in the office. One port can be designated as the network edge, while VLAN support allows for highly secure segmentation of network resources.
- Integrated 802.11n wireless access point to enable employees to connect to the network while away from their desks.
- Third-generation (3G) wireless data readiness with built-in USB modem drivers.
- Interoperability with industry-leading DSL access multiplexers (DSLAMs), soft switches, and voice gateways to enable scalable, end-to-end multiservice network deployments.
- Support for industry-standard TR-069 and XML-based provisioning for zero-touch deployments.
- Easy integration with other Cisco Small Business Series products to enable adaptability as customer needs change.

Specifications

Feature	Cisco SRP 521W	Cisco SRP 526W	Cisco SRP 527W
WAN	10/100 Mbps Fast Ethernet	Asymmetric DSL (ADSL) 2+ Annex B	ADSL 2+ Annex A
Backup WAN	Wireless data using supported 3G USB modem	Wireless data using supported 3G USB modem	Wireless data using supported 3G USB modem
LAN	4 ports 10/100 Mbps Fast Ethernet	4 ports 10/100 Mbps Fast Ethernet	4 ports 10/100 Mbps Fast Ethernet
Voice Ports	2 FXS, 1 FXO (relay	2 FXS, 1 FXO (relay	2 FXS, 1 FXO (relay
USB 2.0 Ports	1	1	1

Selected Part Numbers and Ordering Information

Ethernet	
SRP521W-K9-G1	Cisco SRP 521W, FE WAN, 802.11n FCC, 2FXS/1FXO, US power
SRP521W-K9-G5	Cisco SRP 521W, FE WAN, 802.11n ETSI, 2FXS/1FXO, EU/UK power
SRP521W-K9-G4	Cisco SRP 521W, FE WAN, 802.11n non-FCC, 2FXS/1FXO, ANZ power
ADSL2/2+	
SRP526W-K9-G5	Cisco SRP 526W, ADSL2+ Annex B, 802.11n ETSI, 2FXS/1FXO, EU/UK power
SRP527W-K9-G1	Cisco SRP 527W, ADSL2+ Annex A, 802.11n FCC, 2FXS/1FXO, US power
SRP527W-K9-G4	Cisco SRP 527W, ADSL2+ Annex A, 802.11n non-FCC, 2FXS/1FXO, ANZ power
SRP527W-K9-G5	Cisco SRP 527W, ADSL2+ Annex A, 802.11n ETSI, 2FXS/1FXO, EU/UK power

For More Information
http://www.cisco.com/go/srp500

Cisco Routing Services

The enterprise network becomes a strategic asset through effective architecture, deployment, and operations.

Realize the full business value of your technology investments faster with intelligent, personalized services from Cisco and our partners. Backed by deep networking expertise and a broad ecosystem of partners, Cisco Services enable you to successfully plan, build, and run your network as a powerful business platform. Whether you are looking to quickly seize new opportunities to meet rising customer expectations, improve operational efficiency to lower costs, mitigate risk, or accelerate growth, we have a service that can help you.

For more information about Cisco Routing Services, visit http://www.cisco.com/go/services/routing-switching.

Chapter 2: Switching

This chapter provides only a subset of Cisco products and part numbers. Also, you will see products listed multiple times because they have dual roles and are used differently in small, medium, and large networks.

Switching At-a-Glance

Product	Features	Page
CAMPUS LAN—CORE SWITCHES		
Cisco Catalyst 6500 Series Switches ***NEW UPDATES***	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome, Energywise · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Integrates services through its portfolio of service modules	2–4
Cisco Catalyst 4500 Series Switches	· Supports hardware acceleration for Layer-2 through -4 intelligent network services · Delivers high-availability with In-Service Software Upgrade and redundant supervisors · Integrates simultaneous IPv4 and IPv6 support · Provides flexible QoS, integrated security, and non-stop forwarding to maximize uptime and network resiliency	2–8
Cisco Catalyst 4900M Series Switches	· Optimized for small-to-medium aggregation · Supports up to 24 ports with 10 Gigabit Ethernet Fiber interfaces · Supports up to 16 ports with 10 Gigabit Ethernet copper interfaces · Supports up to 32 ports with 1 Gigabit Fiber Ethernet · Supports up to 40 ports with 1 Gigabit Ethernet copper interfaces · Provides up to 320 Gbps forwarding capacity · Supports critical routing protocols and IPv6 in hardware including multicast · Features hot-swappable, redundant power supply and fans	2–12
CAMPUS LAN—ACCESS SWITCHES		
Cisco Catalyst 4500 Series Switches	· Supports hardware acceleration for Layer-2 through -4 intelligent network services · Delivers high-availability with In-Service Software Upgrade and redundant supervisors · Integrates simultaneous IPv4 and IPv6 support on both Unicast and Multicast · Features hot-swappable, redundant power supply and fans · Delivers comprehensive set of services for intelligent campus access, Cisco Integrated Security framework, PoE+ with IEEE 8.02.at and flexible QoS	2–8
Cisco Catalyst 3750-X Series Switches ***NEW PRODUCT***	· Stackable fixed-configuration switches are ideal for campus and branch offices. · Investment protection is maximized during deployment of highly secure converged applications. · Cisco StackPower technology offers high-availability and operational efficiency.	2–14
Cisco Catalyst 3750-E Series Switches	· Stackable, fixed-configuration switches with Cisco StackWise Plus technology and a 64-Gbps interconnect provide a unified, resilient system of up to nine switches · Offers Layer 2–4 switching and intelligent services with dynamic IP routing and IPv6 · Offers up to forty-eight 10/100/1000 ports plus two 10-Gigabit Ethernet ports per stackable switch · Offers field-replaceable and upgradable power supplies and fan · Fully backward-compatible with the Cisco Catalyst 3750 Series Switches	2–17
Cisco Catalyst 3750 Series Switches	· Next-generation energy-efficient Layer 3 Fast Ethernet stackable switches support Cisco EnergyWise technology. · Consumes less power than their predecessors and are the ideal access layer switch for enterprise, retail, and branch-office environments · Maximizes productivity and provide investment protection	2–19
Cisco Catalyst 3560-X Series Switches ***NEW PRODUCT***	· Standalone fixed-configuration switches are ideal for campus environments and branch offices. · Maximizes investment protection during deployment of highly secure converged applications · Smart operations for automating infrastructure deployment	2–22
Cisco Catalyst 3560-E Series Switches	· Layer 2–4 switching and intelligent services with dynamic IP routing and IPv6 · Up to forty-eight 10/100/1000 ports plus two 10-Gigabit Ethernet ports per switch · Field-replaceable and -upgradable power supplies and fan	2–25
Cisco Catalyst 3560 Series Switches	· These switches offer Layer 2–4 switching and intelligent services with dynamic IP routing and IPv6. · They offer Fast Ethernet and Gigabit Ethernet connectivity. · They offer up to forty-eight 10/100/1000 ports plus 4 Small Form-Factor Pluggable (SFP) ports.	2–27
Cisco Catalyst 2975 Series Switches	· 48-port Gigabit Ethernet Power over Ethernet stackable switch enables intelligent LAN services for small enterprise LAN access or branch-office environments · Enhanced Layer 2 + LAN Base Cisco IOS Software delivers integrated security, quality of service (QoS), and availability to enable converged applications	2–29

Cisco Catalyst 2960-S Series Switches ***NEW PRODUCT***	· Cisco FlexStack technology in these stackable and standalone switches delivers enhanced LAN services for midsize enterprise and branch-office networks. · Cisco Catalyst 2960-S Switches offer Layer 2 switching with intelligent Layer 2–4 services. · Offers Power over Ethernet Plus for next-generation high-power devices · Cisco Catalyst smart operations automates infrastructure deployment.	2–30
Cisco Catalyst 2960 Series Switches	· These standalone fixed-configuration switches are ideal for midmarket and branch-office networks. · The switches offer Layer 2 switching with intelligent Layer 2–4 services. · They offer Fast Ethernet and Gigabit Ethernet connectivity. · Power over Ethernet (PoE) support includes 24 full PoE ports and 24-port configurations with PoE supported on 8 ports.	2–32

CAMPUS LAN—SMALL BUSINESS SWITCHES

Cisco Catalyst 2960 Series Switches	· These standalone fixed-configuration switches are ideal for midmarket and branch-office networks. · The switches offer Layer 2 switching with intelligent Layer 2–4 services. · They offer Fast Ethernet and Gigabit Ethernet connectivity. · Power over Ethernet (PoE) support includes 24 full PoE ports and 24-port configurations with PoE supported on 8 ports.	2–32
Cisco ESW 500 Series Switches ***NEW PRODUCT***	· Ethernet switches small business networks · Provides Small Form-Factor Pluggable (SFP) expansion slots for fiber-optic or Gigabit Ethernet uplink connectivity · Supports an optional redundant power supply that provides uninterrupted failover to help ensure continuous operation	2–35

DATA CENTER SWITCHES

Cisco Catalyst 6500 Series Switches ***NEW UPDATES***	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Provides WAN connectivity through its MPLS capabilities and SIP modules	2–4
Cisco Catalyst 4900M Series Switches	· Optimized for small-to-medium aggregation · Supports up to 24 ports with 10 Gigabit Ethernet Fiber interfaces · Supports up to 16 ports with 10 Gigabit Ethernet copper interfaces · Supports up to 32 ports with 1 Gigabit Fiber Ethernet · Supports up to 40 ports with 1 Gigabit Ethernet copper interfaces · Provides up to 320 Gbps forwarding capacity · Supports critical routing protocols and IPv6 in hardware including multicast · Features hot-swappable, redundant power supply and fans	2–12
Cisco Catalyst 4900 Series Switches	Provides an ideal solution for data center top or rack deployments and for space constrained branch core deployments that require high performance wire speed services in a 1RU form factor. The Cisco Catalyst 4900 Series Switches are data center top-of-rack optimized switches with emphasis on buffering for high throughput and full mesh traffic profiles. They offer: · Layer 2–4 switching and intelligent services with dynamic IP routing · Up to 48 1 Gigabit copper ports and up to four 10GE ports for branch core aggregation · Up to 28 SFP ports and two 10GE ports for branch core aggregation · Dual, hot-swappable internal AC or DC power supplies · Hot-swappable fan trays	2–13
Cisco Nexus Switches	For product information, refer to Chapter 6, "Data Center."	See 6–1

SERVICE PROVIDER—AGGREGATION SWITCHES

Cisco Catalyst 6500 Series Switches ***NEW UPDATES***	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Provides WAN connectivity through its MPLS capabilities and SIP modules	2–4
Cisco Catalyst 4500 Series Switches	· Supports hardware acceleration for Layer-2 through -4 intelligent network services · Delivers high-availability with In-Service Software Upgrade and redundant supervisors · Integrates simultaneous IPv4 and IPv6 support · Provides extensive services for Carrier Ethernet networks such as Cisco Resilient Ethernet Protocol, Flexlink+, Ethernet Operation and Management, fault isolation and service verification, QoS, private VLANs, and PPPoE Snooping · Port density for triple-play FTTx networks and L2 aggregation networks	2–8

Cisco Catalyst 4900M Series Switches	· Optimized for small-to-medium aggregation · Supports up to 24 ports with 10 Gigabit Ethernet interfaces · Supports up to 32 ports with 1 Gigabit Ethernet · Provides up to 320 Gbps forwarding capacity · Supports critical routing protocols and IPv6 in hardware including multicast · Features hot-swappable, redundant power supply and fans	2–12
Cisco ME 4900 Series Ethernet Switches ***NEW TO GUIDE***	· Optimized for small aggregation · Integrates into small central offices with limited rack space · Meets the requirements of high performance Carrier Ethernet networks · Features hot-swappable, redundant power supply and fans · Support 2 ports with 10GE uplinks and 28 ports with GE SFP downlinks	2–36
Cisco ME 3800X Series Ethernet Switches ***NEW PRODUCT***	· Converged, full-featured aggregation platform designed specifically for the mobile, business, and residential markets · Complements the Cisco 7600 Series Routers and Cisco ASR 9000 Series Aggregation Services Routers by providing a rich and scalable feature set of Layer 2 and Layer 3 VPN services in a compact package	2–38
Cisco ME 6500 Series Ethernet Access Switches ***NEW TO GUIDE***	· Delivers high performance, reliability, and QoS for small and remote offices · Addresses triple-play implementations supporting voice, video, and data services · Promotes adoption of VPN services for ETTH, ETTB, and DSLAM deployments · Extends advanced MPLS, QoS, multicase, and IPv6 features into Ethernet access and aggregation networks	2–39

SERVICE PROVIDER—ETHERNET ACCESS SWITCHES

Cisco Catalyst 4500 Series Switches	· Supports hardware acceleration for Layer-2 through -4 intelligent network services · Delivers high-availability with In-Service Software Upgrade and redundant supervisors · Integrates simultaneous IPv4 and IPv6 support · Provides extensive services for Carrier Ethernet networks such as Cisco Resilient Ethernet Protocol, Flexlink+, Ethernet Operation and Management, fault isolation and service verification, QoS, private VLANs, and PPPoE Snooping · Port density for triple-play FTTx networks and L2 aggregation networks	2–8
Cisco ME 3400 Series Ethernet Access Switches ***NEW TO GUIDE***	· Helps reduce total cost of ownership and operating expenses · Simplifies deployment with a compact form factor · Promotes continuous switch operation · Helps shield subscribers from malicious users and traffic	2–41
Cisco ME 3400E Series Ethernet Access Switches ***NEW TO GUIDE***	· Supports deployment of advanced Ethernet business services · Provides tools to deliver high service availability · Offers a path for flexible and differentiated services · Enhances network services security against malicious use	2–42
Cisco ME 4900 Series Ethernet Access Switches ***NEW TO GUIDE***	· Addresses next-generation residential services · Integrates into small central offices with limited rack space · Meets the requirements of high-performance Carrier Ethernet networks · Offers triple-play service support (voice, video, and data)	2–36
Cisco ME 3600X Series Ethernet Access Switches ***NEW TO GUIDE***	· Built specifically for the convergence of wireless and wireline services · Enables service providers to initiate Multiprotocol Label Switching (MPLS)-based VPN services from within the access layer	2–44

CONNECTED GRID SWITCHES

Cisco 2500 Series Connected Grid Switches ***NEW PRODUCT***	· Rugged industrial design and substation compliance: IEC 61850-3 and IEEE 1613 for harsh utility substation environments · Tools for easy deployment, management, and replacement · Advanced quality of service (QoS) capabilities to support mission-critical substation applications such as supervisory control and data acquisition (SCADA) and IEC 61850 generic object oriented substation event (GOOSE) messaging	2–46

SERVICES

Cisco Switching Services Assess overall readiness with planning services and reduce the risk, delays, and total cost of deployment with an implementation-ready design that you can use to engineer your network.		2–47

Cisco Catalyst 6500 Series Switches

Cisco is extending the Cisco Catalyst 6500 innovations with the introduction of several new features and enhancements for the campus backbone, delivering very high levels of availability, integrated security, virtualization, enhanced manageability, IP communications, wireless, and applications support to enterprise customers, medium-sized businesses, and service providers. The feature richness, flexibility, density, and scalability of this product line set the standard for converged data, voice, and video networks, and facilitate outstanding operational efficiency and investment protection.

- Catalyst 6500 virtualization—Extending virtual switch system to support MPLS and IPv6 for virtualized services with integrated service modules
- Collaboration—Quality of service optimization to enhance video quality and end user experience
- Operations—Increased collaboration traffic visibility with Network Management Module (NAM) enhancements
- IPv6 innovations—IPv6/IPv4 dual stack support. MPLS and MPLS VPN over IPv6 support
- Service Module Integration—Support for key services such as mobility and security through its WiSM and firewall modules

Ideal for Companies That Need These Features

Cisco Catalyst 6513	• High-capacity chassis for Ethernet connectivity • Spare slots for services modules providing network security and management
Cisco Catalyst 6509-E	• Use in the wiring closet, distribution, core, data center, and WAN edge
Cisco Catalyst 6509-V-E	• Front-access power supplies • Integrated cable management for high-density cabling environments • Front-to-back airflow optimized for high-density data center deployments
Cisco Catalyst 6506-E	• Medium-form factor chassis for the wiring closet, distribution, core, data center, and WAN edge
Cisco Catalyst 6504-E	• Small form factor, high performance, chassis sharing interface modules and supervisor engines with larger chassis for common sparing • Suitable for small and medium-sized enterprise core or distribution, or the metro or enterprise WAN edge
Cisco Catalyst 6503-E	• Low-density wiring-closet chassis sharing interface modules and supervisor engines with larger chassis for common sparing
Cisco Catalyst 6500 Virtual Switching Supervisor Engine 720-10G	• High-bandwidth deployments: core, distribution, aggregation, and data center access • Compatibility with all Cisco Catalyst 6500 chassis (except the Cisco Catalyst 6503 Switch)
Cisco Catalyst 6500 Series Supervisor Engine 720	• High-bandwidth deployments: core, distribution, aggregation, and data center access • Compatibility with all Cisco Catalyst 6500 chassis
Cisco Catalyst 6500 Series Supervisor Engine 32 PISA	• Wiring closet access and the WAN edge • Compatibility with all Cisco Catalyst 6500 chassis
Cisco Catalyst 6500 Series Supervisor Engine 32	• Wiring closet access • Compatibility with all Cisco Catalyst 6500 chassis

Key Features and Benefits

- Cisco IOS Software modularity—The Cisco Catalyst 6500 Series reduces planned and unplanned downtime while boosting operational efficiency. Faults within modular subsystems are isolated from all other processes, and can be restarted without losing state (stateful process restarts). While modular IOS image will continue to be supported in 12.2(33)SXI, software patches will no longer be provided starting 12.2(33)SXI3.
- Cisco IOS Embedded Event Manager (EEM)—The Cisco IOS EEM automates proactive administrative tasks and network reactions to unexpected events to further enhance operational efficiency.

- Maximum PoE scalability—The Cisco Catalyst 6500 Series supports up to 409 Class 3 devices; it leads the industry in PoE port density and accelerates deployment of PoE-enabled devices such as IP telephones and wireless access points. Cisco Intelligent Power Management allocates the optimal amount of power per device.
- Cisco Catalyst 6500 Virtual Switching Supervisor Engine 720-10G—The Virtual Switching System (VSS) technology, built upon this supervisor engine, facilitates easy-to-use, reliable, and scalable switching for enterprise core, distribution, data center, and server access. VSS delivers a system performance of up to 1.44 Tbps by unifying two physical switches into a single, logical entity offering optimized network convergence, load balancing, and manageability. The supervisor engine can be used in standalone mode to deliver up to 48 Mpps of centralized and 450 Mpps of distributed switching performance, building the foundation for the Cisco Catalyst 6500 Virtual Switching System 1440.
- Multichassis EtherChannel (MEC) Support—MEC provides redundancy for physical links and switches and can be deployed using VSS on the Cisco Catalyst 6500 Series Switches.
- Cisco Catalyst 6500 Series Supervisor Engine 720—This supervisor engine is optimized for high-bandwidth needs of the enterprise core, distribution, and data centers; it delivers up to 720-Gbps switch-fabric bandwidth and more than 400 Mpps of switching performance. Throughput is increased with support for line cards with Cisco Express Forwarding and distributed Cisco Express Forwarding IPv6 and Multiprotocol Label Switching (MPLS) are supported in hardware. The switch supports the following Layer 3 routing protocols: Routing Information Protocol (RIP), Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First (OSPF), Intermediate System-to-Intermediate System (IS-IS), and Border Gateway Protocol (BGP).
- Cisco Catalyst 6500 Supervisor Engine 32 PISA—This supervisor engine is optimized for oversubscribed wiring closet deployments and the WAN edge, where application intelligence is critical. The Programmable Intelligent Services Accelerator (PISA) technology used on this supervisor engine provides hardware-accelerated Deep Packet Inspection using Network Based Application Recognition (NBAR) and Cisco IOS Flexible Packet Matching (FPM). This intelligence provides greater visibility into critical applications and prevents the spread of worms and viruses. Multiple uplink configurations are available (refer to information about the Cisco Catalyst 6500 Supervisor Engine 32). This module is orderable only until Sept 2010.
- Cisco Catalyst 6500 Supervisor Engine 32—This supervisor engine is optimized for oversubscribed wiring closet deployments; it incorporates a 32-Gbps shared bus architecture with support for up to 15 Mpps of switching performance. Centralizing Layer 2 and Layer 3 forwarding, the supervisor engine is available in two models: 8-port Gigabit Ethernet uplinks or 2-port 10-Gigabit Ethernet uplinks.
- Various integrated service modules allow multigigabit throughput of services such as firewall, intrusion detection, anomaly detection, content switching (load balancing), network analysis, wireless integration (up to 1500 access points), voice gateway, and so on.
- Flexible configuration options—Modular 3-slot, 4-slot, 6-slot, 9-slot, and 13-slot chassis provide flexible configurations with 40-GB per-slot capacity.
- End-to-end security—Cisco Catalyst 6500 switches support Cisco Network Admission Control (NAC) and 802.1x, hardware-based Control Plane Policing (CoPP); DHCP, IPSG; NetFlow; access control lists (ACLs), Secure Shell (SSH) Protocol and FWSM to provide security for both users and network services.
- Cisco EnergyWise—Energywise helps monitor and reduce company-wide power consumption and carbon footprint by allowing IT operations and facilities to measure and fine-tune power usage to realize significant cost savings. EnergyWise focuses on reducing power utilization on all devices connected to a Cisco network ranging from PoE devices such as IP phones to PCs.

Specifications

Feature	Cisco 6503-E	Cisco 6504-E	Cisco 6506-E	Cisco 6509-E	Cisco 6509-VE	Cisco 6513
Modular Slots	3	4	6	9	9	13
Gigabit Ethernet SFP density	98	146	242	386	384	410
10 Gigabit Ethernet XENPAK/X2 port density	34	50	82	130	130	84
10 Gigabit Ethernet RJ45 port density	32	48	80	128	128	80
10/100/1000 density	97	145	241	385	385	577
10/100 density	192	288	480	768	768	1152
100BASE-FX density	98	146	242	386	386	578
Max. watt power consumption (redundant mode)						
AC Internal[1]	1,400	2,700	6,000	8,700	8,700	8,700
DC Internal	950	2,700	6,000	6,000	6,000	6,000
Max. number of 10/100/1000 Class 3 devices (15.4W) Max. power supplies						
AC Internal	48	110	240	384	384	265
WAN Interfaces	DS0 to OC-192					
Available Bandwidth	Scalable to 240 Gbps	Scalable to 320 Gbps	Scalable to 480 Gbps	Scalable to 720 Gbps	Scalable to 720 Gbps	Scalable to 720 Gbps
Throughput	Scalable to 126Mpps	Scalable to 1744Mpps	Scalable to 270Mpps	Scalable to 414Mpps	Scalable to 414Mpps	Scalable to 456Mpps

Redundant Supervisor	Yes					
Hot-Swappable Power Supplies	Yes					
VLAN Maximum	4096					
EtherChannel Capable	Yes; up to 8 links of Fast Ethernet, Gigabit Ethernet or 10GE.					
Management Capabilities	CiscoWorks 2000, RMON, Encapsulated Remote Switched Port Analyzer (ERSPAN), SNMP, Telnet, BOOTP, and Trivial File Transfer Protocol (TFTP), EEM, GOLD, Smart Call Home, Syslog					
Rack Unit (RU)	4	5	12	15	21	20
Dimensions (H x W x D)	7 x 17.5 x 21.7 in. (17.8 x 44.1 x 55.2 cm.)	8.7 x 17.5 x 21.6 in. (22.2 x 44.5 x 55.2 cm.)	19.2 x 17.5 x 18.2 in. (48.8 x 44.5 x 46.0 cm.)	24.5 x 17.5 x 18.2 in. (62.2 x 44.5 x 46.0 cm.)	36.75 x 17.2 x 20.7 in. (93.3 x 43.1 x 53.3 cm.)	33.3 x 17.3 x 18.1 in. (84.6 x 43.7 x 46.0 cm.)
Unit weight (chassis only)	33 lbs. (15.0 kgs.)	40 lbs. (18.1 kgs.)	50 lbs. (22.7 kgs.)	60 lbs. (27.3 kgs.)	121 lbs. (54.9 kgs.)	98 lbs. (45.0 kgs.)

Supervisor Engines	Virtual Switching Supervisor Engine 720-10G (VS-S720-10G-3C=) (VS-S720-10G-3CXL=)		Supervisor Engine 720 (WS-SUP720-3BXL) (WS-SUP720-3B)
Chassis supported	All (except 6503 non-E)		All
Bandwidth per slot	40 Gbps		40 Gbps
Total bandwidth	720 Gbps		720 Gbps
Packets per second	48 Mpps centralized; 456 Mpps distributed		30 Mpps centralized; 425 Mpps distributed
MAC addresses supported	96K Max./80K effective		64K Max./32K effective
Routes supported	256,000 (3C); 1,000,000 (3CXL)		256,000 (3B); 1,000,000 (3BXL)
Onboard memory (DRAM)	1 GB		Up to 1GB

Supervisor Engines	Supervisor Engine 32-PISA (WS-S32-GE-PISA=) (WS-S32-10GE-PISA=)		Supervisor Engine 32 (WS-SUP32-10GE-3B) (WS-SUP32-GE-3B)
Chassis supported	All		All
Hardware Accelerated Network Based Application Recognition (NBAR)	✓ (approx 2 Gbps)		N/A
Hardware Accelerated Flexible Packet Matching (FPM)	✓ (approx 2 Gbps)		N/A
Total bandwidth	32 Gbps		32 Gbps
Packets per second	15 Mpps		15 Mpps
MAC addresses supported	64K Max./32K effective		64K Max./32K effective
Routes supported	256,000		256,000
Onboard Memory (DRAM)	Up to 1GB		Up to 1 GB

Supervisor 720 Scalability (Unicast)				
Supervisor	WS-SUP720-3B	WS-SUP720-3BXL	VS-S720-10G-3C	VS-S720-10G-3CXL
IPv4 Routing	Up to 400 Mpps in hardware	Up to 400 Mpps in hardware	Up to 450 Mpps in hardware	Up to 450 Mpps in hardware
IPv6 Routing	Up to 200 Mpps in hardware	Up to 200 Mpps in hardware	Up to 225 Mpps in hardware	Up to 225 Mpps in hardware
IPv4 Routes	256,000	1,000,000	256,000	1,000,000
IPv6 Routes	128,000	500,000	128,000	500,000

1. Redundant mode

Selected Part Numbers and Ordering Information

Catalyst 6500 Chassis	
WS-C6503-E	Cisco Catalyst 6500 Enhanced 3-slot chassis,4RU,no PS, no Fan Tray

WS-C6504-E	Cisco Catalyst 6500 Enhanced 4-slot chassis,5RU,no PS, no Fan Tray
WS-C6506-E	Cisco Catalyst 6500 Enhanced 6-slot chassis,12RU,no PS, no Fan Tray
WS-C6509-E	Cisco Catalyst 6500 Enhanced 9-slot chassis,15RU,no PS, no Fan Tray
WS-C6509-V-E	Cisco Catalyst 6500 Enhanced 9-slot Chassis (Vertical), No PS, Fan
WS-C6513	Cisco Catalyst 6500 13-slot chassis,20RU,no PS, no Fan Tray
Virtual Switching Supervisor Engine 720-10G Bundles	
VS-C6504E-S720-10G	Cisco Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY; NO VSS
VS-C6506E-S720-10G	Cisco Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY; NO VSS
VS-C6509E-S720-10G	Cisco Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY; NO VSS
VS-C6509VE-S720-10G	Cisco Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY; NO VSS
VS-C6513-S720-10G	Cisco Catalyst Chassis+Fan Tray+Sup720-10G; IP Base ONLY; NO VSS
Supervisor Engine 32 Bundles	
WS-C6503E-S32-10GE	Cisco Catalyst 6503E chassis, WS-SUP32-10GE-3B, Fan Tray (req,P/S)
WS-C6504E-S32-10GE	Cisco Catalyst 6504-E Chassis + Fan Tray + Sup32-10GE
WS-C6506E-S32-10GE	Cisco Catalyst 6506E chassis, WS-SUP32-10GE-3B, Fan Tray (req,P/S)
WS-C6509E-S32-10GE	Cisco Catalyst 6509E chassis, WS-SUP32-10GE-3B, Fan Tray (req,P/S)
WS-C6513-S32-10GE	Cisco Catalyst 6513 chassis, WS-SUP32-10GE-3B, Fan Tray (req, P/S)
WS-C6503E-S32-GE	Cisco Catalyst 6503E, WS-SUP32-GE-3B, Fan Tray (req. P/S)
WS-C6504E-S32-GE	Cisco 6504-E Chassis + Fan Tray + Sup32-GE
WS-C6506E-S32-GE	Cisco Catalyst 6506E, WS-SUP32-GE-3B, Fan Tray (req. P/S)
WS-C6509E-S32-GE	Cisco Catalyst 6509E, WS-SUP32-GE-3B, Fan Tray (req. P/S)
WS-C6513-S32-GE	Cisco Catalyst 6513, WS-SUP32-GE-3B, Fan Tray (req. P/S)
Advanced Technology Bundles	
DSN09E-VS720-AC-K9	Cisco Catalyst 6509E Data Center Services Bundle (6509-E Chassis, Dual-AC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
DSN09E-VS720-DC-K9	Cisco Catalyst 6509E Data Center Services Bundle (6509-E Chassis, Dual-DC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
DSN06E-VS720-AC-K9	Cisco Catalyst 6506E Data Center Services Bundle (6506-E Chassis, Dual-AC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
DSN06E-VS720-DC-K9	Cisco Catalyst 6506E Data Center Services Bundle (6506-E Chassis, Dual-DC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
DSN9VE-VS720-AC-K9	Cisco Catalyst 6509VE Data Center Services Bundle (6509-VE Chassis, Dual-AC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
DSN9VE-VS720-DC-K9	Cisco Catalyst 6509VE Data Center Services Bundle (6509-VE Chassis, Dual-DC pwr, Sup720-10G, 3x FWSM, 1x ACE, 6704)
WS-C6504-E-VPN+-K9	Cisco Catalyst 6504E IPSec VPN SPA Security System
WS-C6506-E-VPN+-K9	Cisco Catalyst 6506E IPSec VPN SPA Security System
WS-C6509-E-VPN+-K9	Cisco Catalyst 6509E IPSec VPN SPA Security System
WS-C6513-VPN+-K9	Cisco Catalyst 6513 IPSec VPN SPA Security System
WS-C6503-E-FWM-K9	Cisco Catalyst 6503E Firewall Security System
WS-C6506-E-FWM-K9	Cisco Catalyst 6506E Firewall Security System
WS-C6509-E-FWM-K9	Cisco Catalyst 6509E Firewall Security System
WS-C6513-FWM-K9	Cisco Catalyst 6513 Firewall Security System
WS-C6504E-ACE20-K9	Cisco ACE20 6504E Bundle with 4 Gbps Throughput License
WS-C6509E-ACE20-K9	Cisco ACE20 6509E Bundle with 8 Gbps Throughput License
WS-C6504-E-WISM	Cisco Catalyst 6504-E WiSM bundle (SUP720-3B,WiSM, Fan Tray, (2) P/S)
WS-C6509-E-WISM	Cisco Catalyst 6509-E WiSM bundle (SUP720-3B,WiSM, Fan Tray, no P/S)

For More Information

Cisco Catalyst 4500 Series Switches

The Cisco Catalyst 4500 Series is a medium-density modular switch delivering robust intelligent services for unified communications deployments. The simple centralized architecture, media flexibility, and scalability of the Cisco Catalyst 4500 Series deliver maximum investment protection with backward and forward compatibility across several generations dating back to 1999, maximizing return on investment while minimizing recurring operational expenses.

The Cisco Catalyst 4500 E-Series is a high-performance next-generation extension of the Cisco Catalyst 4500 Series Switches. It builds on Cisco Catalyst 4500 Series architecture offering higher services, features, flexibility, and performance while continuing to maximize investment protection across the Cisco Catalyst 4500 Series Switches.

The Cisco Catalyst 4500 Series extends intelligence and operational simplicity to the network edge (wiring closet and FTTH access) for unified communications with intelligent network services, sophisticated quality of service (QoS), predictable performance, advanced security, up to 30 watts of PoE, up to 384 ports, and comprehensive management features. The Cisco Catalyst 4500 Series delivers high levels of integrated resiliency in both hardware and software, minimizing costly downtime for both planned and unplanned network outages and helping maximize workforce productivity.

The Cisco Catalyst 4500 Series Supervisor Engines Supervisor 6-E and Supervisor 6L-E are high performance intelligent modular access switches for unified communications networks.

Ideal for Companies That Need These Features

Supervisors

Cisco Catalyst 4500 Series Supervisor Engine 6L-E
- High performance Layer 2, 3, and 4 switching
- Centralized 280-Gbps switching capacity (225 millions of packets per second throughput)
- Advanced QoS support with up to eight queues per port, dynamic queue sizing, and hierarchical policing to provide flexibility and control
- Flexibility to operate at 6 or 24 Gbps per line-card slot
- Dual 10 Gigabit Ethernet uplinks (X2 optics)
- Support for line-rate forwarding for IPv6 packets
- Dynamic hardware forwarding table allocations for ease of IPv4-to-IPv6 migration

Cisco Catalyst 4500 Series Supervisor Engine 6-E
- Designed for high-density enterprise wiring closets, medium-sized core, distribution, and branch-office collapsed core
- High-performance Layer 2, 3, and 4 switching (320-Gbps capacity, 250 mpps)
- Enables 24 Gbps per slot when deployed in the Cisco Catalyst 4500 E-Series chassis
- High-performance IPv6 in hardware
- Optimized for simultaneous IPv4 and IPv6 deployments or migration
- Supports classic and E-Series chassis
- Simultaneously supports classic and E-Series line cards in same chassis
- Supports twin gigabit converter module
- Supports dynamic QoS, security, and IPv6 resource optimization

Cisco Catalyst 4500 Supervisor Engine V-10GE
- Designed for high-density enterprise wiring closets and branch-office collapsed core;
- Supports high-performance Layer 2, 3, and 4 switching
- Compatibility with future versions with two 10-Gigabit Ethernet and four Gigabit Ethernet uplinks
- Supports integrated NetFlow
- Supports all Cisco Catalyst 4500 chassis

Chassis

Cisco Catalyst 4510R-E
- High performance, port density, high availability (ISSU) through redundant supervisor engines (when these features are crucial to customer success)
- Support for both classic and E-Series line cards
- Port density up to three hundred eighty-eight 10/100 (RJ-45 with or without PoE), 10/100 (RJ-21 with or without PoE), 100BASE-FX, 100BASE-LX-10, 100BASE-BX-D, 1000BASE-X, 10/100/1000BASE-T (with or without PoE), or up to 34 10-Gigabit Ethernet ports
- Up to 320-Gbps nonblocking switching fabric, 250-Mpps forwarding rate using the Supervisor Engine 6-E, or up to 24-Gbps per-slot bandwidth except the last 3 slots, which provide 6 Gbps per slot

Cisco Catalyst 4507R-E
- Network resiliency and high availability (ISSU) through redundant supervisor engines (when these features are crucial to customer success)
- Support for both classic and E-Series line cards
- Port density up to two hundred forty-four 10/100 (RJ-45 with or without PoE), 10/100 (RJ-21 with or without PoE), 100BASE-FX, 100BASE-LX-10, 100BASE-BX-D, 1000BASE-X, 10/100/1000BASE-T (with or without PoE), or up to 34 10-Gigabit Ethernet ports
- Up to 280-Gbps, 210-Mpps, or 24-Gbps per-slot bandwidth when used with the Supervisor Engine 6-E, and Supervisor Engine 6L-E

Cisco Catalyst 4506-E	• Port density up to two hundred forty-four 10/100 (RJ-45 with or without PoE), 10/100 (RJ-21 with or without PoE), 100BASE-FX, 100BASE-LX-10, 100BASE-BX-D, 1000BASE-X, 10/100/ 1000BASE-T (with or without PoE), or thirty-two 10-Gigabit Ethernet ports • Support for both classic and E-Series line cards • Support for up to 280-Gbps, 210-Mpps, or 24-Gbps per-slot bandwidth when used with the Supervisor Engine 6-E, and Supervisor Engine 6L-E
Cisco Catalyst 4503-E	• Port density up to one hundred eight 10/100 (RJ-45 with or without PoE), 10/100 (RJ-21 with or without PoE), 100BASE-FX, 100BASE-LX-10, 100BASE-BX-D, 1000BASE-X, 10/100/1000BASE-T (with or without PoE), or 14 10-Gigabit Ethernet ports • Support for both classic and E-Series line cards • Up to 136-Gbps, 102-Mpps, or 24-Gbps per-slot bandwidth when used with the Supervisor Engine 6-E, and Supervisor Engine 6L-E

Note: Compatible sparing between Cisco Catalyst 4510R-E, Catalyst 4507R-E, Catalyst 4506-E, and Catalyst 4503-E chassis provides investment protection with common supervisor engines, power supplies, and switching line cards.

Key Features and Benefits

- Investment protection—Evolutionary centralized modular architecture provides maximum backward compatibility across several generations of Cisco Catalyst 4500 Series Switches. Upgrading all system ports to higher-level functions and features are easy with a simple supervisor-engine upgrade.
- Flexible options—Modular 3- and 6-slot single supervisor chassis and 7- and 10-slot redundant supervisor chassis support numerous connectivity and service configurations with 24-GB per-slot capacity.
- Nonstop communications—Redundant supervisor engines offer In Service Software Upgrade (ISSU) and Nonstop Forwarding/Stateful Switchover (NSF/SSO) with 50-ms failover; redundant power supplies offer power circuit redundancy; and hot-swappable fan trays are designed with redundant fans.
- Comprehensive security—These switches support integrated Cisco Network Admission Control (NAC) and 802.1x, hardware-based Control Plane Policing (CoPP); integrated man-in-the-middle and denial-of-service (DoS) attack mitigation; NetFlow; access control lists (ACLs), and Secure Shell (SSH) Protocol.
- Comprehensive management—These switches support CiscoWorks, Cisco Network Assistant, Remote Switched Port Analyzer (RSPAN), Cisco IOS Embedded Event Manager (EEM), IPSLA, Time Domain Reflectometer (TDR), and NetFlow.
- High port density—These switches offer up to 384 Fast Ethernet or Gigabit Ethernet ports or thirty-four 10-Gigabit Ethernet ports.
- IP communications—Cisco prestandard, up to 15.4w IEEE 802.3af support, 20w for 802.11n support and up to 30 watts per port for future applications
- Cisco EnergyWise on the Catalyst 4500 and Catalyst 4500 E-Series—Allows IT operations and facilities to measure and fine-tune power usage to realize significant cost savings. EnergyWise focuses on reducing power utilization on all devices connected to a Cisco network ranging from PoE devices such as IP phones and wireless access points to integration with IP-enabled building and lighting controllers. For more information, see the following URL: http://www.cisco.com/en/US/products/ps10195/index.html.
- Cisco Catalyst 4500 E-Series and Cisco Catalyst 4500 switches extend the warranty from the previously offered 90-day warranty to a limited lifetime warranty (LLW). For more information, see the following URL: http://www.cisco.com/en/US/prod/collateral/switches/ps5718/ps4324/product_bulletin_c25-533284.html.

Specifications

4500 E-Series Chassis	Cisco 4503-E	Cisco 4506-E	Cisco 4507R-E	Cisco 4510R-E
Slots	3	6	7	10
Redundant Supervisor Option	No	No	Yes	Yes
Gigabit Ethernet GBIC/SFP density	104	244	248 with Dual Sup 6-Es and 4xTwinGigs	392 with Dual Sup 6-Es and 4xTwinGigs
10 GE X2 port density	14	32	34	34
10/100/1000 density	96	240	240	384
10/100 density	96	240	240	384
100BASE-FX, LX-10, BX-D density	96	240	240	384
Rack Unit (RU)	7	10	11	14
Backplane Capacity using Supervisor 6-E	136 Gbps	280 Gbps	280 Gbps	320 Gbps
Stackable	No	No	No	No
Enhanced Power Over Ethernet (ePoE) Support	Up to 20W of PoE – 37 ports can be enabled @ 20W[1]	Up to 20W of PoE – 37 ports can be enabled @ 20W[1]	Up to 20W of PoE – 37 ports can be enabled @ 20W[1]	Up to 20W of PoE – 37 ports can be enabled @ 20W [1]
Power Over Ethernet Plus (PoEP) Support (after software upgrade on premium linecard)	Up to 30W of PoE – 25 ports can be enabled @ 30W[1]	Up to 30W of PoE – 25 ports can be enabled @ 30W [1]	Up to 30W of PoE – 25 ports can be enabled @ 30W [1]	Up to 30W of PoE – 25 ports can be enabled @ 30W[1]

1+1 Power Supply Protection	Yes	Yes	Yes	Yes
Hot-Swappable Power Supplies	Yes	Yes	Yes	Yes
Max. watt power consumption				
AC Internal	6000W	6000W	6000W	6000W
AC External with power shelf	1,400 + power shelf = 7,500	1,400 + power shelf = 7,500	1,400 + power shelf = 7,500	1,400 + power shelf = 7,500
DC Internal	1,400 + UPS = 7,500	1,400 + UPS = 7,500	1,400 + UPS = 7,500	1,400 + UPS = 7,500
Max. number of Class 3 devices (15.4W) Max. power supplies				
AC Internal	108	240	240	289
AC External with power shelf	108	240	240	364
DC Internal	108	240	240	384
Unit weight (with Fan Tray)	32.25 lbs. (14.63 kgs.)	40.50 lbs. (18.37 kgs)	44.50 lbs. (20.19 kgs)	54.50 lbs. (24.73 kgs)
Dimensions (H x W x D)	12.25 x 17.31 x 12.50 in (31.12 x 43.97 x 31.70 cm)	17.38 x 17.31 x 12.50 in (44.13 x 43.97 x 31.70 cm)	19.19 x 17.31 x 12.50 in (48.74 x 43.97 x 31.70 cm)	24.35 x 17.31 x 12.50 in. (61.84 x 43.97 x 31.70 cm)

Supervisor Engines	**Supervisor 6-E (WS-X45-Sup6-E)**	**Supervisor 6L-E (WS-X45-Sup6L-E)**	**Supervisor V-10GE (WS-X4516-10GE)**
Chassis supported	All	All	All
Enhanced Layer 3 option	yes	yes	yes
Total bandwidth (Gbps)	320	280	136
Packets per second (Mpps)	250 (IPv4) 125 (IPv6)	225 (IPv4) 110 (IPv6)	102
CPU MHz	1300	800	400
NetFlow	no	no	included
Onboard memory (DRAM)	512 MB upgradable to 1 GB	512 MB upgradable to 1 GB	512 MB
On-Board Flash	128 MB	64 MB 128 MB	64 MB
Compact Flash Support	Yes	Yes	Yes
Switching Capacity & Throughput	320 Gbps, 250 Mpps	280 Gbps, 225 Mpps	136 Gbps, 102 Mpps
Multilayer Switching	Enhanced L2/3/4 Services & Routing	Enhanced L2/3/4 Services & Routing	Enhanced L2/3/4 Services & Routing
(E)IGRP, OSPF, IS:IS, BGP	Yes	Yes	Yes
Supervisor Redundancy	4507R, 4510R, 4507R-E, 4510R-E, WS-C4507R, WS-C4507R+E, and WS-C4510R-E	4507R, 4507R-E, WS-C4507R-E, and WS-C4507R+E	4507R, 4510R, 4507R-E, 4510R-E, WS-C4507R-E, WS-C4507R+E, and WS-C4510R-E.
QoS	8Q/Port, MQC, Dynamic Tx Queue sizing, policing, shaping, congestion avoidance with DBL marking	8Q/Port, MQC, Dynamic Tx Queue sizing, policing, shaping, congestion avoidance with DBL marking	4Q/Port, policing, shaping, congestion avoidance
NetFlow Support	No	No	Yes (Built-in functionality; no Daughter Card Required)
ISL	No	No	No
ACLS	Yes	No	No
IP FIB entries	256K	57K	128K
MAC Addresses	32K Multicast	55K Unicast, 16K Multicast	32K Unicast, 16K Multicast

1. With a maximum 750W per slot

Selected Part Numbers and Ordering Information

Catalyst 4500 E-Series—Chassis, Supervisors	
WS-C4503-E	Cisco Catalyst 4500 E-Series 3-Slot Chassis, fan, no ps
WS-C4506-E	Cisco Catalyst 4500 E-Series 6-Slot Chassis, fan, no ps
WS-C4507R-E	Cisco Catalyst 4500 E-Series 7-Slot Chassis, fan, no ps, redundant supervisor capable
WS-C4510R-E	Cisco Catalyst 4500 E-Series 10-Slot Chassis, fan, no ps, redundant supervisor capable
WS-C4507R+E	Cisco Catalyst 4500 E Series 7-Slot 48G/slot capable chassis, fan, no ps, redundant supervisor capable
WS-C4503E-S6L-48V+	Cisco Catalyst 4503-E PoE Bundle, WS-C4503-E WS-X45-SUP6L-E WS-X4648-RJ45V+E
WS-C4506E-S6L-96V+	Cisco Catalyst 4506-E PoE Bundle WS-C4506-E WS-X45-SUP6L-E 2xWS-X4648-RJ45V+E
WS-C4507RES6L-96V+	Cisco Catalyst 4507R-E PoE Bundle WS-C4507R-E WS-X45-SUP6L-E 2xWS-X4648-RJ45V+E
WS-C4510RES6-96V+	Cisco Catalyst 4510R-E PoE Bundle WS-C4510R-E WS-X45-SUP6-E 2xWS-X4648-RJ45V+E
BN-CF2-SBA-K9	Cisco SBA Wireless Bundle 1x WS-X4624-SFP-E AIR-CT5508-50-K9 and 1x 4507R-E 1x Sup6L-E IP Base
WS-X45-SUP6-E (=)	Cisco Catalyst 4500 E-Series Sup6-E, 2x10GE(X2) w/ Twin Gig
WS-X45-SUP6L-E (=)	Cisco Catalyst 4500 E-Series Sup6-E Lite, 2x10GE(X2) w/ Twin Gig
WS-X4516-10GE (=)	Cisco Catalyst 4500 Supervisor V-10GE, 2x10GE(X2), 4x1GE (SFP)
WS-C4503E-S6L-1300	Cisco Catalyst 4503-E Chassis, One WS-X4648-RJ45V+E, Sup6L-E, 1300W PS
WS-C4506E-S6L-1300	Cisco Catalyst 4506-E Chassis, Two WS-X4648-RJ45V+E, Sup6L-E, 1300W PS
WS-C4506E-S6L-2800	Cisco Catalyst 4506-E Chassis, Two 24G PoEP Line Cards, Sup6L-E, 2800W PS
WS-C4506E-S6L-4200	Cisco Catalyst 4506-E Chassis, Two 24G PoEP Line Cards, Sup6L-E, 4200W PS
Catalyst 4500 and 4500-E Series Line Cards	
WS-X4624-SFP-E (=)	Catalyst 4500 E-Series 24-Port GE (SFP)
WS-X4148-FX-MT	Cisco Catalyst 4500 FE Switching Module, 48-100FX MMF(MTRJ)
WS-X4148-FX-MT=	Cisco Catalyst 4500 FE Switching Module, 48-100FX MMF(MTRJ) (Spare)
WS-X4148-RJ	Cisco Catalyst 4500 10/100 Auto Module, 48-Ports (RJ-45)
WS-X4148-RJ=	Cisco Catalyst 4500 10/100 Auto Module, 48-Ports (RJ-45)(Spare)
WS-X4248-RJ45V	Cisco Catalyst 4500 PoE 802.3af 10/100, 48-Ports (RJ45)
WS-X4248-RJ45V=	Cisco Catalyst 4500 PoE 802.3af10/100, 48-Ports (RJ45) (Spare)
WS-X4306-GB	Cisco Catalyst 4500 Gigabit Ethernet Module, 6-Ports(GBIC)
WS-X4306-GB=	Cisco Catalyst 4500 GigabitEthernet Module, 6-Ports(GBIC) (Spare)
WS-X4548-GB-RJ45	Cisco Catalyst 4500 Enhanced48-Port 10/100/1000 Base-T (RJ-45)
WS-X4548-GB-RJ45=	Cisco Catalyst 4500 Enhanced 48-Port 10/100/1000 Base-T (RJ-45) (spare)
WS-X4548-RJ45V+	Cisco Catalyst 4500 PoE+ Ready10/100/
WS-X4648-RJ45V+E	Cisco Catalyst 4500 E-Series 48-Port PoE+ Ready 10/100/1000(RJ45)
WS-X4548-RJ45V+=	Cisco Catalyst 4500 PoE+ Ready10/100/1000, 48-Port(RJ45)
WS-X4648-RJ45V+E=	Cisco Catalyst 4500 E-Series 48-Port PoE+ Ready 10/100/1000(RJ45)
WS-X4848-RJ45-E	Cisco Catalyst 4500 E-series 48 port 10/100/1000 data card

For More Information

http://www.cisco.com/go/catalyst4500

Cisco Catalyst 4900M Series Switch

The Cisco Catalyst 4900M Switch is a Layer 2–4 fixed-configuration switch that offers high performance for top-of-rack server switching and for small and midsize aggregation deployments. The switch offers high performance, deterministic low latency, full IPv6 hardware forwarding, and media flexibility in a compact 2RU form factor.

Ideal for Companies That Need These Features

Cisco Catalyst 4900M
- Flexibility of Gigabit Ethernet and 10 Gigabit Ethernet ports in the same switch
- Full media flexibility for Gigabit Ethernet and 10-Gigabit Ethernet fiber and copper connectivity
- Wire-speed L2 and L3 switching at speeds less than 3 microseconds
- Up to 24 ports of 10 Gigabit Ethernet and up to 40 ports of Gigabit Ethernet in 2RU with dual power supplies
- Nonblocking Layer 2, 3, and 4 10/100/1000 Gigabit Ethernet, 1000BASE-X, and 10-Gigabit Ethernet performance

Key Features and Benefits

- The Cisco Catalyst 4900M Switch provides packet-size independent low-latency and wire-speed switching.
- The switch provides up to 40 10/100/1000 ports and up to 24 10-Gigabit Ethernet ports (X2).
- The switch has redundant hot-swappable AC or DC power supplies with a hot-swappable fan tray.
- SFP or X2 flexibility on fiber port interfaces covers a wide range of cabling distances.
- Advanced IPv4 and IPv6 Unicast routing protocols (OSPF, EIGRP, IS-IS, and BGPv4) are supported for load balancing and constructing scalable networks.
- Advanced IPv4 and IPv6 Multicast routing protocols (including Multicast Listener Discovery Versions 1 and 2 [MLDv1 and v2] snooping) are supported.
- Intelligent QoS and traffic management, including sharing, shaping, and strict-priority configurations, determine scheduling of egress traffic.

Specifications

Feature	Cisco 4900M
Forwarding bandwidth (Gbps)	320
Maximum stack members	0
Packets per second (Mpps)	250
MAC addresses supported	55,000
Routes supported	256,000
Onboard memory (DRAM)	512MB
10 GbE density	24
Gigabit Ethernet SFP density	32
X2 port density	24
10/100/1000 density	40
10/100 density	0
AC/DC support	AC/DC
Dimensions (H x W x D)	3.5 x 17.2 x 17.9in (89 x 437 x 455 cm)
Unit weight	25 to 39 (11.3 to 17.6kgs)

Selected Part Numbers and Ordering Information

Cisco Catalyst 4900M Switch Series	
WS-C4900M	Cisco Catalyst 4900M 8-port wire speed 10GE base system
WS-X4904-10GE	4 port wire speed 10GE card
WS-X4908-10GE	8 port 2:1 10 GE card
WS-X4920-GB-RJ45	20 port wire speed 10/100/1000 RJ45 card
WS-X4908-10G-RJ45	8 port 2:1 10GE/1GE copper card[1]

| PWR-C49M-1000AC | 4900M AC power supply, 1000 watts |
| PWR-C49M-1000DC | 4900M DC power supply 1000 watts |

1. Expected FCS August 2010

For More Information

http://www.cisco.com/go/catalyst4900

Cisco Catalyst 4900 Series Switches

The Cisco Catalyst 4900 Series Switches are Layer 2–4 fixed-configuration switches that offer high-performance for data centers and branch core. The Cisco Catalyst 4900 Series offers high performance, low latency in a compact 1-rack unit (1RU) form factor.

Ideal for Companies That Need These Features

Cisco Catalyst 4948E
- 48 ports of Gigabit Ethernet switching in 1RU with dual power supplies with four 10-Gigabit Ethernet uplinks
- Nonblocking Layer 2, 3, and 4 10/100/1000 Gigabit Ethernet performance with 10-Gigabit Ethernet uplinks

Cisco Catalyst 4948-10GE
- 48 ports of Gigabit Ethernet switching in 1RU with dual power supplies
- Nonblocking Layer 2, 3, and 4 10/100/1000 Gigabit Ethernet performance with two 10-Gigabit Ethernet uplinks

Cisco Catalyst 4948
- 48 ports of Gigabit Ethernet switching in 1RU with dual power supplies
- Nonblocking Layer 2, 3, and 4 10/100/1000 Gigabit Ethernet performance

Cisco Catalyst 4928-10GE
- 28 ports SFP Gigabit Ethernet switching in 1RU with dual power supplies
- Nonblocking Layer 2, 3, and 4 Gigabit Ethernet performance with 10-Gigabit Ethernet uplinks

Key Features and Benefits

- Low-latency and wire-speed switching
- Redundant internal AC or DC power supplies with a hot-swappable fan tray
- SFP or X2 flexibility on fiber port interfaces covers a wide range of cabling distances
- Optimized to handle microbursts with centralized buffer architecture
- Investment protection through data center design with dual-stack IP Version 4 and 6 (IPv4 and v6) support
- Advanced QoS with eight configurable queues for each port[1]
- Data center optimization with true front-to-back airflow[2]
- Enhanced manageability through bidirectional Switched Port Analyzer (SPAN) and Remote SPAN (RSPAN) sessions
- Packet-rate policer, control plane and packet policer, and dynamic buffer limiting (DBL) for increased security and network control

Specifications

Feature	Cisco 4948	Cisco 4948-10GE	Cisco 4928-10GE	Cisco 4948E
Forwarding bandwidth (Gbps)	96	136	96	179
Maximum stack members	0	0	0	0
Total stack bandwidth (Gbps)	0	0	0	0
Packets per second (Mpps)	72	102	72	131
MAC addresses supported	32,768	55,000	55,000	55,000
Routes supported	32,000	32,000	32,000	57,000
Onboard memory (DRAM)	256 MB	256 MB	256MB	512MB
10 GE density	0	2	2	4
Gigabit Ethernet GBIC/SFP density	4	0	28	48
10 GE XENPAK/X2 port density	0	2	2	4 SFP+

1. Catalyst 4948E feature
2. Catalyst 4948E feature

10/100/1000 density	48	48	0	48
10/100 density	0	0	0	0
Max. watt power consumption	300	300	300	300
AC/DC support	AC/DC	AC/DC	AC/DC	AC/DC
Dimensions (H x W x D)	1.75 x 17.3 x 16.1 in. (4.45 x 43.91 x 40.99 cm.)	1.75 x 17.3 x 16.1 in. (4.45 x 43.91 x 40.99 cm.)	1.75 x 17.3 x 16.1 in. (4.45 x 43.91 x 40.99 cm.)	1.75 x 17.5 x 19.4 in
Unit weight	16.5 (7.48 kgs.)	16.5 (7.48 kgs.)	16.5 (7.48 kgs.)	14 lbs

Selected Part Numbers and Ordering Information

Cisco Catalyst 4900 Switch Series	
WS-C4948E	Cisco Catalyst 4948E 48 10/100/1000(RJ45)+4 SFP+, opt sw, no p/s
WS-C4948E-S	Cisco Catalyst 4948E 48 10/100/1000(RJ45)+4 SFP+, IP Base IOS, AC p/s
WS-C4948E-E	Cisco Catalyst 4948E 48 10/100/1000(RJ45)+4 SFP+, Ent Ser IOS, AC p/s
WS-C4948E-BDL	Green Bundle 10x WS-C4948E
WS-C4948	Cisco Catalyst 4948, optnl sw, 48-Port 10/100/1000+4 SFP, no p/s
WS-C4948-S	Cisco Catalyst 4948, IPB s/w, 48-Port 10/100/1000+4 SFP, 1 AC p/s
WS-C4948-E	Cisco Catalyst 4948, ES s/w, 48-Port 10/100/1000+4 SFP, 1 AC p/s
WS-C4928-10GE	Cisco Catalyst 4928 10 Gigabit Ethernet Switch
WS-C4948-10GE	Cisco Catalyst 4948, optnl sw, 48*10/100/1000+2*10GE(X2), no p/s
WS-C4948-10GE-S	Cisco Catalyst 4948, IPB s/w, 48*10/100/1000+2*10GE(X2), 1 AC p/s
WS-C4948-10GE-E	Cisco Catalyst 4948, ES Image, 48*10/100/1000+2*10GE(X2), 1 AC p/s

For More Information

http://www.cisco.com/go/catalyst4900

Cisco Catalyst 3750-X Series Switch

The Cisco Catalyst 3750-X Series Switches are an enterprise-class line of stackable switches. These switches provide high availability, scalability, security, energy efficiency, and ease of operation with innovative features such as Cisco StackPower technology, IEEE 802.3at Power over Ethernet Plus (PoE+) configurations, optional network modules, redundant power supplies, and Media Access Control Security (MACsec) features.

The Cisco Catalyst 3750-X Series with Cisco StackWise Plus technology provides scalability, ease of management, and investment protection for evolving business needs. The Cisco Catalyst 3750-X enhances productivity by enabling applications such as IP telephony, wireless, and video for the borderless network experience.

Ideal for Companies That Need These Features

Cisco Catalyst 3750-X	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy management of their networks · 1- to 10-Gigabit Ethernet upgradable uplinks · Deployment of IP telephony, wireless, and video
Cisco Catalyst 3750X-24T-L	· Low-density access with switch stacking capability, LAN Base feature set, and two 10-Gigabit Ethernet Small Form-Factor Pluggable Plus (SFP+) uplinks
Cisco Catalyst 3750X-48T-L	· Medium-density access with switch stacking capability, LAN Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-24P-L	· Low-density access with switch stacking capability, LAN Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-48P-L	· Medium-density access with switch stacking capability, LAN Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-48PF-L	· Medium-density access with switch stacking capability, LAN Base feature set, PoE+, two 10-Gigabit Ethernet SFP+ uplinks, and 1100 WAC power supply
Cisco Catalyst 3750X-24T-S	· Low-density access with switch stacking capability, IP Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks

Cisco Catalyst 3750X-48T-S	· Medium-density access with switch stacking capability, IP Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-24P-S	· Low-density access with switch stacking capability, IP Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-48P-S	· Medium-density access with switch stacking capability, IP Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3750X-48PF-S	· Medium-density access with switch stacking capability, IP Base feature set, PoE+, two 10-Gigabit Ethernet SFP+ uplinks, and 1100W AC power supply

Key Features and Benefits

- · 24 and 48 10/100/1000 Power over Ethernet Plus (PoE+) and non-PoE models
- · Optional four Gigabit Ethernet (GE) Small Form-Factor Pluggable (SFP) or two 10 GE SFP+ uplink network modules
- · Industry-first PoE+ with 30W power on all ports in a 1 rack unit (1RU) form factor
- · Dual redundant, modular power supplies and fans
- · Media Access Control Security (MACsec) hardware-based encryption
- · IPv4 and IPv6 routing, Multicast routing, advanced quality of service (QoS), and security features in hardware
- · Enhanced limited lifetime warranty (LLW) with next-business-day (NBD) advance hardware replacement and 90-day access to Cisco Technical Assistance Center (TAC) support
- · Enhanced Cisco EnergyWise technology for operational cost optimization by measuring actual power consumption of the PoE devices, reporting, and reducing energy consumption across the network
- · USB Type-A and Type-B ports for storage and console, respectively, and an out-of-band Ethernet management port
- · Cisco StackPower technology—An innovative feature and industry first for sharing power among stack members
- · Cisco StackWise Plus technology for ease of use and resiliency with 64 Gbps of throughput
- · Investment protection with backward compatibility with all other models of Cisco Catalyst 3750 Series Switches

Specifications

Feature	Cisco 3750X-24T-L	Cisco 3750X-48T-L	Cisco 3750X-24P-L	Cisco 3750X-48P-L	Cisco 3750X-48PF-L
Forwarding bandwidth (Gbps)	160	160	160	160	160
Maximum stack members	9	9	9	9	9
Total stack bandwidth (Gbps)	64	64	64	64	64
Packets per second (Mpps)	65.5	101.2	65.5	101.2	101.2
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	2	2	2	2	2
10 GE SFP+	2	2	2	2	2
10/100/1000 density	24	48	24	48	48
10/100 density	24	48	24	48	48
100BASE-FX density	0	0	0	0	0
Measured 100% Throughput power consumption (without PoE loads, 1 Gps uplink module)	93.5	120.4	99.3	133.9	137.2
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	48
AC/DC support	AC and DC	AC and DC	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 19.5 in (4.45 x 44.5 x 49.5 cm.)

Unit weight	15.6 lbs. (7.1 kgs.)	16.3 lbs. (7.4 kgs.)	15.8 lbs. (7.2 kgs.)	16.5 lbs. (7.5 kgs.)	16.7 lbs. (7.6 kgs.)
	Cisco 3750X-24T-S	**Cisco 3750X-48T-S**	**Cisco 3750X-24P-S**	**Cisco 3750X-48P-S**	**Cisco 3750X-48PF-S**
Forwarding bandwidth (Gbps)	160	160	160	160	160
Maximum stack members	9	9	9	9	9
Total stack bandwidth (Gbps)	64	64	64	64	64
Packets per second (Mpps)	65.5	101.2	65.5	101.2	101.2
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	2	2	2	2	2
10 GE XFP	2	2	2	2	2
10/100/1000 density	24	48	24	48	48
10/100 density	24	48	24	48	48
100BASE-FX density	0	24	0	0	0
Measured 100% Throughput power consumption (without PoE load, I Gbps uplink module)	93.5	120.4	99.3	133.9	137.2
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	48
AC/DC support	AC and DC	AC and DC	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 19.5 in (4.45 x 44.5 x 49.5cm.)
Unit weight	15.6 lbs. (7.1 kgs.)	16.3 lbs. (7.4 kgs.)	15.8 lbs. (7.2 kgs.)	16.5 lbs. (7.5 kgs.)	16.7 lbs. (7.6 kgs.)

Selected Part Numbers and Ordering Information

Catalyst 3750-X Series 10/100/1000 Workgroup Switches[1]	
WS-C3750X-24T-L	Cisco 3750-X stackable 24 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, LAN Base feature set
WS-C3750X-48T-L	Cisco 3750-X stackable 48 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, LAN Base feature set
WS-C3750X-24P-L	Cisco 3750-X stackable 24 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, LAN Base feature set
WS-C3750X-48P-L	Cisco 3750-X stackable 48 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, LAN Base feature set
WS-C3750X-48PF-L	Cisco 3750-X stackable 48 10/100/1000 Ethernet PoE+ ports, with 1100W AC power supply 1 RU, LAN Base feature set
WS-C3750X-24T-S	Cisco 3750-X stackable 24 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, IP Base feature set
WS-C3750X-48T-S	Cisco 3750-X stackable 48 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, IP Base feature set
WS-C3750X-24P-S	Cisco 3750-X stackable 24 10/100/1000 Ethernet PoE+ ports, with 715W AC Power Supply 1 RU, IP Base feature set
WS-C3750X-48P-S	Cisco 3750-X stackable 48 10/100/1000 Ethernet PoE+ ports, with 715W AC Power Supply 1 RU, IP Base feature set
WS-C3750X-48PF-S	Cisco 3750-X stackable 48 10/100/1000 Ethernet PoE+ ports, with 1100W AC power supply 1 RU, LAN Base feature set

1. 1.L=LAN Base; S=IP Base

Cisco Catalyst 3750-E Series Switches

The Cisco Catalyst 3750-E Series with Cisco StackWise Plus technology is an enterprise-class line of stackable wiring-closet switches. Combining 10/100/1000 and Power over Ethernet (PoE) configurations with upgradable 1- to 10-Gigabit Ethernet uplinks, Cisco Catalyst 3750-E Switches help enhance worker productivity by enabling applications such as IP telephony, wireless, and video.

Ideal for Companies That Need These Features

Cisco Catalyst 3750-E	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy management of their networks · 1- to 10-Gigabit Ethernet upgradable uplinks · Deployment of IP telephony, wireless, or Gigabit to the Desktop (GTTD
Cisco Catalyst 3750E-24TD	· Low-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3750E-24PD	· Low-density access with switch stacking capability, Layer 2+ or Layer 3 features, PoE, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3750E-24TD-SD	· Low-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks, DC power
Cisco Catalyst 3750E-48TD	· Medium-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3750E-48TD-SD	· Medium-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks, DC power
Cisco Catalyst 3750E-48PD	· Medium-density access with switch stacking capability, Layer 2+ or Layer 3 features, PoE, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3750E-48PD	· Medium-density access with switch stacking capability, full 15.4W of PoE on every port, Layer 2+ or Layer 3 features, PoE, and one or more 10-Gigabit Ethernet fiber uplinks

Key Features and Benefits

- Cisco StackWise Plus technology—One IP address and one command-line interface (CLI) simplify management. A 64-Gbps resilient architecture speeds convergence, and 1:N stack master redundancy and Layer 3 uplink resilience as well as cross-stack Cisco EtherChannel technology and quality of service (QoS) increase availability. Autoconfiguration and Cisco IOS Software version check and update accelerate deployment, and hot add and delete of switches keep the stack running.
- The Cisco TwinGig Converter Module facilitates migrating uplinks from 1-Gigabit Ethernet (Small Form-Factor Pluggable [SFP]) to 10-Gigabit Ethernet (X2) field-replaceable and -upgradable power supplies and fan tray.
- Availability—The Cisco Catalyst 3750-E Series Switches offer fault tolerance, load balancing, and rapid recovery; increased available bandwidth with Per VLAN Spanning Tree Plus (PVST+) by allowing traffic on redundant link; and sub-100-millisecond convergence with Flexlink technology.
- Power over Ethernet (PoE)—The switches offer 1150W PoE, which simplifies IP telephony, wireless, and video-surveillance deployments. It provides intelligent power-management features and PoE combined with Fast Ethernet or Gigabit Ethernet. Each port may support up to 20W of power.
- Layer 3—Advanced routing protocols such as Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Policy Based Routing (PBR) increase network scale. The switches provide equal cost routing as well as multicast routing such as Protocol Independent Multicast (PIM), Virtual Route Forwarding Lite (VRFLite) to secure traffic, and IPv6.
- Quality of service (QoS)—Traffic shaping smooths a sudden traffic flow outburst without dropping packets; shaped Round Robin guarantees bandwidth to mission-critical applications; and Scavenger Queuing protects against worms overloading resources.
- Management—Cisco Smartports quicken and simplify configuration of advanced Cisco Catalyst intelligent capabilities; express setup facilitates quick and easy setup through a Web interface; and resource templates help tailor switch resources for the application.
- Security—Dynamic Host Configuration Protocol (DHCP) Snooping allows only trusted ports to relay DHCP messages, eliminating rogue DHCP servers. Cisco Network Admission Control (NAC) prevents the propagation of costly worms and viruses; Dynamic ARP Inspection and IP Source Guard prevent against man-in-the-middle attacks; 802.1x and Identity-Based Network Services allow only authorized persons on the network; and port security prevents MAC address flooding attacks.
- Field-replaceable and -upgradable power supplies and fan.
- Cisco TwinGig Converter Module for migrating uplinks from 1 Gigabit Ethernet (Small Form-Factor Pluggable [SFP]) to 10 Gigabit Ethernet (X2).
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 3750E-24TD	Cisco 3750E-24TD-SD	Cisco 3750E-48TD	Cisco 3750E-48TD-SD	Cisco 3750E-24PD	Cisco 3750E-48PD	Cisco 3750E-48PD Full Power
Forwarding bandwidth (Gbps)	128	128	128	128	128	128	128
Maximum stack members	9	9	9	9	9	9	9
Total stack bandwidth (Gbps)	64	64	64	64	64	64	64
Packets per second (Mpps)	6.5	6.5	13.1	13.1	6.5	13.1	6.5
MAC addresses supported	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000	11,000	11,000
10 GE density	2	2	2	2	2	2	2
10 GE XFP	2	2	2	2	2	2	2
10/100/1000 density	24	24	48	48	24	48	48
10/100 density	24	24	48	48	24	48	48
100BASE-FX density	0	0	0	0	0	0	24
Measured 100% Throughput power consumption (with Max. 15.4 W PoE loads)	99	99	149	149	375	375	744
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	-	24	48	48
AC/DC support	AC and DC	DC power	AC and DC	DC power	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in.; (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.1 in; (4.45 x 44.5 x 46.0 cm.)
Unit weight	17.9 lbs. (8.1 kgs.)	17.9 lbs. (8.1 kgs.)	18.3 lbs. (8.3 kgs.)	18.3 lbs. (8.3 kgs.)	18.8 lbs. (8.6 kgs.)	19.2 lbs. (8.75 kgs.)	20.9 lbs. (9.5 kgs.)

Selected Part Numbers and Ordering Information

Catalyst 3750-E Series 10/100/1000 Workgroup Switches[1]	
WS-C3750E-24TD-S	Cisco Catalyst 3750E 24 10/100/1000+2*10GE(X2), 265W, IPB s/w
WS-C3750E-24TD-S D	Cisco Catalyst 3750E 24 10/100/1000+2*10GE(X2), 265W DC, IPB s/w
WS-C3750E-24TD-E	Cisco Catalyst 3750E 24 10/100/1000+2*10GE(X2), 265W, IPS s/w
WS-C3750E-48TD-S	Cisco Catalyst 3750E 48 10/100/1000+2*10GE(X2), 265W, IPB s/w
WS-C3750E-48TD-SD	Cisco Catalyst 3750E 48 10/100/1000+2*10GE(X2), 265W DC, IPB s/w
WS-C3750E-48TD-E	Cisco Catalyst 3750E 48 10/100/1000+2*10GE(X2), 265W, IPS s/w
WS-C3750E-24PD-S	Cisco Catalyst 3750E 24 10/100/1000 PoE+2*10GE(X2), 750W, IPB s/w
WS-C3750E-24PD-E	Cisco Catalyst 3750E 24 10/100/1000 PoE+2*10GE(X2), 750W, IPS s/w
WS-C3750E-48PD-S	Cisco Catalyst 3750E 48 10/100/1000 PoE+2*10GE(X2), 750W, IPB s/w
WS-C3750E-48PD-E	Cisco Catalyst 3750E 48 10/100/1000 PoE+2*10GE(X2), 750W, IPS s/w
WS-C3750E-48PD-SF	Cisco Catalyst 3750E 48 10/100/1000 PoE+2*10GE(X2), 1150W, IPB s/w
WS-C3750E-48PD-EF	Cisco Catalyst 3750E 48 10/100/1000 PoE+2*10GE(X2), 1150W, IPS s/w
Catalyst 3750-E Series Product Activation Keys	
3750E-IPS-LIC-B=	IP Services for 3750-E 24 ports, upgrade from IP Base
3750E48-IPS-LIC-B=	IP Services for 3750-E 48 ports, upgrade from IP Base

1.   S=IP Base; E=IP Services

Cisco Catalyst 3750 Series Switches

The Cisco Catalyst 3750 Series Switch is an innovative product for midsize organizations and enterprise branch offices. Featuring Cisco StackWise technology, the switch improves LAN operating efficiency by combining ease of use and the highest resiliency available for stackable switches.

Ideal for Companies That Need These Features

Cisco Catalyst 3750	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy network management · Deployment of IP telephony, wireless, or Gigabit to the Desktop (GTTD)
Cisco Catalyst 3750V2-24TS	· Low-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3750V2-24PS	· Low-density access with switch stacking capability, Layer 2+ or Layer 3 features, PoE, and one or more fiber uplinks
Cisco Catalyst 3750V2-48TS	· Medium-density access with switch stacking capability, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3750V2-48PS	· Medium-density access with switch stacking capability, Layer 2+ or Layer 3 features, PoE, and one or more fiber uplinks
Cisco Catalyst 3750G-24T	· Low-density Layer 2+ or Layer 3 GTTD or Ethernet aggregation with stacking capability without any uplinks
Cisco Catalyst 3750G-24TS-1U	· Low-density Layer 2+ or Layer 3 GTTD or Ethernet aggregation with switch stacking capability and fiber uplinks in a 1RU form factor
Cisco Catalyst 3750G-24PS	· Low-density Layer 2+ or Layer 3 GTTD or Ethernet aggregation with switch stacking capability, PoE, and fiber uplinks
Cisco Catalyst 3750G-48TS	· Medium-density Layer 2+ or Layer 3 GTTD or Ethernet aggregation with switch stacking capability and fiber uplinks
Cisco Catalyst 3750G-48PS	· Medium-density Layer 2+ or Layer 3 GTTD or Ethernet aggregation with switch stacking capability, PoE, and fiber uplinks
Cisco Catalyst 3750G-12S/SD	· Aggregation of wiring-closet switches with optical connectivity and stacking
Cisco Catalyst 3750-24FS	· Low-density access using 100BASE-FX fiber connections with switch stacking capability, basic Layer 3 features, and one or more fiber uplinks
Cisco Catalyst WS-C3750G-24WS-S25	· Integrated wireless LAN (WLAN) controller functions into Cisco Catalyst 3750G Series Switches (This switch supports 25 access points.)
Cisco Catalyst WS-C3750G-24WS-S50	· Integrated WLAN controller functions into Cisco Catalyst 3750G Series Switches (This switch supports 50 access points.)

Key Features and Benefits

· Cisco StackWise technology—One IP address and one command-line interface (CLI) simplify management. A 32-Gbps resilient architecture speeds convergence, and 1:N stack master redundancy and Layer 3 uplink resilience as well as cross-stack Cisco EtherChannel technology and quality of service (QoS) increase availability. Autoconfiguration and Cisco IOS Software version check and update accelerate deployment, and hot add and delete of switches keep the stack running.

· Availability—These switches offer fault tolerance, load balancing, and rapid recovery; increased available bandwidth with Per VLAN Spanning Tree Plus (PVST+) by allowing traffic on redundant links; and sub-100-millisecond convergence with Flexlink technology.

· Power over Ethernet (PoE)—The switches provide 370W PoE, which simplifies IP telephony, wireless, and video-surveillance deployments; intelligent power-management features; and PoE combined with Fast Ethernet or Gigabit Ethernet.

· Layer 3—The switches support advanced routing protocols such as Open Shortest Path First (OPSF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Policy Based Routing (PBR) to increase network scale; equal cost routing as well as multicast routing such as Protocol Independent Multicast (PIM); Virtual Route Forwarding Lite (VRFLite) to secure traffic; and IPv6.

· QoS—Traffic shaping smooths a sudden traffic flow outburst without dropping packets; shaped Round Robin guarantees bandwidth to mission-critical applications; and Scavenger Queuing protects against worms overloading resources.

· Management—Cisco Smartports quicken and simplify configuration of advanced Cisco Catalyst intelligent capabilities. Express setup facilitates quick and easy setup through a Web interface, and resource templates help tailor switch resources for the application.

- Security—Dynamic Host Configuration Protocol (DHCP) Snooping allows only trusted ports to relay DHCP messages, eliminating rogue DHCP servers. Cisco Network Admission Control (NAC) prevents the propagation of costly worms and viruses; Dynamic ARP Inspection and IP Source Guard prevent against man-in-the-middle attacks; 802.1x and Identity-Based Network Services allow only authorized persons on the network; and port security prevents MAC address flooding attacks.
- Wireless—The Switch models with integrated wireless LAN (WLAN) controller delivers centralized security policies, intrusion protection, RF management, QoS and Layer 3 fast secure roaming for WLANs. This WLAN controller is part of the Cisco Unified Wireless Network.
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 3750V2-24TS	Cisco 3750V2-48TS	Cisco 3750V2-24PS	Cisco 3750V2-48PS	Cisco 3750-24FS
Forwarding bandwidth (Gbps)	32	32	32	32	32
Maximum stack members	9	9	9	9	9
Total stack bandwidth (Gbps)	32	32	32	32	32
Packets per second (Mpps)	6.5	13.1	6.5	13.1	6.5
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	0	0	0	0	0
Gigabit Ethernet GBIC/SFP density	2	4	2	4	2
10 GE XENPAK/X2 port density	0	0	0	0	0
10/100/1000 density	0	0	0	0	0
10/100 density	24	48	24	48	0
100BASE-FX density	0	0	0	0	24
Measured 100% Throughput power consumption (with max. 15.4 W PoE loads)	39	57	444	458	61
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	24	-
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	-
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 17.46 x 11.62 in. (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in. (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in. (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in. (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.5 x 11.8 in. (4.4 x 44.5 x 30.1 cm.)
Unit weight	8.2 lbs. (3.7 kgs.)	9.2 lbs. (4.2 kgs.)	10 lbs. (4.6 kgs.)	11 lbs. (5.0 kgs.)	9.15 lbs. (4.15 kgs.)
Feature	Cisco 3750G-24T	Cisco 3750G-24TS-1U	Cisco 3750G-48TS	Cisco 3750G-24PS	Cisco 3750G-48PS
Forwarding bandwidth (Gbps)	32	32	32	32	32
Maximum stack members	9	9	9	9	9
Total stack bandwidth (Gbps)	32	32	32	32	32
Packets per second (Mpps)	35.7	38.7	38.7	38.7	38.7
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	0	0	0	0	0
Gigabit Ethernet GBIC/SFP density	0	4	4	4	4
10 GE XENPAK/X2 port density	0	0	0	0	0

Feature					
10/100/1000 density	24	24	48	24	48
10/100 density	0	0	0	0	0
100BASE-FX density	0	0	0	0	0
Measured 100% Throughput power consumption (with max. 15.4 W PoE loads)	98	94	152	492	541
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	24	24
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	24	48
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 17.5 x 12.8 in. (4.4 x 44.5 x 32.6 cm.)	1.73 x 17.5 x 14.9 in. (4.4 x 44.5 x 37.8 cm.)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm.)	1.73 x 17.5 x 14.9 in. (4.4 x 44.5 x 37.8 cm.)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm.)
Unit weight	10 lbs. (4.6 kgs.)	12 lbs. (5.5 kgs.)	14 lbs. (6.4 kgs.)	13.5 lbs. (6.1 kgs.)	15.5 lbs. (7.0 kgs.)

Feature	Cisco 3750G-12S	Cisco 3750G-12S-SD	Cisco 3750G-24WS-S25	Cisco 3750G-24WS-S50
Forwarding bandwidth (Gbps)	32	32	32	32
Maximum stack members	9	9	9	9
Total stack bandwidth (Gbps)	32	32	32	32
Packets per second (Mpps)	17.8	17.8	38.7	38.7
MAC addresses supported	12,000	12,000	12,000	12,000
Routes supported	20,000	20,000	11,000	11,000
Onboard memory (DRAM)	128 MB	128 MB	128 MB	128 MB
10 GE density	0	0	0	0
Gigabit Ethernet GBIC/SFP density	12	12	2	2
10 GE XENPAK/X2 port density	0	0	0	0
10/100/1000 density	0	0	24	24
10/100 density	0	0	0	0
Measured 100% Throughput power consumption (with max. 15.4 W PoE loads)	100	72	255	255
AC/DC support	AC only	DC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 17.5 x 12.8 in. (4.4 x 44.5 x 32.6 cm.)	1.73 x 17.5 x 12.8 in. (4.4 x 44.5 x 32.6 cm.)	2.59 x 17.5 x 11.6 in. (6.6 x 44.5 x 29.5 cm)	2.59 x 17.5 x 11.6 in. (6.6 x 44.5 x 29.5 cm)
Unit weight	10 lbs. (4.6 kgs.)	9 lbs. (4.08 kgs.)	21 lbs. (9.5 kgs.)	21 lbs. (9.5 kgs.)

Selected Part Numbers and Ordering Information

Cisco Catalyst 3750 Series Gigabit Ethernet Switches	
WS-C3750G-24T-S	Cisco Catalyst 3750G-24 10/100/1000T Standard Multilayer Image
WS-C3750G-24T-E	Cisco Catalyst 3750G-24 10/100/1000T Enhanced Multilayer Image
WS-C3750G-24TS-S1U	Cisco Catalyst 3750G-24 10/100/1000 + 4 SFP Std Multilayer;1RU
WS-C3750G-24TS-E1U	Cisco Catalyst 3750G-24 10/100/1000 + 4 SFP Enh Multilayer;1RU
WS-C3750G-24PS-S	Cisco Catalyst 3750G-24 10/100/1000T PoE + 4 SFP Standard Image
WS-C3750G-24PS-E	Cisco Catalyst 3750G-24 10/100/1000T PoE + 4 SFP Enhanced Image

SWLC3750-25-K9	IP base w/o crypto with web-based dev mgr
WS-C3750G-48TS-S	Cisco Catalyst 3750G-48 10/100/1000T + 4 SFP Standard Multilayer
WS-C3750G-48TS-E	Cisco Catalyst 3750G-48 10/100/1000T + 4 SFP Enhanced Multilayer
WS-C3750G-48PS-S	Cisco Catalyst 3750G-48 10/100/1000T PoE + 4 SFP Standard Image
WS-C3750G-48PS-E	Cisco Catalyst 3750G-48 10/100/1000T PoE + 4 SFP Enhanced Image
WS-C3750G-12S-S	Cisco Catalyst 3750G-12 SFP Standard Multilayer Image
Wireless LAN	
WS-C3750G-24WS-S25	Cisco Catalyst 3750G Integrated Wireless LAN Controller
WS-C3750G-24WS-S50	Cisco Catalyst 3750G Integrated Wireless LAN Controller
Ethernet Switches	
WS-C3750G-48TS-S	Cisco Catalyst 3750G-48 10/100/1000T + 4 SFP Standard Multilayer
WS-C3750G-48TS-E	Cisco Catalyst 3750G-48 10/100/1000T + 4 SFP Enhanced Multilayer
WS-C3750G-48PS-S	Cisco Catalyst 3750G-48 10/100/1000T PoE + 4 SFP Standard Image
WS-C3750G-48PS-E	Cisco Catalyst 3750G-48 10/100/1000T PoE + 4 SFP Enhanced Image
WS-C3750G-12S-S	Cisco Catalyst 3750G-12 SFP Standard Multilayer Image
Cisco Catalyst 3750 Series 10/100 Workgroup Switches	
WS-C3750-24FS-S	Cisco Catalyst 3750v2-24 100BaseFX + 2 SFP Standard Multilayer Image
WS-C3750V2-24PS-S	Cisco Catalyst 3750v2-24 10/100 PoE + 2 SFP Standard Image
WS-C3750V2-24PS-E	Cisco Catalyst 3750v2-24 10/100 PoE + 2 SFP Enhanced Image
WS-C3750V2-24TS-S	Cisco Catalyst 3750v2-24 10/100 + 2 SFP Standard Multilayer Image
WS-C3750V2-24TS-E	Cisco Catalyst 3750v2-24 10/100 + 2 SFP Enhanced Multilayer Image
WS-C3750V2-48PS-S	Cisco Catalyst 3750v2-48 10/100 PoE + 4 SFP Standard Image
WS-C3750V2-48PS-E	Cisco Catalyst 3750v2-48 10/100 PoE + 4 SFP Enhanced Image
WS-C3750V2-48TS-S	Cisco Catalyst 3750v2-48 10/100 + 4 SFP Standard Multilayer Image
WS-C3750V2-48TS-E	Cisco Catalyst 3750v2-48 10/100 + 4 SFP Enhanced Multilayer Image

For More Information
http://www.cisco.com/go/catalyst3750

Cisco Catalyst 3560-X Series Switches

The Cisco Catalyst 3560-X Series Switches are an enterprise-class line of standalone switches. These switches provide high availability, scalability, security, energy efficiency, and ease of operation with innovative features such as IEEE 802.3at Power over Ethernet Plus (PoE+) configurations, optional network modules, redundant power supplies, and Media Access Control Security (MACsec) features. The Cisco Catalyst 3560-X enhances productivity by enabling applications such as IP telephony, wireless, and video for borderless network experience.

Ideal for Companies That Need These Features

Cisco Catalyst 3560-X Series	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy management of their networks · 1- to 10-Gigabit Ethernet upgradable uplinks · Deployment of IP telephony, wireless, and video
Cisco Catalyst 3560X-24T-L	· Low-density access, LAN Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-48T-L	· Medium-density access, LAN Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-24P-L	· Low-density access, LAN Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-48P-L	· Medium-density access, LAN Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks

Cisco Catalyst 3560X-48PF-L	· Medium-density access, LAN Base feature set, PoE+, two 10-Gigabit Ethernet SFP+ uplinks, and 1100 WAC power supply
Cisco Catalyst 3560X-24T-S	· Low-density access, IP Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-48T-S	· Medium-density access, IP Base feature set, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-24P-S	· Low-density access, IP Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-48P-S	· Medium-density access, IP Base feature set, PoE+, and two 10-Gigabit Ethernet SFP+ uplinks
Cisco Catalyst 3560X-48PF-S	· Medium-density access, IP Base feature set, PoE+, two 10-Gigabit Ethernet SFP+ uplinks, and 1100 WAC power supply

Key Features and Benefits

- 24 and 48 10/100/1000 Power over Ethernet Plus (PoE+) and non-PoE models
- Optional four Gigabit Ethernet (GE) Small Form-Factor Pluggable (SFP) or two 10-GE SFP+ uplink network modules
- Industry-first PoE+ with 30W power on all ports in 1 rack unit (1RU) form factor
- Dual redundant, modular power supplies and fans
- Media Access Control Security (MACsec) hardware-based encryption
- IPv4 and IPv6 routing, Multicast routing, advanced quality of service (QoS), and security features in hardware
- Enhanced limited lifetime warranty (LLW) with next-business-day (NBD) advance hardware replacement and 90-day access to Cisco Technical Assistance Center (TAC) support
- Enhanced Cisco EnergyWise technology for operational cost optimization by measuring actual power consumption of the PoE devices, reporting, and reducing energy consumption across the network
- USB Type-A and Type-B ports for storage and console, respectively, and an out-of-band Ethernet management port.

Specifications

Feature	Cisco 3560X-24T-L	Cisco 3560X-48T-L	Cisco 3560X-24P-L	Cisco 3560X-48P-L	Cisco 3560X-48PF-L
Forwarding bandwidth (Gbps)	160	160	160	160	160
Maximum stack members	0	0	0	0	0
Total stack bandwidth (Gbps)	-	-	-	-	-
Packets per second (Mpps)	65.5	101.2	65.5	101.2	101.2
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	2	2	2	2	2
10 GE SFP+	2	2	2	2	2
10/100/1000 density	24	48	24	48	48
10/100 density	24	48	24	48	48
100BASE-FX density	0	0	0	0	0
Measured 100% Throughput power consumption (without PoE loads, 1 Gps uplink module)	93.5	120.4	99.3	133.9	137.2
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	48
AC/DC support	AC and DC	AC and DC	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 19.5 in (4.45 x 44.5 x 49.5 cm.)
Unit weight	15.4 lbs. (7.0 kgs.)	16.1 lbs. (7.3 kgs.)	15.7 lbs. (7.1 kgs.)	16.4 lbs. (7.4 kgs.)	16.6 lbs. (7.5 kgs.)

	Cisco 3560X-24T-S	Cisco 3560X-48T-S	Cisco 3560X-24P-S	Cisco 3560X-48P-S	Cisco 3560X-48PF-S
Forwarding bandwidth (Gbps)	160	160	160	160	160
Maximum stack members	0	0	0	0	0
Total stack bandwidth (Gbps)	-	-	-	-	-
Packets per second (Mpps)	65.5	101.2	65.5	101.2	101.2
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
10 GE density	2	2	2	2	2
10 GE SFP+	2	2	2	2	2
10/100/1000 density	24	48	24	48	48
10/100 density	24	48	24	48	48
100BASE-FX density	0	24	0	0	0
Measured 100% Throughput power consumption (without PoE load, I Gbps uplink module)	93.5	120.4	99.3	133.9	137.2
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	48
AC/DC support	AC and DC	AC and DC	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 18.0 in (4.45 x 44.5 x 46.0 cm.)	1.75 x 17.5 x 19.5 in (4.45 x 44.5 x 49.5cm.)
Unit weight	15.4 lbs. (7.0 kgs.)	16.1 lbs. (7.3 kgs.)	15.7 lbs. (7.1 kgs.)	16.4 lbs. (7.4 kgs.)	16.6 lbs. (7.5 kgs.)

Selected Part Numbers and Ordering Information

Catalyst 3560-X Series 10/100/1000 Workgroup Switches[1]	
WS-C3560X-24T-L	Cisco 3560-X standalone 24 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, LAN Base feature set
WS-C3560X-48T-L	Cisco 3560-X standalone 48 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, LAN Base feature set
WS-C3560X-24P-L	Cisco 3560-X standalone 24 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, LAN Base feature set
WS-C3560X-48P-L	Cisco 3560-X standalone 48 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, LAN Base feature set
WS-C3560X-48PF-L	Cisco 3560-X standalone 48 10/100/1000 Ethernet PoE+ ports, with 1100W AC power supply 1 RU, LAN Base feature set
WS-C3560X-24T-S	Cisco 3560-X standalone 24 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, IP Base feature set
WS-C3560X-48T-S	Cisco 3560-X standalone 48 10/100/1000 Ethernet ports, with 350W AC power supply 1 RU, IP Base feature set
WS-C3560X-24P-S	Cisco 3560-X standalone 24 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, IP Base feature set
WS-C3560X-48P-S	Cisco 3560-X standalone 48 10/100/1000 Ethernet PoE+ ports, with 715W AC power supply 1 RU, IP Base feature set
WS-C3560X-48PF-S	Cisco 3560-X standalone 48 10/100/1000 Ethernet PoE+ ports, with 1100W AC power supply 1 RU, IP Base feature set

1. 1.L=LAN Base; S=IP Base

For More Information

http://www.cisco.com/go/3560x

Cisco Catalyst 3560-E Series Switches

The Cisco Catalyst 3560-E Series is an enterprise-class line of standalone wiring closet switches that ease the deployment of secure converged applications. Combining 10/100/1000 and Power over Ethernet (PoE) configurations with uplinks that easily upgrade from 1 to 10 Gigabit Ethernet, these switches enhance worker productivity by enabling applications such as IP telephony, wireless, and video.

Ideal for Companies That Need These Features

Cisco Catalyst 3560-E Series	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy network management · Deployment of IP telephony, wireless, or Gigabit to the Desktop (GTTD) · 1- to 10-Gigabit Ethernet upgradable uplinks
Cisco Catalyst 3560E-24TD	· Low-density access, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-24TD-SD	· Low-density access, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks, DC power
Cisco Catalyst 3560E-48TD	· Medium-density access, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-48TD-SD	· Medium-density access, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks, DC power
Cisco Catalyst 3560E-24PD	· Low-density access, PoE, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-48PD	· Medium-density access, PoE, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-48PD Full Power	· Medium-density 10/100/1000 access, full 15.4W of PoE on every port, Layer 2+ or Layer 3 features, PoE, and 1 or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-48TD	· Medium-density access, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-12SD	· Low-density Gigabit Ethernet fiber aggregation, Layer 2+ or Layer 3 features, and one or more 10-Gigabit Ethernet fiber uplinks
Cisco Catalyst 3560E-12D	· Low-density 10-Gigabit Ethernet fiber aggregation and Layer 2+ or Layer 3 features

Key Features and Benefits

- Availability—The Cisco Catalyst 3560-E Series Switches offer fault tolerance, load balancing, and rapid recovery; increased available bandwidth with Per VLAN Spanning Tree Plus (PVST+) by allowing traffic on redundant link; and sub-100-millisecond convergence with Flexlink technology.
- Power over Ethernet (PoE)—The switches offer 1150W PoE, which simplifies IP telephony, wireless, and video-surveillance deployments. It provides intelligent power-management features and PoE combined with Fast Ethernet or Gigabit Ethernet.
- Layer 3—Advanced routing protocols such as Open Shortest Path First (OPSF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Policy Based Routing (PBR) increase network scale. The switches provide equal cost routing as well as multicast routing such as Protocol Independent Multicast (PIM), Virtual Route Forwarding Lite (VRFLite) to secure traffic, and IPv6.
- Quality of service (QoS)—Traffic shaping smooths a sudden traffic flow outburst without dropping packets; shaped Round Robin guarantees bandwidth to mission-critical applications; and Scavenger Queuing protects against worms overloading resources.
- Management—Cisco Smartports quicken and simplify configuration of advanced Cisco Catalyst intelligent capabilities; express setup facilitates quick and easy setup through a Web interface; and resource templates help tailor switch resources for the application.
- Security—Dynamic Host Configuration Protocol (DHCP) Snooping allows only trusted ports to relay DHCP messages, eliminating rogue DHCP servers. Cisco Network Admission Control (NAC) prevents the propagation of costly worms and viruses; Dynamic ARP Inspection and IP Source Guard prevent against man-in-the-middle attacks; 802.1x and Identity-Based Network Services allow only authorized persons on the network; and port security prevents MAC address flooding attacks.
- Field-replaceable and -upgradable power supplies and fan.
- Cisco TwinGig Converter Module for migrating uplinks from 1 Gigabit Ethernet (Small Form-Factor Pluggable [SFP]) to 10 Gigabit Ethernet (X2).
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 3560E-24TD	Cisco 3560E-24TD-SD	Cisco 3560E-48TD	Cisco 3560E-48TD-SD	Cisco 3560E-24PD	Cisco 3560E-48PD	Cisco 3560-48PD Full Power
Forwarding bandwidth (Gbps)	128	128	128	128	128	128	128
Packets per second (Mpps)	65.5	65.5	101.2	101.2	65.5	101.2	101.2
MAC addresses supported	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000	11,000	11,000
Onboard memory (DRAM/Flash)	128/32 MB	128/32 MB	128/32 MB	128/32 MB	128/16 MB	128/16 MB	128/16 MB
10/100/1000 density	24	24	48	48	24	48	48
10/100 density	24	24	48	48	24	48	48
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	-	24	48	48
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	-	24	48	48
AC/DC support	AC and DC	DC power	AC and DC	DC power	AC and DC	AC and DC	AC and DC
Dimensions (H x W x D)	1.73 x 17.5 x 18.1 in. (4.45 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 18.1 in. (4.45 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 18.1 in. (4.5 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 18.1 in. (4.5 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 18.1 in. (4.45 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 18.1 in. (4.45 x 44.5 x 46.0 cm.)	1.73 x 17.5 x 21.7 in. (4.45 x 44.5 x 55.2 cm.)
Unit weight	17.9 lbs. (8.1 kgs.)	17.9 lbs. (8.1 kgs.)	18.8lbs. (8.6kgs.)	18.8lbs. (8.6kgs.)	18.3 lbs. (8.3kgs.)	19.2 lbs. 8.75kgs.)	20.9 lbs. (9.5 kgs.)

Selected Part Numbers and Ordering Information

Cisco Catalyst 3560-E Series 10/100/1000 Workgroup Switches[1]	
WS-C3560E-24TD-S	Cisco Catalyst 3560E 24 10/100/1000+2*10GE(X2),265W,IPB s/w
WS-C3560E-24TD-SD	Cisco Catalyst 3560E 24 10/100/1000+2*10GE(X2),DC,265W,IPB s/w
WS-C3560E-24TD-E	Cisco Catalyst 3560E 24 10/100/1000+2*10GE(X2),265W,IPS s/w
WS-C3560E-48TD-S	Cisco Catalyst 3560E 48 10/100/1000+2*10GE(X2),265W,IPB s/w
WS-C3560E-48TD-SD	Cisco Catalyst 3560E 48 10/100/1000+2*10GE(X2),265W DC,IPB s/w
WS-C3560E-48TD-E	Cisco Catalyst 3560E 48 10/100/1000+2*10GE(X2),265W,IPS s/w
WS-C3560E-24PD-S	Cisco Catalyst 3560E 24 10/100/1000 PoE+2*10GE(X2),750W,IPB s/w
WS-C3560E-24PD-E	Cisco Catalyst 3560E 24 10/100/1000 PoE+2*10GE(X2),750W,IPS s/w
WS-C3560E-48PD-S	Cisco Catalyst 3560E 48 10/100/1000 PoE+2*10GE(X2),750W,IPB s/w
WS-C3560E-48PD-E	Cisco Catalyst 3560E 48 10/100/1000 PoE+2*10GE(X2),750W,IPS s/w
WS-C3560E-48PD-SF	Cisco Catalyst 3560E 48 10/100/1000 PoE+2*10GE(X2),1150W,IPB s/w
WS-C3560E-48PD-EF	Cisco Catalyst 3560E 48 10/100/1000 PoE+2*10GE(X2),1150W,IPS s/w
WS-C3560E-12SD-S	Cisco Catalyst 3560E 12 SFP + 2*10GE(X2), IPB s/w
WS-C3560E-12SD-E	Cisco Catalyst 3560E 12 SFP + 2*10GE(X2), IPS s/w
WS-C3560E-12D-S	Cisco Catalyst 3560E 12*10GE(X2), IPB s/w
WS-C3560E-12D-E	Cisco Catalyst 3560E 12*10GE(X2), IPS s/w
Cisco Catalyst 3560-E Series Product Activation Keys	
3560E-IPSLCB-QTY	IP Services for 3560 E, upgrade from the IP Base Feature Set

1. S=IP Base; E=IP Services

For More Information

http://www.cisco.com/go/catalyst3560E

Cisco Catalyst 3560 Series Switches

The Cisco Catalyst 3560 Series Switches are fixed-configuration switches combining Gigabit Ethernet connectivity and Power over Ethernet (PoE) for small enterprise LAN access and branch office deployments.

Ideal for Companies That Need These Features

Cisco Catalyst 3560 Series	· Enhanced business productivity, resiliency, security, and scalability · Quick deployment and easy network management · Deployments of IP telephony, wireless, or Gigabit to the Desktop (GTTD)
Cisco Catalyst 3560-8PC Compact	· Small density PoE with compact form-factor and no fan for deployments in conference rooms and classrooms
Cisco Catalyst 3560-12PC Compact	· Small density PoE with compact form-factor and no fan for deployments in conference rooms and classrooms
Cisco Catalyst 3560V2-24TS	· Low-density access, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560V2-48TS	· Medium-density access, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560V2-24PS	· Low-density access, PoE, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560V2-48PS	· Medium-density access, PoE, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560V2-24TS-SD	· Low-density access, Layer 2+ or Layer 3 features, and one or more fiber uplinks, DC power supply
Cisco Catalyst 3560G-24TS	· Low-density 10/100/1000 access, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560G-24PS	· Low-density 10/100/1000 access, PoE, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560G-48TS	· Medium-density 10/100/1000 access, Layer 2+ or Layer 3 features, and one or more fiber uplinks
Cisco Catalyst 3560G-48PS	· Medium-density 10/100/1000 access, PoE, Layer 2+ or Layer 3 features, and one or more fiber uplinks

Key Features and Benefits

- Availability—The Cisco Catalyst 3560 Series Switches offer fault tolerance, load balancing, and rapid recovery; increased available bandwidth with Per VLAN Spanning Tree Plus (PVST+) by allowing traffic on redundant links; and sub-100-millisecond convergence with Flexlink technology.
- Power over Ethernet (PoE)—The switches provide 370W PoE, which simplifies IP telephony, wireless, and video-surveillance deployments; intelligent power-management features; and PoE combined with Fast Ethernet or Gigabit Ethernet.
- Layer 3—The switches support advanced routing protocols such as Open Shortest Path First (OPSF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Policy Based Routing (PBR) to increase network scale; equal cost routing as well as multicast routing such as Protocol Independent Multicast (PIM); Virtual Route Forwarding Lite (VRFLite) to secure traffic; and IPv6.
- QoS—Traffic shaping smooths a sudden traffic flow outburst without dropping packets; shaped Round Robin guarantees bandwidth to mission-critical applications; and Scavenger Queuing protects against worms overloading resources.
- Management—Cisco Smartports quicken and simplify configuration of advanced Cisco Catalyst intelligent capabilities. Express setup facilitates quick and easy setup through a Web interface, and resource templates help tailor switch resources for the application.
- Security—Dynamic Host Configuration Protocol (DHCP) Snooping allows only trusted ports to relay DHCP messages, eliminating rogue DHCP servers. Cisco Network Admission Control (NAC) prevents the propagation of costly worms and viruses; Dynamic ARP Inspection and IP Source Guard prevent against man-in-the-middle attacks; 802.1x and Identity-Based Network Services allow only authorized persons on the network; and port security prevents MAC address flooding attacks.
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 3560V2-24TS	Cisco 3560V2-48TS	Cisco 3560V2-24PS	Cisco 3560V2-48PS	Cisco 3560V2-24TS-SD	Cisco 3560G-24TS
Forwarding bandwidth (Gbps)	32	32	32	32	32	32
Packets per second (Mpps)	6.5	13.1	6.5	13.1	6.5	38.7
MAC addresses supported	12,000	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000	11,000
Onboard memory (DRAM/Flash)	128/32 MB	128/32 MB	128/16 MB	128/16 MB	128/32 MB	128/32 MB
Gigabit Ethernet GBIC/SFP density	2	4	2	4	2	4
10/100/1000 density	0	0	0	0	0	24
10/100 density	24	48	24	48	24	0
Measured 100% Throughput power consumption (with Max. 15.4 W PoE loads)	24	41	435	452	24	74
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	24	24	-	-
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	24	48	-	-
AC/DC support	AC only	AC only	AC only	AC only	DC power supply	AC only
Dimensions (H x W x D)	1.73 x 17.46 x 11.62 in.; (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in.; (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in.; (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in.; (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.46 x 11.62 in.; (4.4 x 44.3 x 29.5 cm.)	1.73 x 17.5 x 14.9 in.; (4.4 x 44.5 x 37.8 cm.)
Unit weight	8.2 lbs. (3.7 kgs.)	9 lbs. (4 kgs.)	10 lbs. (4.6 kgs.)	11 lbs. (5 kgs.)	8 lbs. (3.7 kgs.)	12 lbs. (5.4 kgs.)

Feature	Cisco 3560G-48TS	Cisco 3560G-24PS	Cisco 3560G-48PS	Cisco 3560-12PC-S	Cisco 3560-8PC-S
Forwarding bandwidth (Gbps)	32	32	32	32	32
Packets per second (Mpps)	38.7	38.7	38.7	3.2	2.7
MAC addresses supported	12,000	12,000	12,000	12,000	12,000
Routes supported	11,000	11,000	11,000	11,000	11,000
Onboard memory (DRAM/Flash)	128/32 MB	128/32 MB	128/32 MB	128/32 MB	128/32 MB
Gigabit Ethernet GBIC/SFP density	4	4	4	1	1
10/100/1000 density	48	24	48	1	1
10/100 density	0	0	0	12	8
Measured 100% Throughput power consumption (with Max. 15.4 W PoE loads)	124	496	534	145	145
PoE: Max. 802.3af Class 3 devices (15.4W)	-	24	24	8	8
PoE: Max. 802.3af Class 2 devices (7.3W)	-	24	48	12	8
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 17.5 x 16.1 in.; (4.4 x 44.5 x 40.9 cm.)	1.73 x 17.5 x 14.9 in.; (4.4 x 44.5 x 37.8 cm.)	1.73 x 17.5 x 16.1 in.; (4.4 x 44.5 x 40.9 cm.)	1.73 x 10.6 x 9.1 in. (4.4 x 27 x 23 cm)	1.73 x 10.6 x 9.1 in. (4.4 x 27 x 23 cm)
Unit weight	13.5 lbs. (6.1 kgs.)	14 lbs. (6.4 kgs.)	15.5 lbs. (7.0 kgs.)	5 lb (2.3 kg)	5 lb (2.3 kg)

Selected Part Numbers and Ordering Information

Cisco Catalyst 3560 Series 10/100/1000 Workgroup Switches[1]	
WS-C3560G-48PS-S	Cisco Catalyst 3560G-48 10/100/1000T PoE + 4 SFP Standard Image
WS-C3560G-48PS-E	Cisco Catalyst 3560G-48 10/100/1000T PoE + 4 SFP Enhanced Image
WS-C3560G-24PS-S	Cisco Catalyst 3560G-24 10/100/1000T PoE + 4 SFP Standard Image
WS-C3560G-24PS-E	Cisco Catalyst 3560G-24 10/100/1000T PoE + 4 SFP Enhanced Image
WS-C3560G-48TS-S	Cisco Catalyst 3560G-48 10/100/1000T + 4 SFP Standard Image
WS-C3560G-48TS-E	Cisco Catalyst 3560G-48 10/100/1000T + 4 SFP Enhanced Image
WS-C3560G-24TS-S	Cisco Catalyst 3560G-24 10/100/1000T + 4 SFP Standard Image
WS-C3560G-24TS-E	Cisco Catalyst 3560G-24 10/100/1000T + 4 SFP Enhanced Image
Cisco Catalyst 3560V2 Series 10/100 Workgroup Switches	
WS-C3560V2-48PS-S	Cisco Catalyst 3560G v2-48 10/100 PoE + 4 SFP Standard Image
WS-C3560V2-48PS-E	Cisco Catalyst 3560G v2-48 10/100 PoE + 4 SFP Enhanced Image
WS-C3560V2-24PS-S	Cisco Catalyst 3560G v2-24 10/100 PoE + 2 SFP Standard Image
WS-C3560V2-24PS-E	Cisco Catalyst 3560G v2-24 10/100 PoE + 2 SFP Enhanced Image
WS-C3560V2-48TS-S	Cisco Catalyst 3560G v2-48 10/100 + 4 SFP Standard Image
WS-C3560V2-48TS-E	Cisco Catalyst 3560G v2-48 10/100 + 4 SFP Enhanced Image
WS-C3560V2-24TS-S	Cisco Catalyst 3560G v2-24 10/100 + 2 SFP Standard Image
WS-C3560V2-24TS-E	Cisco Catalyst 3560G v2-24 10/100 + 2 SFP Enhanced Image
WS-C3560V2-24TS-SD	Cisco Catalyst 3560G v2-24 10/100 + 2 SFP Standard Image with DC power supply
WS-C3560-8PC-S	Cisco Catalyst 3560G-8 10/100 PoE + 1 1000BT or 1 SFP Standard Image
WS-C3560-12PC-S	Cisco Catalyst 3560G-12 10/100 PoE + 1 1000BT or 1 SFP Standard Image

1.   S=IP Base; E=IP Services

For More Information
http://www.cisco.com/go/catalyst3560

Cisco Catalyst 2975 Series Switches

The Cisco Catalyst 2975 is a 48-port Layer 2+ 10/100/1000BASE-T Power over Ethernet (PoE) stackable switch. It offers connectivity with intelligent LAN services for small enterprise LAN access or branch-office environments. The switch features the enhanced Layer 2+ LAN Base Cisco IOS Software to deliver enhanced integrated security, quality of service (QoS), and availability to enable new converged applications. The Cisco Catalyst 2975 Switch is ideal for situations where space is a constraint.

Ideal for Companies That Need These Features

Cisco Catalyst 2975
- Intelligent services at entry-level functions
- QoS, enhanced security, and availability
- Easy deployment and network management

Key Features and Benefits

- Stacking —One IP address and one command-line interface (CLI) simplify management. A 32-Gbps resilient architecture speeds convergence, and 1:N stack master redundancy as well as cross-stack Cisco EtherChannel technology and quality of service (QoS) increase availability. Autoconfiguration and Cisco IOS Software version check and update accelerate deployment, and hot add and delete of switches keep the stack running.
- Power over Ethernet (PoE)—The Cisco Catalyst 2975 Switch offers 370W PoE, which simplifies IP telephony, wireless, and video surveillance deployments. It also provides intelligent power-management features.
- Security—Network security is enabled through a wide range of authentication methods, data-encryption technologies, and Cisco Network Admission Control (NAC) based on users, ports, and MAC addresses.
- Availability—The 802.1S/W standard facilitates standards-based fault tolerance, load balancing, and rapid recovery. Flexlink provides sub-100-msec convergence, and Per-VLAN Spanning Tree Plus (PVST+) increases available bandwidth by allowing traffic on redundant links.
- Quality of service (QoS)—Network control and bandwidth optimization are achieved through advanced QoS, granular rate limiting, access control lists (ACLs), and multicast services.

- Management—Cisco Network Assistant is a GUI-based management tool for configuration management and troubleshooting. Cisco Smartports automatically detects connected Cisco devices and recommends preset configurations for the switch port connected to the device.
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 2975-48PS-L
Forwarding bandwidth (Gbps)	32
Packets per second (Mpps)	3.8
MAC addresses supported	8,000
Onboard memory (DRAM)	128 MB
Gigabit Ethernet GBIC/SFP density	4
10/100/1000 density	48
100BASE-FX density	0
PoE: Max. 802.3af Class 3 devices	24
PoE: Max. 802.3af Class 2 devices	48
Measured 100% Throughput power consumption (with Max. PoE loads)	560W
AC/DC support	AC only
Dimensions (H x W x D)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm)
Unit weight	15.5 lbs. (7.0 kgs.)

Selected Part Numbers and Ordering Information

WS-C2975GS-48PS-L	48 Ethernet 10/100/1000 PoE ports and 4 SFP uplinks Two high speed stacking ports with 50cm stacking cable 1 RU fixed-configuration with rack mount included LAN Base Image installed
WS-C2975GS-96PS-LM	Two units of the WS-C2975GS-48PS-L for 96 access ports

For More Information

http://www.cisco.com/go/catalyst2975

Cisco Catalyst 2960-S Series Switches

The Cisco Catalyst 2960-S Series Switches are the leading Layer 2 edge switches providing improved ease of use, highly secure business operations, improved sustainability, and a borderless network experience. These switches include new Cisco FlexStack switch stacking capability with 1- and 10-Gigabit Ethernet connectivity and Power over Ethernet Plus (PoE+).

The Cisco Catalyst 2960-S Series Switches are fixed-configuration access switches designed for enterprise, midmarket, and branch-office networks to provide lower total cost of ownership.

Ideal for Companies That Need These Features

Cisco Catalyst 2960-S
- Intelligent services at entry-level functions
- Quality of service (QoS), enhanced security, and availability
- Easy deployment and network management
- Small footprint

Key Features and Benefits

- 1- and 10-Gigabit Ethernet uplink flexibility with Small Form-Factor Pluggable Plus (SFP+), providing business continuity and fast transition to 10 Gigabit Ethernet
- 24 or 48 ports of Gigabit Ethernet desktop connectivity
- Cisco FlexStack stacking module with 40 Gbps of throughput, allowing ease of operation with single configuration and simplified switch upgrade
- Power over Ethernet Plus (PoE+) with up to 30W per port that allows you to support the latest PoE+ capable devices

- Power-supply options, with 740W or 370W fixed power supplies for PoE+ switches
- USB storage for file backup, distribution, and simplified operations
- A wide range of software features to provide ease of operation, highly secure business operations, sustainability, and a borderless network experience
- Limited lifetime hardware warranty, including next-business-day replacement with 90-day service and support

Specifications

Feature	Cisco 2960S-48FPD-L	Cisco 2960S-48LPD-L	Cisco 2960S-24PD-L	Cisco 2960S-48TD-L	Cisco 2960S-24TD-L	Cisco 2960S-48FPS-L
Forwarding bandwidth (Gbps)	88	88	88	88	88	88
Maximum Stack Members	4	4	4	4	4	4
Total Bandwidth of Stack (Gbps)	40	40	40	40	40	40
Packets per second (Mpps)	101.2	101.2	65.5	101.2	65.5	77.4
MAC addresses supported	8,000	8,000	8,000	8,000	8,000	8000
Onboard memory (DRAM)	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB
10 GE SFP+ Density	2	2	2	2	2	0
Gigabit Ethernet GBIC/SFP density	1	1	1	1	1	4
10/100/1000 density	48	48	24	48	24	48
10/100 density	-	-	-	-	-	-
100BASE-FX density	-	-	-	-	-	-
PoE: Max. 802.3af Class 3 devices (15.4W)	48	48	24	0	0	48
PoE: Max. 802.3af Class 2 devices (7.3W)	48	48	24	0	0	48
Measured 100% Throughput power consumption (Watts)	81	71	55	55	39	79
AC/DC support	AC only	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)
Unit weight	13 lbs. (5.9 kgs.)	12.5 lbs. (5.7 kgs.)	12.5 lbs. (5.7 kgs)	9.5 lbs. (4.3 kgs.)	9.5 lbs. (4.3 Kgs.)	13 lbs. (5.9 kgs.)
Feature	**Cisco 2960S-48LPS-L**	**Cisco 2960S-24PS-L**	**Cisco 2960S-48TS-L**	**Cisco 2960S-24TS-L**	**Cisco 2960S-48TS-S**	**Cisco 2960S-24TS-S**
Forwarding bandwidth (Gbps)	88	88	88	88	88	88
Maximum Stack Members	4	4	4	4	4	4
Total Bandwidth of Stack (Gbps)	40	40	40	40	40	40
Packets per second (Mpps)	77.4	41.7	77.4	41.7	74.4	38.7
MAC addresses supported	8,000	8,000	8,000	8,000	8,000	8000
Onboard memory (DRAM)	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB
10 GE SPF+ Density	0	0	0	0	0	0
Gigabit Ethernet GBIC/SFP density	4	4	4	4	2	2
10/100/1000 density	48	24	48	24	48	24

10/100 density	-	-	-	-	-	-
100BASE-FX density	-	-	-	-	-	-
PoE: Max. 802.3af Class 3 devices (15.4W)	48	24	0	0	0	0
PoE: Max. 802.3af Class 2 devices (7.3W)	48	24	0	0	0	0
Measured 100% Throughput power consumption (Watts)	71	55	52	40	53	36
AC/DC support	AC only	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)	1.75 x 17.5 x 15.2 in. (4.5 x 44.5 x 38.6 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)	1.75 x 17.5 x 11.8 in. (4.5 x 44.5 x 29.9 cm.)
Unit weight	12.5 lbs. (5.7 kgs.)	12.5 lbs. (5.7 kgs.)	10.5 lbs. (4.8 kgs.)	10 lbs. (4.5 kgs.)	10.5 lbs. (4.8 kgs.)	10 lbs. (4.5 kgs.)

Selected Part Numbers and Ordering Information

Cisco Catalyst 2960-S Series LAN Base Switches	
WS-C2960S-48FPD-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 PoE+ ports, 740W PoE capacity, 2 10 Gigabit Ethernet or 2 1 Gigabit Ethernet SFP+ uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-48LPD-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 PoE+ ports, 370W PoE capacity, 2 10 Gigabit Ethernet or 2 1 Gigabit Ethernet SFP+ uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-24PD-L	Cisco Catalyst 2960-S 24 Ethernet 10/100/1000 PoE+ ports, 370W PoE capacity, 2 10 Gigabit Ethernet or 2 1 Gigabit Ethernet SFP+ uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-48TD-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 ports, 2 10 Gigabit Ethernet or 2 1 Gigabit Ethernet SFP+ uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-24TD-L	Cisco Catalyst 2960-S 24 Ethernet 10/100/1000 ports, 2 10 Gigabit Ethernet or 2 1 Gigabit Ethernet SFP+ uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-48FPS-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 PoE+ ports, 740W PoE capacity, 4 1 Gigabit Ethernet SFP uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-48LPS-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 PoE+ ports, 370W PoE capacity, 4 1 Gigabit Ethernet SFP uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-24PS-L	Cisco Catalyst 2960-S 24 Ethernet 10/100/1000 PoE+ ports, 370W PoE capacity, 4 1 Gigabit Ethernet SFP uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-48TS-L	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000 ports, 4 1 Gigabit Ethernet SFP uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-C2960S-24TS-L	Cisco Catalyst 2960-S 24 Ethernet 10/100/1000 ports, 4 1 Gigabit Ethernet SFP uplink ports, optional Cisco FlexStack stacking support, LAN Base image
WS-2960S-48TS-S	Cisco Catalyst 2960-S 48 Ethernet 10/100/1000, 2 One Gigabit Ethernet SFP uplink ports, LAN Lite software
WS-C2960S-24TS-S	Cisco Catalyst 2960-S 24 Ethernet 10/100/1000, 2 One Gigabit Ethernet SFP uplink ports, LAN Lite software

For More Information
http://www.cisco.com/go/catalyst2960

Cisco Catalyst 2960 Series Switches

The Cisco Catalyst 2960 Series Switches are fixed-configuration switches offering Fast Ethernet, Power over Ethernet (PoE), and Gigabit Ethernet connectivity with intelligent LAN services for midmarket and branch-office networks. The Cisco Catalyst 2960 LAN Base Switches offer enhanced security, quality of service (QoS), and availability, and the Cisco Catalyst 2960 LAN Lite Switches offer entry-level features with scalable management and easy troubleshooting.

Three compact models offer a small footprint and silent operation yet deliver the enterprise feature set; they are ideal for applications outside the wiring closet such as office workspaces, classrooms, and micro branch offices where space is a premium.

Ideal for Companies That Need These Features

Cisco Catalyst 2960 Series
- Intelligent services at entry-level functions
- QoS, enhanced security, and availability
- Easy deployment and network management
- Small footprint

Key Features and Benefits

- Power over Ethernet (PoE)—Cisco Catalyst 2960 Series Switches offer 370W PoE, which simplifies IP telephony, wireless, and video surveillance deployments. It also provides intelligent power-management features.
- Security—Network security is enabled through a wide range of authentication methods, data-encryption technologies, and Cisco Network Admission Control (NAC) based on users, ports, and MAC addresses.
- Availability—The 802.1S/W standard facilitates standards-based fault tolerance, load balancing, and rapid recovery. Flexlink provides sub-100-msec convergence, and Per-VLAN Spanning Tree Plus (PVST+) increases available bandwidth by allowing traffic on redundant links.
- Quality of service (QoS)—Network control and bandwidth optimization are achieved through advanced QoS, granular rate limiting, access control lists (ACLs), and multicast services.
- Management—Cisco Network Assistant is a GUI-based management tool for configuration management and troubleshooting. Cisco Smartports automatically detects connected Cisco devices and recommends preset configurations for the switch port connected to the device.
- Cisco EnergyWise helps reduce company-wide power consumption and carbon footprint.
- Cisco limited lifetime warranty.

Specifications

Feature	Cisco 2960-8TC-S	Cisco 2960-8TC-L	Cisco 2960-24TC-L	Cisco 2960-24TT-L	Cisco 2960-48TC-L
Forwarding bandwidth (Gbps)	16	16	16	16	16
Packets per second (Mpps)	2.7	2.7	6.6	6.6	10.1
MAC addresses supported	8,000	8,000	8,000	8,000	8,000
Onboard memory (DRAM)	64 MB	64 MB	64 MB	64 MB	64 MB
Gigabit Ethernet GBIC/SFP density	1	1	2	0	2
10/100/1000 density	1	1	2	2	2
10/100 density	8	8	24	24	48
100BASE-FX density	0	0	0	0	0
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	-	-
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	-	-
Measured 100% Throughput power consumption (with Max. PoE loads)	12	12	27	28	39
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 10.6 x 6.4 in. (4.4 x 27 x 16.3 cm)	1.73 x 10.6 x 6.4 in. (4.4 x 27 x 16.3 cm)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)
Unit weight	3 lbs. (1.4 kgs.)	3 lbs. (1.4 kgs.)	8 lbs. (3.6 kgs.)	8 lbs. (3.6 kgs.)	8 lbs. (3.6 kgs.)
Feature	**Cisco 2960G-8TC-L**	**Cisco 2960-48TT-L**	**Cisco 2960G-24TC-L**	**Cisco 2960G-48TC-L**	**Cisco 2960-24-S**
Forwarding bandwidth (Gbps)	32	16	32	32	16
Packets per second (Mpps)	11.9	10.1	35.7	39	3.6
MAC addresses supported	8,000	8,000	8,000	8,000	8,000
Onboard memory (DRAM)	64 MB	64 MB	64 MB	64 MB	64 MB
Gigabit Ethernet GBIC/SFP density	1	0	4	4	0

10/100/1000 density	7	2	24	48	0
10/100 density	0	48	0	0	24
100BASE-FX density	0	0	0	0	0
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	-	-
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	-	-
Measured 100% Throughput power consumption (with Max. PoE loads)	22	42	72	123	22
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 10.6 x 8.1 in. (4.4 x 27 x 20.5 cm)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 12.9 in. (4.4 x 44.5 x 32.8 cm.)	1.73 x 17.5 x 12.9 in. (4.4 x 44.5 x 32.8 cm.)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm)
Unit weight	3 lbs. (1.4 kgs.)	8 lbs. (3.6 kgs.)	10 lbs. (4.5 kgs.)	12 lbs. (5.4 kgs.)	8 lbs. (3.6 kgs.)
Feature	Cisco 2960-24TC-S	Cisco 2960-48TC-S	Cisco 2960-48TT-S	Cisco 2960-48PST-L	Cisco 2960-48PST-S
Forwarding bandwidth (Gbps)	16	16	16	16	16
Packets per second (Mpps)	6.5	10.1	10.1	6.5	13.3
MAC addresses supported	8,000	8,000	8,000	8,000	8,000
Onboard memory (DRAM)	64 MB	64 MB	64 MB	64 MB	64 MB
Gigabit Ethernet GBIC/SFP density	2	2	0	2	2
10/100/1000 density	2	22	2	2	2
10/100 density	24	48	48	48	48
100BASE-FX density	0	0	0	0	0
PoE: Max. 802.3af Class 3 devices (15.4W)	-	-	-	24	24
PoE: Max. 802.3af Class 2 devices (7.3W)	-	-	-	48	48
Measured 100% Throughput power consumption (with Max. PoE loads)	27	39	42	460	460
AC/DC support	AC only	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 12.9 in. (4.4 x 44.5 x 32.8 cm.)	1.73 x 17.5 x 13 in. (4.4 x 44.5 x 33.2 cm.)
Unit weight	8 lbs. (3.6 kgs.)	8 lbs. (3.6 kgs.)	8 lbs (3.6 kgs.)	12 lbs. (5.4 kgs.)	12 lbs. (5.4 kgs.)
Feature	Cisco 2960PD-8TT-L	Cisco 2960-24LT-L	Cisco 2960-24PC-L	Cisco 2960-24LC-S	Cisco 2960-24PC-S
Forwarding bandwidth (Gbps)	16	16	16	16	16
Packets per second (Mpps)	2.7	6.5	6.5	6.5	6.5
MAC addresses supported	8,000	8,000	8,000	8,000	8,000
Onboard memory (DRAM)	64 MB	64 MB	64 MB	64 MB	64 MB
Gigabit Ethernet GBIC/SFP density	0	0	2	2	2
10/100/1000 density	1	2	2	2	2
10/100 density	8	24	24	24	24
100BASE-FX density	0	0	0	0	0
PoE: Max. 802.3af Class 3 devices (15.4W)	0	8	24	8	24

PoE: Max. 802.3af Class 2 devices (7.3W)	0	8	24	8	24
Measured 100% Throughput power consumption (with Max. PoE loads)	11	162	433	162	433
AC/DC support	No internal power supply; DC input	AC only	AC only	AC only	AC only
Dimensions (H x W x D)	1.73 x 10.6 x 8.1 in. (4.4 x 27 x 20.5 cm)	1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm.)	1.73 x 17.5 x 12.9 in. (4.4 x 44.5 x 32.8 cm.)	1.73 x 17.5 x 13 in (4.4 x 44.5 x 33.2 cm)	1.73 x 17.5 x 13 in. (4.4 x 44.5 x 33.2 cm)
Unit weight	3 lbs. (1.4 kgs.)	8 lbs. (3.6 kgs.)	10 lbs. (4.5 kgs.)	10 lbs. (4.5 kgs.)	12 lbs. (5.4 kgs.)

Selected Part Numbers and Ordering Information

Cisco Catalyst 2960 Series LAN Base Switches	
WS-C2960PD-8TT-L	Cisco Catalyst 2960-8 10/100 + 1 1000BT (PoE input) LAN Base Image
WS-C2960-8TC-L	Cisco Catalyst 2960-8 10/100 + 1 T/SFP LAN Base Image
WS-C2960-24PC-L	Cisco Catalyst 2960-24 10/100 PoE + 2T/SFP LAN Base Image
WS-C2960-48PST-L	Cisco Catalyst 2960-48 10/100 PoE + 2 1000BT + 2 SFP LAN Base Image
WS-C2960-24TC-L	Cisco Catalyst 2960-24 10/100 + 2T/SFP LAN Base Image
WS-C2960-24LT-L	Cisco Catalyst 2960-24 10/100 (8 PoE) + 2 1000BT LAN Base Image
WS-C2960-24TT-L	Cisco Catalyst 2960-24 10/100 + 2 1000BT LAN Base Image
WS-C2960-48TC-L	Cisco Catalyst 2960-48 10/100 + 2 T/SFP LAN Base Image
WS-C2960-48TT-L	Cisco Catalyst 2960-48 10/100 + 2 1000BT LAN Base Image
WS-C2960G-8TC-L	Cisco Catalyst 2960G-8 10/100/1000, 1 T/SFP LAN Base Image
WS-C2960G-24TC-L	Cisco Catalyst 2960G-24 10/100/1000, 4 T/SFP LAN Base Image
WS-C2960G-48TC-L	Cisco Catalyst 2960G-48 10/100/1000, 4 T/SFP LAN Base Image
Cisco Catalyst 2960 Series LAN Lite Switches	
WS-C2960-8TC-S	Cisco Catalyst 2960-8 10/100 +1 T/SFP LAN Lite Image
WS-C2960-24-S	Cisco Catalyst 2960-24 10/100 LAN Lite Image
WS-C2960-24TC-S	Cisco Catalyst 2960-24 10/100 + 2T/SFP LAN Lite Image
WS-C2960-48TT-S	Cisco Catalyst 2960-48 10/100 +2 1000BT LAN Lite Image
WS-C2960-48TC-S	Cisco Catalyst 2960-48 10/100 + 2T/SFP LAN Lite Image
WS-C2960-24LC-S	Cisco Catalyst 2960-24 10/100 (8 PoE) + 2T/SFP LAN Lite Image
WS-C2960-24PC-S	Cisco Catalyst 2960-24 10/100 PoE + 2T/SFP LAN Lite Image
WS-C2960-48PST-S	Cisco Catalyst 2960-48 10/100 PoE + 2 1000BT + 2 SFP LAN Lite Image

For More Information

http://www.cisco.com/go/catalyst2960

Cisco ESW 500 Series Switches

The Cisco ESW 500 Series switches are designed to integrate easily with Cisco Small Business products and with the Cisco Smart Business Communications System, to provide a complete data, voice, video, and wireless networking solution for small businesses. These switches are cost-effective, easy to use, and deliver the performance and reliability needed by small businesses. They can be supported by a Cisco partner or by in-house networking support staff.

Key Features and Benefits

- Uses QoS to prioritize delay-sensitive and high-bandwidth network traffic, enhance network performance, and support demanding services, such as real-time voice and video

- Offers enhanced security, including IEEE 802.1X port security to limit access to authorized users and applications, access control lists (ACLs) to restrict access to sensitive portions of the network and guard against attacks, and virtual LANs (VLANs) to segment traffic and workgroups
- Provides Small Form-Factor Pluggable (SFP) expansion slots for fiber-optic or Gigabit Ethernet uplink connectivity
- Supports an optional redundant power supply that provides uninterrupted failover to help ensure continuous operation
- Offers a choice of two simple graphical user interfaces (GUIs) for easier configuration, management, and troubleshooting. (Cisco ESW 500 Series Switches include an embedded web-based configuration utility designed specifically for setting up the switch, and can also be configured with Cisco Configuration Assistant version 2.0 or later for system deployments)

Specifications

Product	Product Number	Copper FE ports	Copper GigE ports	SFP GigE ports	Combo SFP GigE ports[1]	PoE support	PoE ports @7.5 Watts	PoE ports @15.4 Watts
Gigabit Ethernet Switches with PoE	ESW-540-8P	N/A	8	None	1	Yes	8	
	ESW-540-24P	N/A	24	None	4	Yes	24	
Gigabit Ethernet Switches without PoE	ESW-540-24	N/A	24	None	4	No	N/A	N/A
	ESW-540-48	N/A	48	None	4	No	N/A	N/A
Fast Ethernet Switches with PoE	ESW-520-8P	8	None	None	1	Yes	8	4
	ESW-520-24P	24	4	None	2	Yes	24	12
	ESW-520-48P	48	2	2	None	Yes	48	24
Fast Ethernet Switches without PoE	ESW-520-24	24	4	None	2	No	N/A	N/A
	ESW-520-48	48	2	2	None	No	N/A	N/A

1. Combo SFP slots include one 10/100/1000BASET Ethernet port and 1 SFP-based Gigabit Ethernet slot for fiber, 1 port active at a time.

Selected Part Numbers and Ordering Information

ESW-520-8P-K9	Cisco ESW 500 Eight 10/100 PoE ports; 1 expansion port: One 10/100/1000BASE-T and 1 combo* SFP slot
ESW-520-24-K9	Cisco ESW 500 Twenty-four 10/100 Ethernet ports; 4 expansion ports: Two 10/100/1000BASE-T and 2 combo* SFP slots
ESW-520-24P-K9	Cisco ESW 500 24 10/100 PoE ports; 4 expansion ports: Two 10/100/1000BASE-T and 2 combo* SFP slots
ESW-520-48-K9	Cisco ESW 500 Forty-eight 10/100 Ethernet ports; 4 expansion ports: Two 10/100/1000BASE-T and 2 SFP slots
ESW-520-48P-K9	Cisco ESW 500 Forty-eight 10/100 PoE ports; 4 expansion ports: Two 10/100/1000BASE-T and 2 SFP slots
ESW-540-8P-K9	Cisco ESW 500 Eight 10/100/1000 PoE ports; 1 expansion port: One 10/100/1000BASE-T and 1 combo* SFP slot
ESW-540-24-K9	Cisco ESW 500 Twenty-four 10/100/1000 Ethernet ports; 4 expansion ports: 4 combo* SFP slots
ESW-540-24P-K9	Cisco ESW 500 Twenty-four 10/100/1000 PoE ports; 4 expansion ports: 4 combo* SFP slots
ESW-540-48-K9	Cisco ESW 500 Forty-eight 10/100/1000 Ethernet ports; 4 expansion ports: 4 combo* SFP slots

For More Information

http://www.cisco.com/go/esw500

Cisco ME 4900 Series Ethernet Switches

The Cisco ME 4924-10GE Switch (ME4924-10GE) is a Layer 2–4 fixed-configuration switch that offers high-performance for small and midsize aggregation deployments. The switch offers high performance and low latency in a compact 1-rack unit (1RU) form factor.

Ideal for Companies That Need These Features

Cisco ME 4900 Series
- 28 ports of Small Form-Factor Pluggable (SFP) Gigabit Ethernet and 2 ports of 10-Gigabit Ethernet uplinks for switching in 1RU with dual power supplies
- Nonblocking Layer 2, 3, and 4 Gigabit Ethernet performance switch

Key Features and Benefits

- The switch offers low-latency and wire-speed performance in all directions regardless of the number of route entries or Layer 3 and Layer 4 services enabled.
- The switch offers up to 28 SFP Gigabit Ethernet ports and two 10-Gigabit Ethernet ports.
- The switch has redundant hot-swappable AC or DC power supplies with a hot-swappable fan tray.
- SFP on downlink and SFP+ or X2 on uplink flexibility for fiber port interfaces cover a wide range of cabling distances.
- A compact form factor (1RU) allows for deployment in space-constrained areas.
- IP Unicast routing protocols (Open Shortest Path First [OSPF], Enhanced IGRP [EIGRP], Intermediate System-to-Intermediate System [IS-IS], and Border Gateway Protocol Version 4 [BGPv4]) are supported for load balancing and designing scalable networks.
- IP Multicast routing protocols (Protocol Independent Multicast dense mode [PIM-DM], PIM sparse mode [PIM-SM], Source Specific Multicast [SSM], and Internet Group Management Protocol Versions 2 and 3 [IGMPv2 and v3]) are supported.
- Intelligent quality of service (QoS) and traffic management, including sharing, shaping, and strict-priority configurations, determine scheduling of egress traffic.

Specifications

Feature	Cisco ME- 4924-10GE
Forwarding bandwidth (Gbps)	96
Maximum stack members	0
Total stack bandwidth (Gbps)	0
Packets per second (Mpps)	72
MAC addresses supported	55,000
Routes supported	32,000
Onboard memory (DRAM)	256MB
10 GE density	2
Gigabit Ethernet SFP density	28
X2 port density	2
10/100/1000 density	0
10/100 density	0
AC/DC support	AC/DC
Dimensions (H x W x D)	1.75 x 17.3 x 16.1 in. (4.45 x 43.91 x 40.99 cm.)
Unit weight	16.5 (7.48 kgs.)

Selected Part Numbers and Ordering Information

Cisco ME 4900 Switch Series	
ME-4924-10GE	Cisco ME 4924 Switch - 24x 1GE SFP + 4x SFP or 2x 10GE X2, no PS
PWR-C49-300DC	Cisco Catalyst 4900 300-watt DC power supply
PWR-C49-300AC	Cisco Catalyst 4948 300-watt AC power supply

For More Information

http://www.cisco.com/en/US/products/ps7009/index.html

Cisco ME 3800X Series Carrier Ethernet Switch Router

The Cisco ME 3800X Series Carrier Ethernet Switch Router is a converged, full-featured aggregation platform designed specifically for the mobile, business, and residential markets. With low power consumption and high service scale, this 1-rack-unit (1RU) switch router is optimized for small aggregation and remote point-of-presence (POP) applications, making it a highly cost-effective option. The Cisco ME 3800X Series expands the Cisco Carrier Ethernet aggregation portfolio while complementing the Cisco 7600 Series Routers and Cisco ASR 9000 Series Aggregation Services Routers by providing a rich and scalable feature set of Layer 2 and Layer 3 VPN services in a compact package.

Ideal for Companies That Need These Features

Cisco ME 3800X-24FS
- 24 Gigabit Ethernet Small Form-Factor Pluggable (SFP) ports with two 10 Gigabit Ethernet SFP Plus (SFP+) uplinks
- Modular AC and DC power supply
- Small footprint aggregation device

Key Features and Benefits

The Cisco ME 3800X Series helps service providers deliver advanced services for residential broadband, mobile, and Metro Ethernet applications. The highlights of this aggregation platform are as follows:

- Cisco Carrier Ethernet application-specific integrated circuit (ASIC)—Powered by Cisco's Carrier Ethernet ASIC, designed specifically for the needs of service providers, the Cisco ME 3800X Series delivers essential Carrier Ethernet technologies including: hierarchical QoS (H-QoS), Multiprotocol Label Switching (MPLS), and Hierarchical Virtual Private LAN Services (H-VPLS). The ASIC provides line-rate performance and enables advanced services including access control list (ACL) and H-QoS without affecting performance. This Carrier Ethernet ASIC incorporates innovative traffic-management capabilities while providing intelligent packet switching and routing operations.
- Service richness—With the Cisco ME 3800X Series, each service is assigned enhanced QoS and security attributes. The Cisco ME 3800X Series accomplishes advanced per-traffic-class metering and offers bidirectional packets and bytes statistics. The service offering is enhanced with rich operations, administration, and management (OAM) functions including: Layer 2 Connectivity Fault Management (CFM), IP service-level agreement (IP SLA) for Layer 3, and MPLS OAM.
- Service scale—The Cisco ME 3800X Series delivers unmatched service scalability in a 1RU footprint. With support for 256,000 MAC addresses and 8000 bridge domains, this switch router delivers high performance and high scale for point-to-point and multipoint VPN services. A total buffer size of 256 MB is available to provide per-service advanced QoS capabilities. This amount of buffer is required when stringent applications such as financial or video must be protected against the effect of 10- to 1-Gbps speed mismatch. The quantity of statistical counters enables the Cisco ME 3800X Series to provide a high level of service metering and monitoring throughout its range of scale.
- High-performance hardware—The Cisco ME 3800X Series provides two slots for hot-swappable and redundant power supplies. Three fans are integrated into each power supply, providing fan redundancy. High availability is also achieved on the Cisco ME 3800X Series through proactive diagnostic tools including Generic On-Line Diagnostics (GOLD) and Onboard Failure Logging (OBFL). These tools help service providers avoid potential problems before they occur and troubleshoot and diagnose after they are identified.
- Advanced SLAs—Service-aware QoS allows service providers to expand and differentiate their services portfolio with highly advanced and differentiating SLAs. The hierarchical QoS capabilities of the Cisco ME 3800X Series scale to eight queues per service, three levels of scheduling, and buffer volumes capable of accommodating today's most demanding wireline and wireless applications.
- Mobile timing and synchronization services—The Cisco ME 3800X Series provides the timing services required in today's converged access network to support mobile solutions, including Radio Access Network (RAN) applications, and offers integrated support for the Building Integrated Timing Supply (BITS) interface. The Cisco ME 3800X Series also supports synchronous Ethernet (SyncE) and can source network clocking information.

Specifications

Features	Cisco ME 3800X-24FS
Forwarding bandwidth (Gbps)	44 (full duplex)
Packets per second (Mpps)	65
MAC addresses supported	256,000
Routes supported	80,000
GE density	24
10GE density	2
AC/DC support	AC and DC modular and redundant
Dimensions (H x W x D)	1.72-in. x 17.50-in. x 20.33-in. (4.47cm x 44.45cm x 51.6cm)

Unit weight	14.50 lb (6.57 kg)

Selected Part Numbers and Ordering Information

Cisco ME 3800X Series Ethernet Access Switches	
ME-3800X-24FS-M	Cisco ME 3800X 24FS Switch Router
PWR-ME3KX-AC	AC power supply and fan module for ME-3800X-24FS-M
PWR-ME3KX-DC	DC power supply and fan module for ME-3800X-24FS-M
ME-FANTRAY	Fan tray module for ME-3800X-24FS-M. The fan tray is required in the second slot when only one power supply is in the system.
Cisco ME 3800X Series License Options	
METROETHERNETSERVICES	Layer 2 feature license targeted for Layer 2 aggregation · Enhanced QoS, with deep buffers and Hierarchical QoS · Layer 2 features for L2 VPN including EVC framework · Ethernet OAM · Synchronous Ethernet
METROIPSERVICES	Layer 3 feature license targeted for Layer 3 aggregation · IP routing (OSPF, ISIS, EIGRP,BGP) · Layer 3 multicast PIM SM and SSM · Bidirectional Forwarding Detection (BFD) · Multi-VRF CE (VRF lite) with service awareness (ARP, ping, SNMP, syslog, traceroute, FTP, TFTP)
METROAGGREGATIONSERVICES	MPLS feature license targeted for MPLS aggregation · MPLS label imposition/disposition · MPLS Traffic Engineering (TE) and Fast Reroute (FRR) · Ethernet over MPLS (EoMPLS) · MPLS VPN · MPLS OAM
SERVICESCALABILITY	· Enables full scalability for Layer 2, IP routing, and MPLS resources

For More Information
http://www.cisco.com/en/US/products/ps10965/index.html

Cisco ME 6500 Series Ethernet Switches

The Cisco ME 6500 Series Ethernet Switch is a next-generation, fixed-configuration switch built for space-optimized and power-constrained networks. Based on groundbreaking and industry-leading Cisco Catalyst 6500 technology, the Cisco ME 6500 Series cost-effectively delivers on the stringent performance, reliability, and quality-of-service (QoS) requirements of next-generation enterprise WAN edge deployments in a space- and power-optimized 1.5-rack unit (1.5RU) package. The Cisco ME 6500 Series extends the most advanced Multiprotocol Label Switching (MPLS), QoS, multicast, and IPv6 features into Ethernet access and aggregation networks, enabling scalable and service-rich Gigabit Ethernet access for both fiber and copper deployments. It is equipped standard with the Policy Feature Card 3C (PFC3C) and Multilayer Switch Feature Card 2A (MSFC2A).

Ideal for Companies That Need These Features

Cisco ME 6524 with 24 Gigabit Ethernet SFP downlinks
· 24 Gigabit Ethernet Small Form-Factor Pluggable (SFP) downlinks
· 8 Gigabit Ethernet SFP uplinks
· Redundant power supplies (product ID ME-C6524GS-8S)

Cisco ME 6524 with 24 Ethernet 10/100/1000 downlinks
· 24 Ethernet 10/100/1000 downlinks
· 8 Gigabit Ethernet SFP uplinks
· Redundant power supplies (product ID ME-C6524GT-8S)

Key Features and Benefits

· Optimal Gigabit Ethernet density—With up to 32 Gigabit Ethernet ports, all fiber-based, the Cisco ME 6524 can aggregate multiple customers who require Gigabit Ethernet connectivity. The uplink interfaces offer flexible connectivity options by accommodating a broad range of Small Form-Factor Pluggable (SFP) optics, including coarse wavelength-division multiplexing (CWDM) and dense wavelength-division multiplexing (DWDM) optics.
· Flexible network deployment options—The switch features highly scalable Layer 2 services with features such as intelligent 802.1Q tunneling and Layer 2 Protocol Tunneling. The PFC3C daughter card enables in-hardware Multiprotocol Label Switching (MPLS) technologies for MPLS VPNs, and Ethernet over MPLS

(EoMPLS). For service offerings facing an increasing demand for IP address space, hardware-enabled IPv6 protocols provide a scalable and high-performance end-to-end IP service delivery.

- Optimal performance and scalability—The Cisco ME 6524 offers high-performance CPU for Layer 2 and Layer 3 protocol convergence and stability. The switch features scalable Layer 2 switching, IP routing, and MPLS functions in hardware without affecting performance.
- Increased service availability—The Cisco ME 6524 helps ensure service and network uptime with its support of Cisco EtherChannel protocols, rapid convergence protocols such as IEEE 802.1w/802.1s and Flexlink, and gateway load-balancing protocols. In order to minimize service outage due to a power supply failure, the Cisco ME 6524 can be configured with redundant AC or DC or a combination of AC and DC power supplies that are field-replaceable and hot-swappable.
- Integrated security—The Cisco ME 6524 offers a comprehensive set of security features to mitigate denial-of-service (DoS) attacks, to restrict access to the network, and to safeguard network resources. Port- and VLAN-based access control lists (ACLs) restrict the unwanted traffic based on traffic and users; CPU rate limiters and control plane policing (CoPP) limit the amount of traffic that enters the network; Port Security limits the number of MAC addresses that can be learned; Dynamic Host Configuration Protocol (DHCP) Snooping and dynamic Address Resolution Protocol (ARP) inspection prevent threats from the DHCP server, default gateways, or address spoofing attacks. These integrated security features are hardware-enabled so they can be enabled concurrently without jeopardizing the system performance as the traffic level increases.

Specifications

Feature	Cisco ME 6524 GS-8S	Cisco ME 6524 GT-8S
Forwarding bandwidth (Gbps)	32	32
Packets per second (Mpps)	15	15
MAC addresses supported	96,000	96,000
Routes supported IPv4	256,000	256,000
Routes supported IPv6	128,000	128,000
EoMPLS Tunnels	4096	4096
MPLS VPNs	512	512
NetFlow Entries	128,000	128,000
Onboard memory (DRAM/ Flash)	· Switch processor—256 MB of default DRAM upgradeable to 512 MB or 1 GB / 128MB boot flash · Route processor—512 MB of default DRAM upgradeable to 1 GB / 64-MB boot flash	· Switch processor—256 MB of default DRAM upgradeable to 512 MB or 1 GB / 128MB boot flash · Route processor—512 MB of default DRAM upgradeable to 1 GB / 64-MB boot flash
10/100/1000 density		24
Gigabit SFP density	24 Downlinks and 8 Uplinks	8 (Uplinks)
AC/DC support	AC and DC	AC and DC
Dimensions (H x W x D)	2.625 x 17.45 x 19 in. (6.7 x 44.3 x 48.3 cm)	2.625 x 17.45 x 19 in. (6.7 x 44.3 x 48.3 cm)
Unit weight	29.13 lb (13.21 Kg)	29.13 lb (13.21 Kg)

Selected Part Numbers and Ordering Information

Cisco ME 6500 Series Switches[1]	
ME-C6524GS-8S	24 Gigabit Ethernet SFP interfaces + 8 Gigabit Ethernet SFP uplinks, 1 Fan Tray
ME-C6524GT-8S	24 Ethernet 10/100/1000 interfaces + 8 Gigabit Ethernet SFP uplinks, 1 Fan Tray
PWR-400W-DC	400W DC Power Supply for the Cisco ME 6524
PWR-400W-AC	400W AC Power Supply for the Cisco ME 6524
MEM-XCEF720-256M	Default Memory on the Cisco ME 6524 Switch Processor
MEM-XCEF720-512M	512-MB Memory Upgrade Option for the Switch Processor on the Cisco ME 6524
MEM-XCEF720-1GB	1-GB Memory Upgrade Option for the Switch Processor on the Cisco ME 6524
EM-MSFC2-512MB	Default Memory on the Cisco ME 6524 Router Processor
MEM-MSFC3-1GB	1-GB Memory Upgrade Option for the Router Processor on the Cisco ME 6524
MEM-C6K-CPTFL512M	Optional External Compact Flash memory 512 MB
Cisco ME 6500 Series Product Activation Keys	
S523IBL	12218ZU Cisco ME 6524 IOS IP BASE LAN only

| S523IBK9L | 12218ZU Cisco ME 6524 IOS IP BASE SSH LAN only |
| S523AIK9L | 12218ZU Cisco IOS Advanced IP Services |

1. S=IP Base; E=IP Services

For More Information

http://www.cisco.com/en/US/products/ps6845/index.html

Cisco ME 3400 Series Ethernet Access Switches

The Cisco ME 3400 Series Ethernet Access Switches are a series of next-generation Layer 2 and Layer 3 customer-located devices for service providers. Both software and hardware are built to meet the requirements for residential and business Ethernet access services.

Ideal for Companies That Need These Features

Cisco ME-3400-24TS
- 24 10/100 ports with two Small Form-Factor Pluggable (SFP) uplinks
- AC and DC versions available
- Business and residential access

Cisco ME-3400-24FS
- Twenty-four 100-MB SFP ports with two SFP uplinks
- AC version only
- Fiber-to-the-home application

Cisco ME-3400G-2CS
- Two dual-purpose (10/100/1000 and SFP) ports with two SFP uplinks
- AC version only
- Single-tenant unit access

Cisco ME-3400G-12CS
- 12 dual-purpose (10/100/1000 and SFP) ports with 4 SFP uplinks
- Redundant AC and DC versions available
- Gigabit access
- Small Layer 2 aggregation

Key Features and Benefits

Service provider-friendly hardware
- Small form factor—The Cisco ME 3400 Series Switches are designed with a compact form factor to accommodate deployment in small spaces. Combined with various mounting options, the switches can be deployed in space-constrained places.
- Industry-standard certifications—The Cisco ME 3400 Series is certified for both Network Equipment Buildings Standards Level 3 (NEBS3) and European Telecommunications Standards Institute (ETSI) standards.

Metro-specific software
- User-Network Interface (UNI), Enhanced Network Interface (ENI), and Network-Node Interface (NNI) port types—The Cisco ME 3400 Series software introduces the concepts of UNI, ENI, and NNI for Ethernet access switches. Because the software can identify the application of each port, it can provide many powerful default behaviors, thereby simplifying deployment, troubleshooting, and provisioning of the Cisco ME 3400 Series.
- QoS—The Cisco ME 3400 Series supports the Cisco Modular QoS CLI (MQC) to provide a modular and highly extensible framework for deploying QoS. By using an application-specific integrated circuit (ASIC)-based QoS solution, the Cisco ME 3400 Series provides policing, marking, shaping, and scheduling without affecting performance.
- Comprehensive security solution—As Metro Ethernet networks expand, it is a challenge to provide the same level of security as other access technologies. Cisco ME 3400 Series Switches provide a comprehensive security solution for Ethernet access networks by addressing their security features with respect to each of three areas: subscriber, switch, and network security.
- Ethernet operations, administration, and maintenance (Ethernet OAM)—The Cisco ME 3400 Series supports industry-standard OAM&P tools including IEEE 802.1ag Connectivity Fault Management (CFM) and the Ethernet Local Management Interface (E-LMI) protocols. IEEE 802.1ag allows operators to monitor and troubleshoot end-to-end Ethernet networks and allows service providers to check connectivity, isolate network issues, and identify customers affected by network problems. The E-LMI protocol, developed by the Metro Ethernet Forum (MEF), enables service providers to automatically configure the customer-edge device to match the subscribed service. This automatic provisioning not only reduces the effort to set up the service, but also reduces the amount of coordination required between the service provider and enterprise customer. In addition, the Cisco ME 3400 Series supports the IEEE 802.3ah Ethernet in the First Mile standard for service providers to perform link monitoring, fault isolation/detection, and loopback on the link between the customer equipment and the service provider network.

Specifications

Feature	Cisco ME 3400-24TS	Cisco ME 3400-24FS	Cisco ME 3400G-2CS	Cisco ME 3400G-12CS
Forwarding bandwidth (Gbps)	8.8	8.8	8.8	32
Packets per second (Mpps)	6.5	6.5	6.5	26
MAC addresses supported	8,000	8,000	8,000	8,000
Routes supported	5,000	5,000	5,000	5,000
GE density	2	2	4	16
FE density	24	24	0	0
AC/DC support	AC and DC	AC power	AC	Redundant AC and DC
Dimensions (H x W x D)	1.73 x 17.5 x 9.52 in. (4.4 x 44.5 x 24.2 cm)	1.73 x 17.5 x 9.52 in. (4.4 x 44.5 x 24.2 cm)	1.73 x 10.6 x 7.1 in. (4.4 x 26.9 x 18.2 cm)	1.73 x 17.5 x 11.0 in. (4.4 x 44.5 x 27.9 cm)
Unit weight	6.9 lb (2.9 kg)	7.5 lb (2.9 kg)	3.5 lb (1.6 kg)	AC: 9.3 lb (4.2 kg); DC: 9.0 lb (4.1 kg)

Selected Part Numbers and Ordering Information

Cisco ME 3400 Series Ethernet Access Switches	
ME-3400-24TS-A	Cisco ME 3400 24 10/100 +2 SFP, AC PS
ME-3400-24TS-D	Cisco ME 3400 24 10/100 +2 SFP, DC PS
ME-3400-24FS-A	Cisco ME 3400 24 100mb SFP +2 SFP, AC PS
ME-3400G-2CS-A	Cisco ME 3400 2 dual-purpose +2 SFP, AC PS
ME-3400G-12CS-A	Cisco ME 3400 12 dual-purpose +4 SFP, redundant AC PS
ME-3400G-12CS-D	Cisco ME 3400 12 dual-purpose +4 SFP, redundant DC PS
Cisco ME 3400 Series Software Options	
METROBASE	· Standard Layer 2 feature image targeted for triple play services · Advanced QoS—Ingress policing, egress shaping · Robust multicast—IGMP filtering/throttling, MVR · Complete security—UNI/NNI, Control Plane Security, Configuration File Security
METROACCESS	· Enhanced Layer 2 feature images targeted for premium triple player services and Layer 2 VPN services · Advanced L2 tunneling—802.1q Tunneling, Layer 2 Protocol Tunneling · Enhanced scalability—Configurable Per VLAN MAC Learning · Fast convergence—Flex Link
METROIPACCESS	· Layer 3 feature images targeted for Layer 3 VPN services · IP routing (RIPv1/v2, EIGRP, OSPF, BGPv4) · Secured Layer 3—Multi-VRF CE · Enhanced routing—Policy-based routing (PBR)

For More Information

http://www.cisco.com/en/US/products/ps6580/

Cisco ME 3400E Series Ethernet Access Switches

The Cisco ME 3400E Series Ethernet Access Switches are a series of next-generation Layer 2 and Layer 3 customer-located devices for service providers. The Cisco ME 3400E Series helps service providers deliver four important attributes that are essential to next-generation Carrier Ethernet service: availability, flexibility, manageability, and security.

Ideal for Companies that Need These Features

Cisco ME-3400E-24TS-M	· 24 10/100 ports with two dual-purpose (10/100/1000 and Small Form-Factor Pluggable [SFP]) uplinks · Two modular power-supply slots; AC and DC power supplies available · Business and residential access
Cisco ME-3400EG-2CS	· Two dual-purpose (10/100/1000 and SFP) ports with two SFP uplinks · AC version only · Single-tenant unit access

Cisco ME-3400EG-12CS
- 12 dual-purpose (10/100/1000 and SFP) ports with four SFP uplinks
- Two modular power-supply slots; AC and DC power supplies available
- Gigabit access
- Small Layer 2 aggregation and mobile pre-aggregation

Key Features and Benefits

Service provider-friendly hardware
- Small form factor—The Cisco ME 3400E Series is designed with a compact form factor to accommodate deployment in small spaces. Combined with various mounting options, these switches can be deployed in space-constrained places.
- Industry-standard certifications—The Cisco ME 3400E Series is certified for both Network Equipment Buildings Standards Level 3 (NEBS3) and European Telecommunications Standards Institute (ETSI) standards.
- Flexible power options—The Cisco ME 3400E Series supports modular power options. Both the 24- and 12-port models (ME-3400E-24TS-M and ME-3400EG-12CS-M, respectively) support dual AC, dual DC, and a mix of AC and DC power-supply configurations. In addition, the Cisco ME 3400E Series DC power supply supports 24-VDC options needed for cell-tower deployments.
- Remote management—To help service providers reduce operating expenses (OpEx), the Cisco ME 3400E Series supports features such as dying gasp for loss of power, external alarm inputs, and port or VLANB-based traffic loopback. These features help reduce the necessity for expensive truck rolls to the equipment site by enabling remote troubleshooting and diagnostic.
- Extended temperature range—The Cisco ME 3400E Series can operate at up to 65 degrees Celsius, depending on model type and configuration.

Metro-specific software
- User-Network Interface (UNI), Enhanced Network Interface (ENI), and Network-Node Interface (NNI) port types—The Cisco ME 3400E Series software introduces the concepts of UNI, ENI, and NNI for Ethernet access switches. Because the software can identify the application of each port, it can provide many powerful default behaviors, thereby simplifying deployment, troubleshooting, and provisioning of the Cisco ME 3400E Series.
- VLAN flexibility—The Cisco ME 3400E Series offers 1:1 VLAN translation and selective QinQ. These features allow service providers to expand their Layer 2 service offerings, and they provide robust control of VLAN tags for both customers and service providers.
- Quality of service (QoS)—The Cisco ME 3400E Series supports the Cisco Modular QoS CLI (MQC) to provide a modular and highly extensible framework for deploying QoS. By using an application-specific integrated circuit (ASIC)-based QoS solution, the Cisco ME 3400E Series provides policing, marking, shaping, and scheduling without affecting performance. In addition, the Cisco ME 3400E Series also supports advanced QoS features such as two-rate three-color ingress policing and class-of-service (CoS) mapping. These features enable service providers to offer more granular services.
- Comprehensive security solution—As Metro Ethernet networks expand, it is a challenge to provide the same level of security as other access technologies. Cisco ME 3400E Series Switches provide a comprehensive security solution for Ethernet access networks by addressing their security features with respect to each of three areas: subscriber, switch, and network security.
- Ethernet operations, administration, and maintenance (Ethernet OAM)—The Cisco ME 3400 Series supports industry-standard OAM&P tools including IEEE 802.1ag Connectivity Fault Management (CFM) and the Ethernet Local Management Interface (E-LMI) protocols. IEEE 802.1ag allows operators to monitor and troubleshoot end-to-end Ethernet networks and allows service providers to check connectivity, isolate network issues, and identify customers affected by network problems. The E-LMI protocol, developed by the Metro Ethernet Forum (MEF), enables service providers to automatically configure the customer-edge device to match the subscribed service. This automatic provisioning not only reduces the effort to set up the service, but also reduces the amount of coordination required between the service provider and enterprise customer. In addition, the Cisco ME 3400 Series supports the IEEE 802.3ah Ethernet in the First Mile standard for service providers to perform link monitoring, fault isolation/detection, and loopback on the link between the customer equipment and the service provider network.

Specifications

Feature	Cisco ME 3400E-24TS	Cisco ME 3400EG-2CS	Cisco ME 3400EG-12CS
Forwarding bandwidth (Gbps)	8.8	8.8	32
Packets per second (Mpps)	6.5	6.5	26
MAC addresses supported	8,000	8,000	8,000
Routes supported	5,000	5,000	5,000
GE density	2	4	16
FE density	24	0	0
AC/DC support	Redundant AC and DC	AC	Redundant AC and DC

Dimensions (H x W x D)	1.75 x 17.5 x 9.3 in. (4.45 x 44.5 x 23.6 cm)	1.73 x 10.6 x 7.2 in. (4.4 x 26.9 x 18.3 cm)	1.75 x 17.5 x 12.0 in. (4.45 x 44.5 x 30.5 cm)
Unit weight	6.4 lb (2.9 kg)	3.4 lb (1.5 kg)	8.5 lb (3.9 kg)

Selected Part Numbers and Ordering Information

Cisco ME 3400E Series Ethernet Access Switches	
ME-3400E-24TS-M	Cisco ME-3400E 24 10/100 +2 dual-purpose, 2 PS slots
ME-3400EG-2CS-A	Cisco ME-3400E 2 dual-purpose +2 SFP, AC PS
ME-3400EG-12CS-M	Cisco ME-3400E 12 dual-purpose +4 SFP, 2 PS slots
ME34X-PWR-AC	AC power supply
ME34X-PWR-DC	DC power supply
Cisco ME-3400E Series Software Options	
METROACCESS	· Enhanced Layer 2 feature images targeted for premium triple player services and Layer 2 VPN services · Advanced L2 tunneling—802.1q Tunneling, Layer 2 Protocol Tunneling · Enhanced scalability—Configurable Per VLAN MAC Learning · Fast convergence—Flex Link
METROIPACCESS	· Layer 3 feature images targeted for Layer 3 VPN services · IP routing (RIPv1/v2, EIGRP, OSPF, BGPv4) · Secured Layer 3—Multi-VRF CE · Enhanced routing—Policy based routing (PBR)

For More Information

http://www.cisco.com/en/US/products/ps9637/index.html

Cisco ME 3600X Series Ethernet Switches

The Cisco ME 3600X Series Ethernet Access Switches represent Cisco's first series of switches built specifically for the convergence of wireless and wireline services. A natural evolution to Cisco's Carrier Ethernet portfolio, the Cisco ME 3600X Series extends the transport speed of the portfolio to 10 Gbps in the access layer for business and mobile applications. It also enables service providers to initiate Multiprotocol Label Switching (MPLS)-based VPN services from within the access layer. Designed around critical Carrier Ethernet features that simplify network operation, the Cisco ME 3600X Series enables premium services with enhanced service-level agreement (SLA) capabilities. An optional "pay-as-you-grow" feature and service activation model gives service providers a flexible, cost-effective solution.

Ideal for Companies that Need These Features

Cisco ME 3600X-24TS	· Twenty-four 10/100/1000 ports with two 10 Gigabit Ethernet Small Form-Factor Pluggable Plus (SFP+) uplinks · Modular AC and DC power supply · Premium services for wireline and wireless
Cisco ME 3600X-24FS	· 24 Gigabit Ethernet SFP ports with two 10 Gigabit Ethernet SFP+ uplinks · Modular AC and DC power supply · Premium services for wireline and wireless

Key Features and Benefits

· Cisco Carrier Ethernet ASIC

  Powered by the Cisco Carrier Ethernet application-specific integrated circuit (ASIC)—designed specifically with service providers in mind—the Cisco ME 3600X Series delivers essential Carrier Ethernet technologies, including: Hierarchical quality of service (HQoS), MPLS, and Hierarchical Virtual Private LAN Service (H-VPLS). This custom and advanced ASIC design provides uninterrupted line-rate performance while delivering complex and taxing services such as access control list (ACL) and HQoS. The Carrier Ethernet ASIC integrates Cisco traffic-management innovation to deliver intelligent packet switching and routing operations.

· MPLS in the access layer

  The Cisco ME 3600X Series extends MPLS into the access layer by enabling service providers to initiate MPLS-based Layer 2 and Layer 3 VPN services from within the access layer. The Cisco ME 3600X Series gives service providers the ability to expand MPLS toward their network edge to gain the advantages of a single unified MPLS control plane across their network.

· "Pay-as-you-grow" investment model

  The use of licensing to activate features on the Cisco ME 3600X Series allows service providers to customize and schedule their investment in access features for a time when network growth and customer demand

justify the investment. Unlike investments in the core and edge, where the physical location of network assets has minimal effect on their accessibility and usage, the return on investment (ROI) on an access element is heavily influenced by its location in the network and proximity to customers. The ability to deploy the Cisco ME 3600X Series and later activate features as demand and growth dictate, with little if any need for service calls, delivers highly measurable investment protection. This allows flexible timing for migrating from 1 Gbps to 10 Gbps, deploying MPLS services, and boosting service capacity.

- Advanced service-level agreements

  Service-aware quality of service (QoS) allows service providers to expand and differentiate their services portfolio with highly advanced and differentiating SLAs. The HQoS capabilities of the Cisco ME 3600X Series scale to eight queues per service, three levels of scheduling, and buffer volumes capable of accommodating today's most demanding wireline and wireless applications.

- Mobile timing and synchronization services

  The Cisco ME 3600X Series provides the timing services required in today's converged access network to support mobile solutions, including Radio Access Network (RAN) applications, and offers integrated support for the Building Integrated Timing Supply (BITS) interface. The Cisco ME 3600X Series also supports synchronous Ethernet (SyncE) and can source network clocking information.

- Operational efficiency for Carrier Ethernet access deployments

  The Cisco ME 3600X Series features important enhancements that help service providers simplify and facilitate the management of their network, resulting in diminishing operational costs. This unique feature set enables deployment of the Cisco ME 3600X Series in a variety of applications, including business service with 10 Gigabit Ethernet User Network Interface (UNI) and Ethernet mobile backhaul. These features enhance performance awareness, facilitate troubleshooting, and simplify service turn-up and restoration, ultimately reducing operational cost. "Dying gasp" for power indicators and four external alarm inputs to detect changes in remote sites further help service providers manage the health of network elements.

Specifications

Feature	Cisco ME 3600X-24TS	Cisco ME 3600X-24FS
Forwarding bandwidth (Gbps)	44 (full duplex)	44
Packets per second (Mpps)	65	65
MAC addresses supported	16,000	16,000
Routes supported	20,000	20,000
GE density	24	24
10GE density	2	2
AC/DC support	AC and DC modular and redundant	AC and DC modular and redundant
Dimensions (H x W x D)	1.72-in. x 17.50-in. x 20.33-in. (4.47cm x 44.45cm x 51.6cm)	1.72-in. x 17.50-in. x 20.33-in. (4.47cm x 44.45cm x 51.6cm)
Unit weight	14.15 lb (6.41 kg)	14.50 lb (6.57 kg)

Selected Part Numbers and Ordering Information

Cisco ME 3600X Series Ethernet Access Switches	
ME-3600X-24TS-M	Cisco ME 3600X 24TS Switch
ME-3600X-24FS-M	Cisco ME 3600X 24FS Switch
PWR-ME3KX-AC	AC power supply and fan module for ME-3600X-24TS-M and ME-3600X-24FS-M
PWR-ME3KX-DC	DC power supply and fan module for ME-3600X-24TS-M and ME-3600X-24FS-M
ME-FANTRAY	Fan tray module for ME-3600X-24TS-M and ME-3600X-24FS-M. The fan tray is required in the second slot when only one power supply is in the system.
Cisco ME 3600X Series license options	
METROIPACCESS	• Layer 2 and Layer 3 feature license targeted for Layer 2 and Layer 3 premium Services • Enhanced QoS, with deep buffers and Hierarchical QoS • Layer 2 features for L2 VPN including EVC framework • Layer 3 features for advanced IP routing protocols including IP Routing protocols like RIPv1/v2, EIGRP, OSFP, BGPv4, HSRP,VRRP • Secured Layer 3: Multi-VRF CE

ADVANCEDMETROIPACCESS	• MPLS features license targeted for MPLS deployment in the access and MPLS based VPN Services • MPLS label imposition / Disposition on all ports • MPLS Traffic engineering and Fast Reroute • Ethernet over MPLS (EoMPLS) • MPLS VPN • MPLS OAM
10GEUPGRADE	The 10GE Upgrade license allows service providers to enable 10 Gigabit Ethernet on the uplink only when required, supporting a pay-as-you-grow strategy.

For More Information

http://www.cisco.com/en/US/products/ps10956/index.html

Cisco 2500 Series Connected Grid Switches

The Cisco 2500 Series Connected Grid Switch is a rugged switch optimized for use in transmission and distribution (T&D) power substations.

The Cisco 2520 Connected Grid Switch (CGS 2520) is designed for substation networks to meet the harsh environments common in transmission and distribution substations. The CGS 2520 uses Cisco IOS Software, the operating system that powers millions of Cisco switches worldwide.

Ideal for Utilities That Need These Features

Cisco 2500 Series
- Rugged industrial design and substation compliance: IEC 61850-3 and IEEE 1613
- QoS, enhanced security, and availability
- Easy deployment and network management

Key Features and Benefits

- Rugged design for substation compliance—In addition to IEC 61850-3 and IEEE 1613 compliance, convection cooled with no moving parts or fans for maximum reliability and reduced network outages.
- Network security—Advanced Cisco IOS Software features such as 802.1x, Layer 2-Layer 4 access control lists (ACLs), port security, protected port/private VLAN, UNI/ENI default control traffic shut down and configuration file security to prevent unauthorized network access and reduce operational costs of securing the network.
- High availability and redundancy—Advanced features such as REP and Flexlink provide fast reconvergence in ring and hub-and-spoke topologies, minimizing network downtime and associated costs. In addition, field replaceable components such as power supplies and SFPs reduce redeployment time. Finally, optional redundant, hot-swappable power supply provides additional redundancy.
- Ease of use—Intuitive graphical user interface (GUI) in Cisco Configuration Professional simplifies configuration of switches and reduces training time and costs. Utility-focused enhancements have been added to further increase ease of use. Smartport templates provide one-touch global and port-level macros to simplify switch deployments.

Specifications

Feature	Cisco 2520-24TC	Cisco 2520-16S-8PC
Forwarding bandwidth (Gbps)	8	8
Forwarding rate (mpps)	6.5	6.5
MAC addresses supported	8,000	8,000
Onboard memory (DDR2 SDRAM)	256 MB	256 MB
Gigabit Ethernet density	2 (dual-purpose ports: 100/1000 fiber SFP and/or 10/100/1000 Gigabit copper)	2 (dual-purpose ports: 100/1000 fiber SFP and/or 10/100/1000 Gigabit copper)
10/100 density	24	8
100BASE-FX density	-	16-port fiber SFP
PoE: Max. 802.3af Class 3 devices (15.4W)	-	8 max
Power Consumption	28.6W	40.3W
Power Supply	External high AC/DC and low DC power supply options available for redundant power supply support	External high AC/DC and low DC power supply options available for redundant power supply support

Dimensions (H x W x D)	1.75 x 1.75 x 14 in. (4.45 x 44.5 x 35.6 cm)	1.75 x 1.75 x 14 in. (4.45 x 44.5 x 35.6 cm)
Unit weight	9.1 lbs. (4.1 kg)	10 lbs. (4.5 kg)

Selected Part Numbers and Ordering Information

Cisco 2500 Series Connected Grid Switches	
CGS-2520-24TC	Cisco 2520 Connected Grid Switch-24 10/100 + 2 dual purpose Gigabit Ethernet ports LAN Base Image
CGS-2520-16S-8PC	Cisco 2520 Connected Grid Switch-16 100FX SFP ports + 2 dual purpose Gigabit Ethernet ports LAN Base Image

For More Information

http://www.cisco.com/go/cgs2500

Cisco Switching Services

The enterprise network becomes a strategic asset through effective architecture, deployment, and operations.

Realize the full business value of your technology investments faster with intelligent, personalized services from Cisco and our partners. Backed by deep networking expertise and a broad ecosystem of partners, Cisco Services enable you to successfully plan, build, and run your network as a powerful business platform. Whether you are looking to quickly seize new opportunities to meet rising customer expectations, improve operational efficiency to lower costs, mitigate risk, or accelerate growth, we have a service that can help you.

For more information about Cisco Switching Services, visit http://www.cisco.com/go/services/routing-switching.

Chapter 3: Wireless

This chapter provides only a subset of Cisco products and part numbers.

Wireless At-a-Glance

Product	Features	Page
ENTERPRISE WIRELESS		
Access Points and Client Devices		

Cisco Aironet 3500 Series Access Points
 	
NEW PRODUCT
	· Cisco Aironet 3500 Series Access Points with CleanAir technology are the first access points to actively avoid wireless interference using ASIC-based intelligence
	· Provides standard 802.3af Power over Ethernet
	· 3500i model has internal antennas for typical office deployments
	· 3500e model has external antenna connectors and extended operating temperatures for challenging environments
	· Offers easy retrofits to existing Cisco Aironet 1130 and Aironet 1240 Series mounting brackets to simplify 802.11n migration
	· Cisco M-Drive technology provides the following benefits:
	  - Cisco ClientLink technology improves reliability and coverage for established clients.
	  - BandSelect improves 5-GHz client connections in mixed client environments.
	  - VideoStream uses multicast to improve multimedia applications.
	· Available in a lightweight version only
		3–3

Cisco Aironet 1140 Series Access Points	· 802.11n AP designed for simple deployment and energy efficiency.
	· Sleek design blends into enterprise environments.
	· Easy to deploy and offers efficient power with standard 802.3af PoE.
	· Cisco M-Drive Technology provides the following benefits:
	  - ClientLink improves reliability and coverage for legacy clients
	  - BandSelect improves 5 GHz client connections in mixed client environments
	  - VideoStream uses multicast to improve multimedia applications
	  - Optional WirelessPLUS software allows the access point to be configured to support the OfficeExtend solution for wireless teleworking.
	· Available in standalone or lightweight.
		3–7

Cisco Aironet 1260 Series Access Points
 	
NEW PRODUCT
	· 802.11n rugged indoor access points are designed for challenging RF environments that require connectorized antennas, a rugged metal enclosure, and a broad operating-temperature range
	· Provides power with standard 802.3af Power over Ethernet (PoE)
	· Combined data rates of up to 600 Mbps provide mobile access to high-bandwidth data, voice, and video applications.
	· Cisco M-Drive technology provides the following benefits:
	  - Cisco ClientLink technology improves reliability and coverage for established clients.
	  - BandSelect improves 5-GHz client connections in mixed client environments.
	  - VideoStream uses multicast to improve multimedia applications.
	· Available in a lightweight version only; standalone versions will be available later in 2010
		3–10

Cisco Aironet 1250 Series Access Points	· 802.11n rugged indoor AP designed for challenging RF environments that require connectorized antennas, a rugged metal enclosure, and a broad operating temperature range.
	· Combined data rates of up to 600 Mbps provide mobile access to high-bandwidth data, voice, and video applications.
	· Cisco M-Drive Technology provides the following benefits:
	  - ClientLink improves reliability and coverage for legacy clients
	  - BandSelect improves 5 GHz client connections in mixed client environments
	  - VideoStream uses multicast to improve multimedia applications
	· Available in standalone or lightweight.
		3–13

Cisco Aironet 1240 Series Access Points	· Rugged 802.11a/b/g AP designed for indoor industrial deployments and installations that require antenna versatility. · Ideal for factories, warehouses, and retailers. · Operating temperature range and UL 2043 certification for plenum rating requirements set by local fire codes support installation in environmental air spaces. · Available in standalone or lightweight.	3–16
Cisco Aironet 1130 Series Access Points	· Dual-band 802.11a/b/g indoor AP. · Cost-compelling solution for easy deployment in offices and similar facilities. · Optional WirelessPLUS software allows the access point to be configured to support the OfficeExtend solution. · Available in standalone or lightweight.	3–18

Cisco Aironet 1520 Series Access Points ***NEW UPDATES***	· Flexible, secure mesh platform for demanding environments · Enables cost-effective and scalable deployment of secure outdoor wireless LANs. · Multiple-radio support (802.11 b/g, licensed for 4.9-GHz public safety applications. · Improved 802.11 b/g radio sensitivity and range performance with maximal ration combining (MPC) · NEMA Type 4X certified enclosure, FIPS 140-2 certifiable	3–19
Cisco Aironet 1400 Series Wireless Bridge	· Support both point-to-point and point-to-multipoint configurations. · Range and throughput support data rates up to 54 Mbps. · Enhanced security mechanisms based on 802.11 standards. · Ruggedized enclosure optimized for harsh outdoor environments with an extended operating temperature range.	3–22
Cisco Aironet 1300 Series Access Points	· Configurable for AP, bridge, or workgroup bridge roles. · Support for both point-to-point or point-to-multipoint configurations. · Industry-leading range and throughput, supporting 802.11 b/g 2.4 GHz with data rates up to 54 Mbps. · Ruggedized enclosure optimized for harsh outdoor environments with extended operating temperature range. · Integrated or optional external antennas for flexibility in deployment.	3–23
Cisco Aironet Wireless LAN Client Adapters	· Cisco Aironet 802.11a/b/g CardBus Wireless LAN Client Adapter, with the Cisco Wireless Security Suite and support for Wi-Fi Protected Access (WPA), offer secure network communications. · Flexible, easy configuration and management. · High-performance 54-Mbps connectivity in the 2.4- and 5-GHz bands. · Exceptional range and throughput. · World mode for international roaming.	3–25
Cisco Secure Services Client	· Software application allows businesses of all sizes to deploy single 802.1x authentication framework across endpoint devices to enable access to both wired and wireless networks. · Supports Federal Information Processing Standards (FIPS). · Simple end-user experience (two-click connect, integrated and automated VPN, and automated access to the network). · Central provisioning of users' access profiles.	3–26
Cisco Aironet Antennas and Accessories ***NEW UPDATES***	· Cisco many options for antennas and accessories. · FCC-approved directional and omnidirectional antennas are available. · Low-loss cable, mounting hardware, and other accessories are also available.	3–28
Wireless LAN Controllers		
Cisco 5500 Series Wireless LAN Controller ***NEW UPDATES***	· Ideal for enterprise wireless LAN (WLAN) deployments that require enhanced scalability, system-level security, integrated RF monitoring and management, and teleworking features. · Supports OfficeExtend to provide corporate wireless service for mobile and remote workers with secure wired tunnels to the Cisco Aironet 1130 and 1140 Series Access Points.The Control and Provisioning of Wireless Access Points (CAPWAP) protocol centrally controls Cisco Aironet lightweight access points for WLAN performance optimization and automated network resiliency. · Available with eight Gigabit Ethernet Small Form-Factor Pluggables (SFPs) and flexible licensing to support up to 500 access points and up to 7000 clients.	3–33
Cisco 4400 Series Wireless LAN Controller	· Ideal for enterprise WLAN deployments that require system-level security, scalability, and RF management. · The LWAPP or CAPWAP protocols centrally control Cisco Aironet lightweight APs for WLAN performance optimization and automated network resiliency. · Available with two Gigabit Ethernet ports to support 12, 25, and 50 APs or with four Gigabit Ethernet ports to support 100 APs.	3–35
Cisco 2100 Series Wireless LAN Controller	· Ideal for enterprise branch, and small business WLAN deployments that require system-level security, scalability, and RF management. · The LWAPP or CAPWAP protocols centrally control Cisco Aironet lightweight APs for WLAN performance optimization and automated network resiliency. · Supports 6, 12, or 25 lightweight APs and up to 256 clients, making it a cost-effective solution for enterprise branch offices and small businesses.	3–36
Network Management		
Cisco Wireless Control System ***NEW UPDATES***	· Comprehensive enterprise-class wireless LAN lifecycle management of the Cisco Unified Wireless Network. · Wide range of easy-to-use tools, guides, and templates for simplified planning, deployment, monitoring, troubleshooting, and reporting on indoor and outdoor wireless networks including the next -generation 802.11n WLAN infrastructure and client devices. · Centralized platform for managing complete network of Cisco Wireless LAN Controllers, Cisco Aironet APs, Cisco Mobility Services Engine (MSE), mobility services, and Cisco CleanAir technology. · Includes monitoring of standalone (autonomous) APs and supports their migration to operate as lightweight APs. · Supports a wide range of mobility services including context-aware mobility, adaptive wireless intrusion prevention system (wIPS), and secure guest access.	3–37

Cisco Wireless Control System Navigator	· Aggregated platform for enhanced scalability, manageability, and visibility of large-scale implementations of the Cisco Unified Wireless Network. · Centralizes operational control and management of up to 20 geographically dispersed Cisco WCS management platforms.	3–39
Cisco Spectrum Expert Wi-Fi	· (Alternately: See Cisco Aironet 3500 Series access point for integrated RF detection and mitigation using the system-level intelligence of Cisco CleanAir technology). · Spectrum analyzer tool offers visibility into the RF layer of wireless networks so that organizations can determine the causes of interference problems and optimize network performance. · Active Devices offers comprehensive lists of all access points, temporary networks, and interferer devices (for example, microwave ovens, cordless phones, wireless security cameras, Bluetooth devices, and RF jammers). · Channel Summary, Devices View, and Device Finder details visibility of RF activity, effect on the wireless network, and the location of devices causing wireless interference.	3–40

Mobility Services		
Cisco 3300 Series Mobility Services Engine	· Transforms existing WLANs into comprehensive mobility networks through uniform way of mobility services delivery. · Integrates with the Cisco Unified Wireless Network and Cisco Unified Communications Solutions to build on existing business mobility investments. · Extensible platform supports suite of software with ability to scale services through clustering. The software suite includes context-aware services and adaptive wireless intrusion prevention systems (IPS) with a unified, open API for developing business-relevant applications.	3–42
Cisco Context-Aware Software	· Advanced and scalable context-aware mobility services simultaneously track thousands of Wi-Fi clients or Wi-Fi tags for indoor, indoor high ceiling, and outdoor (parking lot/yards) environment. · Contains CleanAir technology, providing location information and interference history in conjunction with the Cisco Unified Wireless Network with CleanAir technology. · Transparent integration with existing networks and applications for faster adoption. Cisco offers an open API with the context-aware mobility software, making it easier for technology partners to integrate their applications and for customers to choose the right application over the right network for particular users.	3–43
Cisco Adaptive Wireless Intrusion Prevention System (IPS)	· Employs network analysis and signature-based techniques, combined with tight integration to Cisco Unified Wireless Network, to deliver protection against rogue APs and clients, network reconnaissance, eavesdropping, authentication and encryption cracking, man-in-the-middle attacks, wireless DoS attacks, and zero-day unknown attacks. · Proactive threat prevention through automated wireless vulnerability and performance monitoring that proactively and persistently scans the wireless network to mitigate problems before they arise.	3–45
Cisco Physical Security For product information on Cisco Video Surveillance products, refer to Chapter 5, "Security."		See 5–1

SERVICES		
Cisco Wireless Services Services from Cisco and its partners help customers plan, build, and run wireless LANs to create the Borderless Mobility experience and deliver anytime, anywhere access.		3–46

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco Aironet 3500 Series Access Points

Cisco Aironet 3500 Series Access Points with CleanAir technology are the first 802.11n access points to create a self-healing, self-optimizing wireless network by intelligently avoiding interference.

Ideal for Companies That Need These Features

Cisco Aironet 3500 Series
- The highest-performance connectivity for mission-critical mobility
- Reliable application delivery
- 802.11n performance with standard 802.3af Power over Ethernet (PoE)

Key Features and Benefits

CleanAir technology that supports:
- Automatic interference mitigation for reliable and predictable wireless LAN (WLAN) coverage
- Remote troubleshooting for fast problem resolution and less downtime
- Robust security with non-Wi-Fi detection for off-channel rogue devices
- Policy enforcement with customizable alerts to prohibit devices that interfere with the network

Specifications

Software	Cisco Unified Wireless Network Software Release 7.0 or later			
802.11n Version 2.0 (and Related) Capabilities	• 2x3 multiple-input multiple-output (MIMO) with two spatial streams • Maximal ratio combining (MRC) • Legacy beamforming • 20- and 40-MHz channels • PHY data rates up to 300 Mbps • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) • 802.11 dynamic frequency selection (DFS) • Cyclic shift diversity (CSD) support			
Data Rates Supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11n data rates (2.4 GHz and 5 GHz)			

MCS Index[1]	GI[2]=800ns		GI=400ns	
	20-MHz rate (Mbps)	40-MHz rate (Mbps)	20-MHz rate (Mbps)	40-MHz rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	150
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

Maximum Number of Nonoverlapping Channels	2.4 GHz • 802.11b/g: • 20 MHz: 3 • 802.11n: • 20 MHz: 3 • 40 MHz: 1	5 GHz • 802.11a: • 20 MHz: 21 • 802.11n: • 20 MHz: 21 • 40 MHz: 9

Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Maximum Transmit Power	2.4 GHz • 802.11b • 23 dBm with 2 antennas • 802.11g • 20 dBm with 2 antennas • 802.11n (non-HT duplicate mode) • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas	5 GHz • 802.11a • 20 dBm with 2 antennas • 802.11n non-HT duplicate mode • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Frequency Band and 20MHz Operating Channels	A (A regulatory domain): · 2.412 to 2.462 GHz; 11 channels · 5.180 to 5.320 GHz; 8 channels · 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz) · 5.745 to 5.825 GHz; 5 channels C (C regulatory domain): · 2.412 to 2.472 GHz; 13 channels · 5.745 to 5.825 GHz; 5 channels E (E regulatory domain): · 2.412 to 2.472 GHz; 13 channels · 5.180 to 5.320 GHz; 8 channels · 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz) · (I regulatory domain): · 2.412 to 2.472 GHz, 13 channels · 5.180 to 5.320 GHz; 8 channels K (K regulatory domain): · 2.412 to 2.472 GHz; 13 channels · 5.180 to 5.320 GHz; 8 channels · 5.500 to 5.620 GHz, 7 channels · 5.745 to 5.805 GHz, 4 channels	N (N regulatory domain): · 2.412 to 2.462 GHz; 11 channels · 5.180 to 5.320 GHz; 8 channels · 5.745 to 5.825 GHz; 5 channels Q (Q regulatory domain): · 2.412 to 2.472 GHz; 13 channels · 5.180 to 5.320 GHz; 8 channels · 5.500 to 5.700 GHz; 11 channels S (S regulatory domain): · 2.412 to 2.472 GHz; 13 channels · 5.180 to 5.320 GHz; 8 channels · 5.745 to 5.825 GHz; 5 channels T (T regulatory domain): · 2.412 to 2.462 GHz; 11 channels · 5.280 to 5.320 GHz; 3 channels · 5.500 to 5.700 GHz, 11 channels · 5.745 to 5.825 GHz; 5 channels

Note: Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit http://www.cisco.com/go/aironet/compliance.

Available Transmit Power Settings	2.4 GHz · 23 dBm (200 mW) CCK Only · 20 dBm (100 mW) · 17 dBm (50 mW) · 14 dBm (25 mW) · 11 dBm (12.5 mW) · 8 dBm (6.25 mW) · 5 dBm (3.13 mW) · 2 dBm (1.56 mW) · -1 dBm (0.78 mW)	5 GHz · 20 dBm (100 mW) · 17 dBm (50 mW) · 14 dBm (25 mW) · 11 dBm (12.5 mW) · 8 dBm (6.25 mW) · 5 dBm (3.13 mW) · 2 dBm (1.56 mW) · -1 dBm (0.78 mW)

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Integrated Antenna	· 2.4 GHz, Gain 4 dBi, internal Omni, horizontal beamwidth 360° · 5 GHz, Gain 3 dBi, internal Omni, horizontal beamwidth 360°
External Antenna (sold separately)	Cisco offers the industry's broadest selection of 802.11n antennas delivering optimal coverage for a variety of deployment scenarios.
Interfaces	· 10/100/1000BASE-T autosensing (RJ-45) · Management console port (RJ-45)
Indicators	· Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors.
Dimensions (W x L x H)	· Access point (without mounting bracket): 8.7 x 8.7 x 1.84 in. (22.1 x 22.1 x 4.7 cm)
Weight	· 2.3 lbs (1.04 kg)
System Memory	· 128 MB DRAM · 32 MB Flash
Input Power Requirements	· AP3500: 44 to 57 VDC · Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz
Powering Options	· 802.3af Ethernet Switch · Cisco AP3500 Power Injectors (AIR-PWRINJ4=) · Cisco AP3500 Local Power Supply (AIR-PWR-B=)
Environmental	Cisco Aironet 3500i · Nonoperating (storage) temperature: -22 to 185°F (-30 to 85°C) · Operating temperature: 32 to 104°F (0 to 40°C) · Operating humidity: 10 to 90% percent (noncondensing) Cisco Aironet 3500e · Nonoperating (storage) temperature: -40 to 185°F (-40 to 85°C) · Operating temperature: -4 to +131°F (-20 to +55°C) · Operating humidity: 10 to 90 percent (noncondensing)
Power Draw	· AP3500: 12.95 W Note: When deployed using Power over Ethernet (PoE), the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point + cabling) to 15.4W.

Warranty	Limited Lifetime Hardware Warranty
Receive Sensitivity	· 802.11a (non HT20): -93 dBm @ 6 Mb/s; -93 dBm @ 9 Mb/s; -92 dBm @ 12 Mb/s; -90 dBm @ 18 Mb/s; -87 dBm @ 24 Mb/s; -84 dBm @ 36 Mb/s; -79 dBm @ 48 Mb/s; -79 dBm @ 54 Mb/s
	· 802.11b (CCK): -101 dBm @ 1 Mb/s; -98 dBm @ 2 Mb/s; -92 dBm @ 5.5 Mb/s; -89 dBm @ 11 Mb/s
	· 802.11g (non HT20): -92 dBm @ 6 Mb/s; -92 dBm @ 9 Mb/s; -92 dBm @ 12 Mb/s; -90 dBm @ 18 Mb/s; -86 dBm @ 24 Mb/s; -84 dBm @ 36 Mb/s; -79 dBm @ 48 Mb/s; -78 dBm @ 54 Mb/s
	· 2.4-GHz: 802.11n (HT20): -92 dBm @ MCS0; -90 dBm @ MCS1; -88 dBm @ MCS2; -85 dBm @ MCS3; -82 dBm @ MCS4; -77 dBm @ MCS5; -76 dBm @ MCS6; -74 dBm @ MCS7; -92 dBm @ MCS8; -90 dBm @ MCS9; -87 dBm @ MCS10; -85 dBm @ MCS11; -82 dBm @ MCS12; -77 dBm @ MCS13; -75 dBm @ MCS14; -74 dBm @ MCS15
	· 2.4-GHz: 802.11n (HT40): -89 dBm @ MCS0; -87 dBm @ MCS1; -85 dBm @ MCS2; -82 dBm @ MCS3; -79 dBm @ MCS4; -73 dBm @ MCS5; -72 dBm @ MCS6; -70 dBm @ MCS7; -90 dBm @ MCS8; -87 dBm @ MCS9; -85 dBm @ MCS10; -81 dBm @ MCS11; -78 dBm @ MCS12; -74 dBm @ MCS13; -72 dBm @ MCS14; -71 dBm @ MCS15
	· 5-GHz: 802.11n (HT20): -93 dBm @ MCS0; -91 dBm @ MCS1; -89 dBm @ MCS2; -86 dBm @ MCS3; -83 dBm @ MCS4; -78 dBm @ MCS5; -77 dBm @ MCS6; -75 dBm @ MCS7; -87 dBm @ MCS8; -87 dBm @ MCS9; -85 dBm @ MCS10; -83 dBm @ MCS11; -79 dBm @ MCS12; -75 dBm @ MCS13; -73 dBm @ MCS14; -72 dBm @ MCS15
	· 5-GHz: 802.11n (HT40): -91 dBm @ MCS0; -89 dBm @ MCS1; -87 dBm @ MCS2; -83 dBm @ MCS3; -80 dBm @ MCS4; -75 dBm @ MCS5; -74 dBm @ MCS6; -72 dBm @ MCS7; -86 dBm @ MCS8; -85 dBm @ MCS9; -84 dBm @ MCS10; -80 dBm @ MCS11; -77 dBm @ MCS12; -72 dBm @ MCS13; -71 dBm @ MCS14; -70 dBm @ MCS15
Compliance Standards	· Safety: UL 60950-1; CAN/CSA-C22.2 No. 60950-1; UL 2043; IEC 60950-1; EN 60950-1
	· Radio approvals: FCC Part 15.247, 15.407; RSS-210 (Canada); EN 300.328, EN 301.893 (Europe); ARIB-STD 33 (Japan); ARIB-STD 66 (Japan); ARIB-STD T71 (Japan); EMI and susceptibility (Class B); FCC Part 15.107 and 15.109; ICES-003 (Canada); VCCI (Japan); EN 301.489-1 and -17 (Europe); EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC; IEEE Standard:; IEEE 802.11a/b/g, IEEE 802.11n 2.0, IEEE 802.11h, IEEE 802.11d
	· Security: 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA; 802.1X; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP); EAP Type(s):; Extensible Authentication Protocol-Transport Layer Security (EAP-TLS); EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2); Protected EAP (PEAP) v0 or EAP-MSCHAPv2; Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST); PEAPv1 or EAP-Generic Token Card (GTC); EAP-Subscriber Identity Module (SIM)
	· Multimedia: Wi-Fi Multimedia (WMM™)
	· Other: FCC Bulletin OET-65C; RSS-102

1. MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
2. GI: A guard interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Selected Part Number and Ordering Information

Cisco Aironet 3500 Series Controller-Based Access Point	
AIR-CAP3502I-x-K9	Cisco Aironet 3500i mode-Indoor environments, with internal antennas, dual-band controller-based 802.11a/g/n
AIR-CAP3501I-x-K9	Cisco Aironet 3500i mode-Indoor environments, with internal antennas, single-band controller-based 802.11g/n
AIR-CAP3502I-xK910	Cisco Aironet 3500i mode-Indoor environments, with internal antennas, eco-pack (dual-band 802.11a/g/n) 10 quantity access points
AIR-CAP3502E-x-K9	Cisco Aironet 3500e mode-Indoor, challenging environments, with external antennas, dual-band controller-based 802.11a/g/n
AIR-CAP3501E-x-K9	Cisco Aironet 3500e mode-Indoor, challenging environments, with external antennas, single-band controller-based 802.11g/n
AIR-CAP3502E-xK910	Cisco Aironet 3500e mode-Indoor, challenging environments, with external antennas, eco-pack (dual-band 802.11a/g/n) 10 quantity access points
CON-SNT-CAP352Ix	Cisco SMARTnet Services for the Cisco Aironet 3500i model with internal antennas, SMARTnet 8x5xNBD 3500i access point (dual-band 802.11 a/g/n)
CON-SNT-CAP351Ix	Cisco SMARTnet Services for the Cisco Aironet 3500i model with internal antennas, SMARTnet 8x5xNBD 3500i access point (single-band 802.11 g/n)
CON-SNT-CAP352Ix	Cisco SMARTnet Services for the Cisco Aironet 3500i model with internal antennas, SMARTnet 8x5xNBD 10 quantity eco-pack 3500i access point (dual-band 802.11a/g/n)
CON-SNT-CAP3502x	SMARTnet Services for the Cisco Aironet 3500e model with external antennas, SMARTnet 8x5xNBD 3500e access point (dual-band 802.11 a/g/n)
CON-SNT-CAP3501x	SMARTnet Services for the Cisco Aironet 3500e model with external antennas, SMARTnet 8x5xNBD 3500e access point (single-band 802.11 g/n)
CON-SNT-CAP3502x	SMARTnet Services for the Cisco Aironet 3500e model with external antennas, SMARTnet 8x5xNBD 10 quantity eco-pack 3500e access point (dual-band 802.11a/g/n)
Cisco Wireless LAN Services	

AS-WLAN-CNSLT	Cisco Wireless LAN Network Planning and Design Service
AS-WLAN-CNSLT	Cisco Wireless LAN 802.11n Migration Service
AS-WLAN-CNSLT	Cisco Wireless LAN Performance and Security Assessment Service

Regulatory domains: (x = regulatory domain)
Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit http://www.cisco.com/go/aironet/compliance.
Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.

Limited Lifetime Hardware Warranty

This Cisco Aironet 3500 Series Access Point comes with a Limited Lifetime Warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media is defect-free for 90 days. For more details, visit http://www.cisco.com/go/warranty.

Cisco Wireless LAN Services

Seamlessly integrate mobile services and take full advantage of the systemwide capabilities of the Cisco Unified Wireless Network with services from Cisco and our partners. Better utilize the self-healing, self-optimizing features built into the silicon-level intelligence of CleanAir technology and the increased performance of the 802.11n standard while simplifying the transition to these new technologies. For more details, visit http://www.cisco.com/go/wirelesslanservices.

For More Information

http://www.cisco.com/go/wireless

Cisco Aironet 1140 Series Access Points

The Cisco Aironet 1140 Series Access Point is a business-ready, 802.11n access point designed for simple deployment and energy efficiency. The high-performance platform, which offers at least six times the throughput of existing 802.11a/g networks, prepares the business for the next wave of mobile devices and applications. Building on the Cisco Aironet heritage of RF excellence, this access point combines the industry's most widely deployed 802.11n technology with a sleek industrial design that blends transparently into any enterprise environment.

Designed for sustainability, the Cisco Aironet 1140 Series delivers high performance from standard 802.3af PoE while decreasing waste with multiunit eco-packs and Energy Star-certified power supplies. As part of the Cisco Unified Wireless Network, these access points provide the industry's lowest total cost of ownership and investment protection by integrating transparently with the existing network.

Ideal for Companies That Need These Features

Cisco Aironet 1140 Series
- Simple deployment and energy efficiency
- 802.11n performance with standard 802.3af PoE
- Reliable and predictable WLAN coverage

Key Features and Benefits

- Six times the throughput of existing 802.11a/g networks
- A sleek industrial design that blends into any enterprise environment
- Cisco M-Drive technology for optimized client performance
- Environmentally friendly multiunit eco packs and Energy Star-certified power supplies
- Optional WirelessPLUS software allows the access point to be configured to support the OfficeExtend solution for wireless teleworking.
- Optional software allows the access point to be configured to support enterprise wireless mesh.

Specifications

Feature	Cisco Aironet 1140 Series Access Point	
Software	Cisco Unified Wireless Network Software Release 7.0 or later.	
Draft 802.11n Version 2.0 (and Related) Capabilities	2x3 multiple-input multiple-output (MIMO) with two spatial streams; Maximal ratio combining (MRC); PHY data rates up to 300 Mbps; Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx); Cyclic shift diversity (CSD) support	
Maximum Number of Non-Overlapping Channels	2.4 GHz 802.11b/g: 20 MHz: 3 802.11n: 20 MHz: 3 40 MHz: 1	5 GHz 802.11a: 20 MHz: 21 802.11n: 20 MHz: 21 40 MHz: 9
Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.		
Integrated Antenna	2.4 GHz, Gain 4.0 dBi, horizontal beamwidth 360°; 5 GHz, Gain 3 dBi, horizontal beamwidth 360°	
Interfaces	10/100/1000BASE-T autosensing (RJ-45); Management console port (RJ45)	

Indicators	Status LED indicates boot loader status, association status, operating status, boot loader warnings, boot loader errors.
Frequency Band and 20-MHz Operating Channels	· A (Americas (FCC)):2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz); 5.745 to 5.825 GHz; 5 channels · C (China): 2.412 to 2.472 GHz; 13 channels; 5.745 to 5.825 GHz; 5 channels · E (ETSI): 2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 11 channels · I (Israel): 2.412 to 2.472 GHz, 13 channels; 5.180 to 5.320 GHz; 8 channels · K (Korea): 2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.620 GHz, 7 channels; 5.745 to 5.805 GHz, 4 channels	· N (Non-FCC): 2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels · P (Japan2): 2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels · S (Singapore): 2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels · T (Taiwan): 2.412 to 2.462 GHz; 11 channels; 5.280 to 5.320 GHz; 3 channels; 5.500 to 5.700 GHz, 11 channels; 5.745 to 5.825 GHz; 5 channels
Maximum Transmit Power	2.4GHz · 802.11b:20 dBm with 1 antenna · 802.11g: 17 dBm with 1 antenna · 802.11n (HT20): 20 dBm with 2 antennas · 802.11n (HT40): 20 dBm with 2 antennas	5GHz · 802.11a: 17 dBm with 1 antenna · 802.11n non-HT duplicate (802.11a duplicate) mode: 17 dBm with 1 antenna · 802.11n (HT20): 20 dBm with 2 antennas · 802.11n (HT40): 20 dBm with 2 antennas

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Available Transmit Power Settings	2.4GHz: 20 dBm (100 mW); 17 dBm (50 mW); 14 dBm (25 mW); 11 dBm (12.5 mW); 8 dBm (6.25 mW); 5 dBm (3.13 mW); 2 dBm (1.56 mW); –1 dBm (0.78 mW)	5GHz: 20 dBm (100 mW); 17 dBm (50 mW); 14 dBm (25 mW); 11 dBm (12.5 mW); 8 dBm (6.25 mW); 5 dBm (3.13 mW); 2 dBm (1.56 mW); –1 dBm (0.78 mW)

Note: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Dimensions (W x L x H)	Access point (without mounting bracket): 8.7 x 8.7 x 1.84 in. (22.1 x 22.1 x 4.7 cm)
Weight	2.3 lbs (1.04 kg)
Environmental	Nonoperating (storage) temperature: –22 to 185°F (–30 to 85°C); Operating temperature: 32 to104°F (0 to 40°C); Operating humidity: 10 to 90% percent (non-condensing)
System Memory	128 MB DRAM; 32 MB flash
Input Power Requirements	AP1140: 36 to 57 VDC; Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz
Powering Options	802.3af Ethernet Switch; Cisco AP1140 Power Injectors (AIR-PWRINJ4=); Cisco AP1140 Local Power Supply (AIR-PWR-A=)
Power Draw	AP1140: 12.95 W Note: When deployed using PoE, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point + cabling) to 15.4W.
Warranty	Limited lifetime hardware warranty
Compliance	Standards · Safety: UL 60950-1; CAN/CSA-C22.2 No. 60950-1; UL 2043; IEC 60950-1; EN 60950-1 · Radio approvals: FCC Part 15.247, 15.407; RSS-210 (Canada); EN 300.328, EN 301.893 (Europe); ARIB-STD 33 (Japan); ARIB-STD 66 (Japan); ARIB-STD T71 (Japan); AS/NZS 4268.2003 (Australia and New Zealand); EMI and susceptibility (Class B); FCC Part 15.107 and 15.109; ICES-003 (Canada); VCCI (Japan); EN 301.489-1 and -17 (Europe); EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC · IEEE Standard: IEEE 802.11a/b/g, IEEE 802.11n draft 2.0, IEEE 802.11h, IEEE 802.11d · Security: 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA; 802.1X; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP) · EAP Type(s): Extensible Authentication Protocol-Transport Layer Security (EAP-TLS); EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2); Protected EAP (PEAP) v0 or EAP-MSCHAPv2; PEAPv1 or EAP-Generic Token Card (GTC); EAP-Subscriber Identity Module (SIM) · Multimedia: Wi-Fi Multimedia (WMM™) Other: FCC Bulletin OET-65C; RSS-102

Data Rates Supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11n data rates (2.4 GHz and 5 GHz):			

MCS Index[1]	GI[2] = 800ns		GI = 400ns	
	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	150
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

Note: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Receive Sensitivity	802.11b: -91 dBm @ 1 Mb/s, 2 Mb/s, 5.5 Mb/s; -88 dBm @ 11 Mb/s	802.11g -86 dBm @ 6 Mb/s, 9 Mb/s, 12 Mb/s, 18 Mb/s; -85 dBm @ 24 Mb/s; -83 dBm @ 36 Mb/s; -78 dBm @ 48 Mb/s; -77 dBm @ 54 Mb/s	802.11a: -90 dBm @ 6 Mb/s, 9 Mb/s, 12 Mb/s, 18 Mb/s; -88 dBm @ 24 Mb/s; -85 dBm @ 36 Mb/s; -80 dBm @ 48 Mb/s; -79 dBm @ 54 Mb/s	
	2.4-GHz 802.11n (HT20) -88 dBm @ MCS0 -87 dBm @ MCS1 -86 dBm @ MCS2 -83 dBm @ MCS3 -80 dBm @ MCS4 -76 dBm @ MCS5 -74 dBm @ MCS6 -73 dBm @ MCS7 -87 dBm @ MCS8 -85 dBm @ MCS9 -83 dBm @ MCS10 -80 dBm @ MCS11 -77 dBm @ MCS12 -73 dBm @ MCS13 -71 dBm @ MCS14 -70 dBm @ MCS15	2.4-GHz 802.11n (HT40) -85 dBm @ MCS0 -85 dBm @ MCS1 -83 dBm @ MCS2 -80 dBm @ MCS3 -77 dBm @ MCS4 -72 dBm @ MCS5 -71 dBm @ MCS6 -70 dBm @ MCS7 -85 dBm @ MCS8 -82 dBm @ MCS9 -80 dBm @ MCS10 -76 dBm @ MCS11 -73 dBm @ MCS12 -69 dBm @ MCS13 -67 dBm @ MCS14 -66 dBm @ MCS15	5-GHz 802.11n (HT20) -91 dBm @ MCS0 -91 dBm @ MCS1 -90 dBm @ MCS2 -87 dBm @ MCS3 -84 dBm @ MCS4 -79 dBm @ MCS5 -77 dBm @ MCS6 -76 dBm @ MCS7 -90 dBm @ MCS8 -89 dBm @ MCS9 -86 dBm @ MCS10 -83 dBm @ MCS11 -80 dBm @ MCS12 -75 dBm @ MCS13 -74 dBm @ MCS14 -72 dBm @ MCS15	5-GHz 802.11n (HT40) -78 dBm @ MCS0 -78 dBm @ MCS1 -78 dBm @ MCS2 -78 dBm @ MCS3 -78 dBm @ MCS4 -75 dBm @ MCS5 -73 dBm @ MCS6 -72 dBm @ MCS7 -76 dBm @ MCS8 -76 dBm @ MCS9 -76 dBm @ MCS10 -76 dBm @ MCS11 -76 dBm @ MCS12 -71 dBm @ MCS13 -69 dBm @ MCS14 -68 dBm @ MCS15

1. MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
2. GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Selected Part Number and Ordering Information

Cisco Aironet 1140 Series Access Point	
AIR-LAP1142N-A-K9	Cisco Aironet 1140 Series Access Points, 802.11a/g/n Fixed Unified AP; Int Ant; FCC Cfg (Dual Band)
AIR-LAP1141N-A-K9	Cisco Aironet 1140 Series Access Points, 802.11g/n Fixed Unified AP; Int Ant; FCC Cfg (Single Band)
Cisco Aironet 1140 Series Eco-Pack SKUs and Regulatory Domains	

AIR-LAP1142-AK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas FCC Cnfg, 10 APs
AIR-LAP1142-EK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas ETSI Cnfg, 10 APs
AIR-LAP1142-PK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas JPN2 Cnfg, 10 APs
AIR-LAP1142-SK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas SG Cnfg, 10 APs
AIR-LAP1142-NK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas AU Cnfg, 10 APs
AIR-LAP1142-IK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas EU2 Cnfg, 10 APs
AIR-LAP1142-TK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas Taiwan Cnfg, 10 Aps
AIR-LAP1142-CK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas China Cnfg, 10 APs
AIR-LAP1142-KK9-PR	Cisco Aironet 1140 Series Access Points, 802.11a/g/n LWAPP AP Integrated Antennas Korea Cnfg, 10 APs

For More Information

http://www.cisco.com/go/802.11n

Cisco Aironet 1260 Series Access Points

Cisco Aironet 1260 Series Access Points provide reliable and predictable 802.11n wireless coverage for indoor environments. These enterprise-class access points deliver up to nine times the throughput of 802.11a/g networks for rich-media applications. Designed specifically for challenging environments, the Cisco Aironet 1260 Series supports external antennas and a broad operating-temperature range.

Ideal for Companies That Need These Features

Cisco Aironet 1260 Series
- High-capacity and high-security wireless LAN (WLAN) that provides network reliability for mission-critical applications
- Rugged enterprise-class access point designed for indoor industrial deployments and installations that require antenna versatility
- Cisco M-Drive technology for optimized client performance
- Standard 802.11n performance with standard 802.3af Power over Ethernet (PoE)

Key Features and Benefits

- Cisco Aironet 1260 Series Access Points are 802.11n-certified.
- They provide reliable and predictable wireless LAN (WLAN) coverage to improve the end user's experience with both existing 802.11a/b/g clients and new 802.11n clients. The access points offer a rugged design.
  - Cisco ClientLink technology improves reliability and coverage for established clients.
  - BandSelect improves 5-GHz client connections in mixed client environments.
  - VideoStream uses multicast to improve multimedia applications.

Specifications

Feature	Cisco Aironet 1260 Series Access Point
Software	• Cisco Unified Wireless Network Software Release 7.0 or later.
802.11n Version 2.0 (and Related) Capabilities	• 2x3 MIMO with two spatial streams • Maximal Ratio Combining (MRC) • Legacy beam forming • 20-and 40-MHz channels • PHY data rates up to 300 Mbps • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) • 802.11 DFS (Bin 5) • Cyclic Shift Diversity (CSD) support
External Antenna (sold separately)	Cisco offers the industry's broadest selection of 802.11n antennas delivering optimal coverage for a variety of deployment scenarios.
Interfaces	10/100/1000 autosensing (RJ-45); Management console port (RJ45)
Indicators	Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors.

Frequency Band and 20-MHz Operating Channels	• A (A Regulatory Domain)—2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz); 5.745 to 5.825 GHz; 5 channels • C (C Regulatory Domain)—2.412 to 2.472 GHz; 13 channels; 5.745 to 5.825 GHz; 5 channels • E (E Regulatory Domain)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 11 channels • I (I Regulatory Domain)—2.412 to 2.472 GHz, 13 channels; 5.180 to 5.320 GHz; 8 channels • K (K Regulatory Domain)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.620 GHz, 7 channels; 5.745 to 5.805 GHz, 4 channels	• N (N Regulatory Domain)—2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels • Q (Q Regulatory Domain)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz; 11 channels • S (S Regulatory Domain)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels • T (T Regulatory Domain)—2.412 to 2.462 GHz; 11 channels; 5.280 to 5.320 GHz; 3 channels; 5.500 to 5.700 GHz, 11 channels; 5.745 to 5.825 GHz; 5 channels

Note: Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit: http://www.cisco.com/go/aironet/compliance.

Maximum Number of Non-Overlapping Channels	2.4 GHz • 802.11b • 23 dBm with 2 antennas • 802.11g • 20 dBm with 2 antennas • 802.11n (non-HT duplicate mode) • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas	5 GHz • 802.11a • 20 dBm with 2 antennas • 802.11n non-HT duplicate mode • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas

NOTE: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Maximum Transmit Power	2.4 GHz • 802.11b • 23 dBm with 2 antennas • 802.11g • 20 dBm with 2 antennas • 802.11n (non-HT duplicate mode) • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas	5 GHz • 802.11a • 20 dBm with 2 antennas • 802.11n non-HT duplicate mode • 20 dBm with 2 antennas • 802.11n (HT20) • 20 dBm with 2 antennas • 802.11n (HT40) • 20 dBm with 2 antennas

NOTE: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Available Transmit Power Settings	2.4 GHz • 23 dBm (200 mW) CCK Only • 20 dBm (100 mW) • 17 dBm (50 mW) • 14 dBm (25 mW) • 11 dBm (12.5 mW) • 8 dBm (6.25 mW) • 5 dBm (3.13 mW) • 2 dBm (1.56 mW) • -1 dBm (0.78 mW)	5 GHz • 20 dBm (100 mW) • 17 dBm (50 mW) • 14 dBm (25 mW) • 11 dBm (12.5 mW) • 8 dBm (6.25 mW) • 5 dBm (3.13 mW) • 2 dBm (1.56 mW) • -1 dBm (0.78 mW)

NOTE: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Dimensions (W x L x H)	Access point (without mounting bracket): 8.7 x 8.7 x 1.84 in. (22.1 x 22.1 x 4.7 cm)
Weight	2.3 lbs (1.04 kg)
Environmental	Non-operating (storage) temperature: -40 to 185°F (-40 to 85°C; Operating temperature: -4 to +131°F (-20 to +55°C; Operating humidity: 10 to 90 percent (non-condensing)
System Memory	128 MB DRAM; 32 MB flash
Input Power Requirements	AP1260: 44 to 57 VDC; Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz
Powering Options	• 802.3af Ethernet Switch • Cisco AP1260 Power Injectors (AIR-PWRINJ4=) • Cisco AP1260 Local Power Supply (AIR-PWR-B=)
Warranty	Limited Lifetime Hardware Warranty

Data Rates Supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps			
	802.11n data rates (2.4 GHz and 5 GHz):			

MCS Index[1]	GI[2] = 800ns		GI = 400ns	
	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	150
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

NOTE: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Power Draw	• AP1260: 12.95 W Note: When deployed using Power over Ethernet (PoE), the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point + cabling) to 15.4W.
Receive Sensitivity	• 802.11b (Complementary Code Keying [CCK]): -101 dBm @ 1 Mb/s; -98 dBm @ 2 Mb/s; -92 dBm @ 5.5 Mb/s; -89 dBm @ 11 Mb/s • 802.11g (non HT20): -92 dBm @ 6 Mb/s; -92 dBm @ 9 Mb/s; -92 dBm @ 12 Mb/s; -90 dBm @ 18 Mb/s; -86 dBm @ 24 Mb/s; -84 dBm @ 36 Mb/s; -79 dBm @ 48 Mb/s; -78 dBm @ 54 Mb/s • 802.11a (non HT20): -93 dBm @ 6 Mb/s; -93 dBm @ 9 Mb/s; -92 dBm @ 12 Mb/s; -90 dBm @ 18 Mb/s; -87 dBm @ 24 Mb/s; -84 dBm @ 36 Mb/s; -79 dBm @ 48 Mb/s; -79 dBm @ 54 Mb/s • 2.4-GHz: 802.11n (HT20); -92 dBm @ MCS0; -90 dBm @ MCS1; -88 dBm @ MCS2; -85 dBm @ MCS3; -82 dBm @ MCS4; -77 dBm @ MCS5; -76 dBm @ MCS6; -74 dBm @ MCS7;' -92 dBm @ MCS8; -90 dBm @ MCS9; -87 dBm @ MCS10; -85 dBm @ MCS11; -82 dBm @ MCS12; -77 dBm @ MCS13; -75 dBm @ MCS14; -74 dBm @ MCS15 • 2.4-GHz: 802.11n (HT40); -89 dBm @ MCS0; -87 dBm @ MCS1; -85 dBm @ MCS2; -82 dBm @ MCS3; -79 dBm @ MCS4; -73 dBm @ MCS5; -72 dBm @ MCS6; -70 dBm @ MCS7; -90 dBm @ MCS8; -87 dBm @ MCS9; -85 dBm @ MCS10; -81 dBm @ MCS11; -78 dBm @ MCS12; -74 dBm @ MCS13; -72 dBm @ MCS14; -71 dBm @ MCS15 • 5-GHz: 802.11n (HT20); -93 dBm @ MCS0; -91 dBm @ MCS1; -89 dBm @ MCS2; -86 dBm @ MCS3; -83 dBm @ MCS4; -78 dBm @ MCS5; -77 dBm @ MCS6; -75 dBm @ MCS7; -87 dBm @ MCS8; -87 dBm @ MCS9; -85 dBm @ MCS10; -83 dBm @ MCS11; -79 dBm @ MCS12; -75 dBm @ MCS13; -73 dBm @ MCS14-72 dBm @ MCS15 • 5-GHz: 802.11n (HT40); -91 dBm @ MCS0; -89 dBm @ MCS1; -87 dBm @ MCS2; -83 dBm @ MCS3; -80 dBm @ MCS4; -75 dBm @ MCS5; -74 dBm @ MCS6; -72 dBm @ MCS7; -86 dBm @ MCS8; -85 dBm @ MCS9; -84 dBm @ MCS10; -80 dBm @ MCS11; -77 dBm @ MCS12; -72 dBm @ MCS13; -71 dBm @ MCS14; -70 dBm @ MCS15
Compliance	• Safety:: UL 60950-1; CAN/CSA-C22.2 No. 60950-1; UL 2043; IEC 60950-1; EN 60950-1 • Radio approvals:: FCC Part 15.247, 15.407; RSS-210 (Canada); EN 300.328, EN 301.893 (Europe); ARIB-STD 33 (Japan); ARIB-STD 66 (Japan); ARIB-STD T71 (Japan); AS/NZS 4268.2003 (Australia and New Zealand); EMI and susceptibility (Class B); FCC Part 15.107 and 15.109; ICES-003 (Canada); VCCI (Japan); EN 301.489-1 and -17 (Europe); EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC • IEEE Standard:: IEEE 802.11a/b/g, IEEE 802.11n 2.0, IEEE 802.11h, IEEE 802.11d • Security: 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA; 802.1X; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP) • EAP Type(s): Extensible Authentication Protocol-Transport Layer Security (EAP-TLS); EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2); Protected EAP (PEAP) v0 or EAP-MSCHAPv2; Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST)'; PEAPv1 or EAP-Generic Token Card (GTC); EAP-Subscriber Identity Module (SIM) • Multimedia: Wi-Fi Multimedia (WMM™) • Other: FCC Bulletin OET-65C; RSS-102

1. MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
2. GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Selected Part Number and Ordering Information

Cisco Aironet 1260 Controller-Based Access Point	
Indoor, challenging environments, with external antennas	
AIR-LAP1262N-x-K9	Dual-band controller-based 802.11 a/g/n
AIR-LAP1261N-x-K9	Single-band controller-based 802.11 g/n (Available late 2010)
AIR-LAP1262N-xK910	Eco-pack (dual-band 802.11a/g/n) 10 quantity access points
SMARTnet Services	
CON-SNT-LAP1262x	SMARTnet 8x5xNBD 1260 Series access point (dual-band 802.11 a/g/n)
CON-SNT-LAP1261x	SMARTnet 8x5xNBD 1260 Series access point (single-band 802.11 g/n)
CON-SNT-LAP1262x	SMARTnet 8x5xNBD 10 quantity eco-pack 1260 Series access point (dual-band 802.11a/g/n)
Cisco Wireless LAN Services	
AS-WLAN-CNSLT	Cisco Wireless LAN Network Planning and Design Service
AS-WLAN-CNSLT	Cisco Wireless LAN 802.11n Migration Service
AS-WLAN-CNSLT	Cisco Wireless LAN Performance and Security Assessment Service

Regulatory domains: (x = regulatory domain)
Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit: http://www.cisco.com/go/aironet/compliance.
Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.

Limited Lifetime Hardware Warranty
This Cisco Aironet 1260 Series Access Point comes with a Limited Lifetime Warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media is defect-free for 90 days. For more details, visit: http://www.cisco.com/go/warranty.

Service and Support
Cisco and Cisco Wireless LAN Specialized Partners offer a broad portfolio of end-to-end services based on proven methodologies for planning, designing, implementing, operating, and optimizing the performance of a variety of secure voice and data wireless network solutions, technologies, and strategies. Cisco Wireless LAN Specialized Partners bring application expertise to help deliver a secure enterprise mobility solution with a low total cost of ownership. For more information about Cisco 802.11n planning and deployment services, visit: http://www.cisco.com/go/wirelesslanservices.

For More Information
http://www.cisco.com/go/wireless

Cisco Aironet 1250 Series Access Points

The rugged indoor Cisco Aironet 1250 Series Access Point is designed for challenging RF environments that require the antenna versatility associated with connectorized antennas, a rugged metal enclosure, and a broad operating temperature range. It offers combined data rates of up to 600 Mbps to provide users with mobile access to high-bandwidth data, voice, and video applications. The 802.11n standard provides reliable and predictable WLAN coverage to improve the end-user experience for both existing 802.11a/b/g clients and new 802.11n clients.

Ideal for Companies That Need These Features

Cisco Aironet 1250 Series
- High-capacity and high-security WLAN that provides network reliability for mission-critical applications
- Rugged enterprise-class access point designed for indoor industrial deployments and installations that require antenna versatility
- Cisco M-Drive technology for optimized client performance

Key Features and Benefits

- Cisco Aironet 1250 Series Access Points are 802.11n certified.
- They provide reliable and predictable WLAN coverage to improve the end user's experience with both existing 802.11a/b/g clients and new 802.11n clients. With these wireless access points, you can augment throughput for high-bandwidth wireless applications, protect your investment in wireless networking, and increase network reliability for mission-critical applications.
- This platform delivers data rates of 300 Mbps per radio; multiple-input, multiple-output technology for enhanced reliability; 2.4- and 5-GHz radio modules, and tested interoperability with leading 802.11n devices.

Specifications

Feature	Cisco Aironet 1250 Series Access Point	
Software	· Cisco IOS Software Release 12.4(10b)JA or later (Autonomous Mode). · Cisco IOS Software Release 12.4(10b)JX or later (Unified Mode). · Cisco Unified Wireless Network Software Release 7.0 or later.	
Draft 802.11n Version 2.0 (and Related) Capabilities	· 2x3 MIMO with two spatial streams · Maximal Ratio Combining (MRC) · Legacy beam forming (hardware supports this capability; not yet enabled in software) · 20-and 40-MHz channels · PHY data rates up to 300 Mbps · Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) · 802.11 DFS (Bin 5) · Cyclic Shift Diversity (CSD) support	
Frequency Band and 20-MHz Operating Channels	· A (Americas (FCC))—2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 8 channels (excludes 5.600 to 5.640 GHz); 5.745 to 5.825 GHz; 5 channels · C (China)—2.412 to 2.472 GHz; 13 channels; 5.745 to 5.825 GHz; 5 channels · E (ETSI)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.700 GHz, 11 channels · I (Israel)—2.412 to 2.472 GHz, 13 channels; 5.180 to 5.320 GHz; 8 channels · K (Korea)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.500 to 5.620 GHz, 7 channels; 5.745 to 5.805 GHz, 4 channels	· N (Non-FCC)—2.412 to 2.462 GHz; 11 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels · P (Japan2)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels · S (Singapore)—2.412 to 2.472 GHz; 13 channels; 5.180 to 5.320 GHz; 8 channels; 5.745 to 5.825 GHz; 5 channels · T (Taiwan)—2.412 to 2.462 GHz; 11 channels; 5.280 to 5.320 GHz; 3 channels; 5.500 to 5.700 GHz, 11 channels; 5.745 to 5.825 GHz; 5 channels
Maximum Number of Non-Overlapping Channels	2.4 GHz—802.11b/g:20 MHz: 3; 802.11n: 20 MHz: 3, 40 MHz: 1	5 GHz—802.11a: 20 MHz: 21; 802.11n: 20 MHz: 21. 40 MHz: 9

NOTE: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Maximum Transmit Power	· 2.4GHz: 802.11b; 23 dBm with 1 antenna; 802.11g; 20 dBm with 1 antenna; 802.11n (HT20); 17 dBm with 1 antenna; 20 dBm with 2 antennas; 802.11n (HT40); 17 dBm with 1 antenna; 20 dBm with 2 antennas · 5GHz: 802.11a; 17 dBm with 1 antenna; 802.11n non-HT duplicate (802.11a duplicate) mode; 17 dBm with 1 antenna; 802.11n (HT20); 17 dBm with 1 antenna; 20 dBm with 2 antennas; 802.11n (HT40); 17 dBm with 1 antenna; 20 dBm with 2 antennas

NOTE: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Data Rates Supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps
	802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
	802.11n data rates (2.4 GHz and 5 GHz):

MCS Index[1]	GI[2] = 800ns		GI = 400ns	
	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)	20-MHz Rate (Mbps)	40-MHz Rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	157.5
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

NOTE: This varies by regulatory domain. Refer to the product documentation for specific details for each regulatory domain.

Available Transmit Power Settings	· 2.4 GHz: 23 dBm (200 mW); 20 dBm (100 mW); 17 dBm (50 mW); 14 dBm (25 mW); 11 dBm (12.5 mW); 8 dBm (6.25 mW); 5 dBm (3.13 mW); 2 dBm (1.56 mW); -1 dBm (0.78 mW) · 5 GHz: 20 dBm (100 mW); 17 dBm (50 mW); 14 dBm (25 mW); 11 dBm (12.5 mW); 8 dBm (6.25 mW); 5 dBm (3.13 mW); 2 dBm (1.56 mW); -1 dBm (0.78 mW)

NOTE: The maximum power setting will vary by channel and according to individual country regulations. Refer to the product documentation for specific details.

Antenna Connectors	2.4-GHz: 3 RP-TNC connectors; 5-GHz: 3 RP-TNC connectors
Interfaces	10/100/1000 autosensing (RJ-45); Management console port (RJ45)
Indicators	Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status; Ethernet LED indicates activity over the Ethernet, status; Radio LED indicates activity over the radio, status.
Modularity	Number of radio module slots: 2; Available radio modules
Dimensions (W x L x H)	· AP (without mounting bracket): 8.12 x 9.52 x 2.35 in. (20.62 x 24.18 x 5.97 cm) · AP (with mounting bracket): 8.12 x 9.52 x 2.75 in. (20.62 x 24.18 x 6.99 cm)
Weight	AP with 2 radios installed: 5.1 lbs (2.31 kg); AP chassis: 2.1 lbs (0.95 kg); 2.4 GHz radio: 1.5 lbs (0.68 kg); 5 GHz radio: 1.5 lbs (0.68 kg)
Environmental	Non-operating (storage) temperature: -40 to 185°F (-40 to 85°C; Operating temperature: -4 to +131°F (-20 to +55°C; Operating humidity: 10 to 90 percent (non-condensing)
System Memory	64 MB DRAM; 32 MB flash
Input Power Requirements	AP1250: 36 to 57 VDC; Power Supply and Power Injector: 100 to 240 VAC; 50 to 60 Hz
Powering Options	Cisco Catalyst switch port capable of sourcing 18.5W or greater; Cisco AP1250 Power Injector (AIR-PWRINJ4); Cisco AP1250 Local Power Supply (AIR-PWR-SPLY1); 802.3af switch (AP1250 with single radio only)
Warranty	Limited Lifetime Hardware Warranty
Power Draw	· AP1250 with two RM1252 radio modules installed: 16.9 W · AP1250 with one RM1252 radio module installed: 12.95 W

NOTE: For an AP1250 with two radios, 16.9 W is the maximum power required at the access point (powered device). When deployed using PoE, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the interconnecting cable. This additional power may be as high as 1.6W, bringing the total system power draw (access point + cabling) to 18.5 W. A similar consideration applies for an AP1250 with one radio.

Wireless Network Standards and Wi-Fi Certification	· IEEE Standard: IEEE 802.1 1a; IEEE 802.1 1b; IEEE 802.1 1g; IEEE 802.1 1n; IEEE 802.1 1h; IEEE 802.1 1d · Security: WPA™: Enterprise, Personal; WPA2™: Enterprise, Personal · EAP Type(s): EAP-Transport Layer Security (TLS); EAP-Tunneled TLS(TTLS)/Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2); Protected EAP (PEAP)v0/EAP-MSCHAPv2; PEAPv1/EAP-Generic Token Card (GTC); EAP-SIM · Multimedia: WMM™
Receive Sensitivity	· 802.1 1a: -86 dBm @ 6 Mb/s; -85 dBm @ 9 Mb/s; -82 dBm @ 12 Mb/s; -81 dBm @ 18 Mb/s; -80 dBm @ 24 Mb/s; -79 dBm @ 36 Mb/s; -74 dBm @ 48 Mb/s; -73 dBm @ 54 Mb/s · 802.1 1b: -90 dBm @ 1 Mb/s; -89 dBm @ 2 Mb/s; -87 dBm @ 5.5 Mb/s; -85 dBm @ 11 Mb/s · 802.1 1g: -87 dBm @ 6 Mb/s; -86 dBm @ 9 Mb/s; -83 dBm @ 12 Mb/s; -82 dBm @ 18 Mb/s; -81 dBm @ 24 Mb/s; -80 dBm @ 36 Mb/s; -75 dBm @ 48 Mb/s; -74 dBm @ 54 Mb/s · 5-GHz: 802.1 1n (HT20); -85 dBm @ MC0; -84 dBm @ MC1; -83 dBm @ MC2; -82 dBm @ MC3; -79 dBm @ MC4; -74 dBm @ MC5; -73 dBm @ MC6; -72 dBm @ MC7; -85 dBm @ MC8; -84 dBm @ MC9; -83 dBm @ MC10; -82 dBm @ MC11; -79 dBm @ MC12; -74 dBm @ MC13; -73 dBm @ MC14; -72 dBm @ MC15 · 5-GHz: 802.1 1n (HT40); -85 dBm @ MC0; -84 dBm @ MC1; -83 dBm @ MC2; -79 dBm @ MC3; -76 dBm @ MC4; -71 dBm @ MC5; -70 dBm @ MC6; -69 dBm @ MC7; -85 dBm @ MC8; -84 dBm @ MC9; -83 dBm @ MC10; -79 dBm @ MC11; -76 dBm @ MC12; -71 dBm @ MC13; -70 dBm @ MC14; -69 dBm @ MC15 · 2.4-GHz: 802.1 1n (HT20); -86 dBm @ MC0; -85 dBm @ MC1; -84 dBm @ MC2; -83 dBm @ MC3; -80 dBm @ MC4; -75 dBm @ MC5; -74 dBm @ MC6; -73 dBm @ MC7; -86 dBm @ MC8; -85 dBm @ MC9; -84 dBm @ MC10; -83 dBm @ MC11; -80 dBm @ MC12; -75 dBm @ MC13; -74 dBm @ MC14; -73 dBm @ MC15 · 2.4-GHz: 802.1 1n (HT40); -86 dBm @ MC0; -85 dBm @ MC1; -84 dBm @ MC2; -80 dBm @ MC3; -77 dBm @ MC4; -72 dBm @ MC5; -71 dBm @ MC6; -70 dBm @ MC7; -86 dBm @ MC8; -85 dBm @ MC9; -84 dBm @ MC10; -80 dBm @ MC11; -77 dBm @ MC12; -72 dBm @ MC13; -71 dBm @ MC14; -70 dBm @ MC15
Compliance	Standards · Safety: UL 60950-1; CAN/CSA-C22.2 No. 60950-1; UL 2043; IEC 60950-1; EN 60950-1 · Radio approvals: FCC Part 15.247, 15.407; RSS-210 (Canada); EN 300.328, EN 301.893 (Europe); ARIB-STD 33 (Japan); ARIB-STD 66 (Japan); ARIB-STD T71 (Japan); AS/NZS 4268.2003 (Australia and New Zealand); EMI and susceptibility (Class B); FCC Part 15.107 and 15.109; ICES-003 (Canada); VCCI (Japan); EN 301.489-1 and -17 (Europe); EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC · Security: 802.1 1i, WPA2, WPA; 802.1X; AES, TKIP · Other: FCC Bulletin OET-65C; RSS-102

1. MCS Index: The Modulation and Coding Scheme (MCS) index determines the number of spatial streams, the modulation, the coding rate, and data rate values.
2. GI: A Guard Interval (GI) between symbols helps receivers overcome the effects of multipath delays.

Selected Part Numbers and Ordering Information

Cisco Aironet 1250 Series Access Point	
AIR-AP1252AG-A-K9	802.11a/g/n-draft 2.0 2.4/5-GHz Modular Autonomous AP; 6 RP-TNC; FCC configuration
AIR-AP1252G-A-K9	802.11g/n-draft 2.0 2.4-GHz Modular Autonomous AP; 3 RP-TNC; FCC configuration
AIR-LAP1252AG-A-K9	802.11a/g/n-draft 2.0 2.4/5-GHz Modular Unified AP; 6 RP-TNC FCC configuration
AIR-LAP1252G-A-K9	802.11g/n-draft 2.0 2.4-GHz Modular Unified AP; 3 RP-TNC; FCC configuration
Cisco Aironet 1250 Series Eco-Pack	
AIR-LAP1252-A-K9-5	802.11a/g/n 2.4/5 GHz Mod Unified AP, FCC, 5 APs
AIR-LAP1252-E-K9-5	802.11a/g/n 2.4/5 GHz Mod Unified AP, ETSI, 5 APs
AIR-LAP1252-N-K9-5	802.11a/g/n 2.4/5 GHz Mod Unified AP, Non-FCC, 5 APs
AIR-AP1252-N-K9-5	802.11a/g/n 2.4/5 GHz Mod Auto AP, Non-FCC, 5 APs

For More Information
http://www.cisco.com/go/802.11n

Cisco Aironet 1240 Series Access Points

Cisco Aironet 1240 Series IEEE 802.11a/b/g Access Points deliver the versatility, high capacity, security, and enterprise-class features demanded by wireless LAN (WLAN) customers. They are designed specifically for challenging RF environments such as factories, warehouses, and large retail establishments that require the antenna versatility associated with connectorized antennas, a rugged metal enclosure, and a broad operating temperature range. The Cisco Aironet 1240 Series provides local as well as inline power, including support for IEEE 802.3af Power over Ethernet (PoE). These access points are ideal for factories, warehouses and retailers.

Ideal for Companies That Need These Features

Cisco Aironet 1240 Series Access Point
- Rugged enterprise-class access point designed for indoor industrial deployments and installations that require antenna versatility
- Optional software allows the access point to be configured to support enterprise wireless mesh

Key Features and Benefits

- The Cisco Aironet 1240 Series Access Points have integrated 802.11a/b/g radios.
- They are available in an 802.11g-only version for countries that do not allow 5 GHz.
- Connectors offer a variety of both 2.4- and 5-GHz antennas.
- These access points are orderable as autonomous or lightweight access points.
- They can be configured to function as an access point or bridge, enabling a broad array of applications.
- Four power options offer deployment flexibility and cost savings: 802.3af, Cisco Power over Ethernet (PoE), Cisco Power Injector, or a local power supply.

Specifications

Feature	Cisco Aironet 1240 Series Access Point
Software	• Cisco IOS Software Release 12.4(10b)JA or later (Autonomous Mode) • Cisco IOS Software Release 12.4(10b)JX or later (Unified Mode) • Cisco Unified Wireless Network Software Release 4.2 or later
Data Rates Supported	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Network Standards	IEEE 802.11a/b/g
Uplink	Autosensing 802.3 10/100BASE-T Ethernet
Frequency Band and Operating Channels	Americas (FCC): 2.412 to 2.462 GHz-11 channels, 5.15 to 5.35, 5.725 to 5.825 GHz-12 channels; China: 2.412 to 2.472 GHz-13 channels, 5.725 to 5.825 GHz-4 channels; ETSI: 2.412 to 2.472 GHz-13 channels, 5.15 to 5.725 GHz-19 channels; Japan (TELEC): 2.412 to 2.472 GHz-13 channels Orthogonal Frequency Division Multiplexing (OFDM), 2.412 to 2.484 GHz-14 channels Complementary Code Keying (CCK), 5.15 to 5.25 GHz-4 channels; North America: 2.412 to 2.462 GHz-11 channels, 5.15 to 5.35, 5.725 to 5.825 GHz-12 channels; Singapore: 2.412 to 2.472 GHz-13 channels, 5.15 to 5.25 GHz and 5.725 to 5.825 GHz-8 channels; Taiwan: 2.412 to 2.462 GHz-11 channels, 5.25 to 5.35 GHz and 5.725 to 5.825 GHz-8 channels

Non-Overlapping Channels	· 802.11a: 12 channels (FCC; other regulatory domains support different numbers of 802.11a channels) · FCC currently supports 12 non-overlapping channels, with potentially up to 23 channels via a future firmware release depending on FCC rules; 802.11b/g: 3 channels
Receive Sensitivity	· 802.11a: 6 Mbps: -87 dBm; 9 Mbps: -87 dBm; 12 Mbps: -85 dBm; 18 Mbps: -84 dBm; 24 Mbps: -81 dBm; 36 Mbps: -78 dBm; 48 Mbps: -73 dBm; 54 Mbps: -72 dBm · 802.11g: 6 Mbps: -90 dBm; 9 Mbps: -84 dBm; 12 Mbps: -82 dBm; 18 Mbps: -80 dBm; 24 Mbps: -77 dBm; 36 Mbps: -73 dBm; 48 Mbps: -72 dBm; 54 Mbps: -72 dBm
Antenna	2.4 GHz: Dual RP-TNC connectors; 5 GHz: Dual RP-TNC connectors
LEDs	Status LED indicates operating state, association status, error/warning condition, boot sequence, and maintenance status; Ethernet LED indicates activity over the Ethernet, status; Radio LED indicates activity over the radio, status
Dimensions (H x W x D)	6.6 x 8.5 x 1.1 in. (16.76 x 21.59 x 2.79 cm)
Weight	2.0 lbs
Environmental	· Non operating (storage) temperature: 40 to 185ûF (-40 to 85ûC); · Operating temperature:-4 to +131ûF (-20 to +55ûC) · Operating/noncondensing humidity: 10 to 90 percent
System Memory	32 MB RAM; 16 MB flash
Input Power Requirements	100 to 240 VAC; 50 to 60Hz (power supply); 36 to 57 VDC (device)
Power Draw	12.95W[1] maximum
Warranty	One year
Range[2]	· Indoor-802.11a: 85 ft (26 m) @ 54 Mbps; 150 ft (46 m) @ 48 Mbps; 210 ft (64 m) @ 36 Mbps; 230 ft (70 m) @ 24 Mbps; 260 ft (79 m) @ 18 Mbps; 280 ft (85 m) @ 12 Mbps; 310 ft (94 m) @ 9 Mbps; 330 ft (100 m) @ 6 Mbps; 802.11g: 105 ft (32 m) @ 54 Mbps; 180 ft (55 m) @ 48 Mbps; 260 ft (79 m) @ 36 Mbps; 285 ft (87 m) @ 24 Mbps; 330 ft (100 m) @ 18 Mbps; 355 ft (108 m) @ 12 Mbps; 365 ft (111 m) @ 11 Mbps; 380 ft (116 m) @ 9 Mbps; 410 ft (125 m) @ 6 Mbps; 425 ft (130 m) @ 5.5 Mbps; 445 ft (136 m) @ 2 Mbps; 460 ft (140 m) @ 1 Mbps; · Outdoor-802.11a: 100 ft (30 m) @ 54 Mbps; 300 ft (91 m) @ 48 Mbps; 425 ft (130 m) @ 36 Mbps; 500 ft (152 m) @ 24 Mbps; 550 ft (168 m) @ 18 Mbps; 600 ft (183 m) @ 12 Mbps; 625 ft (190 m) @ 9 Mbps; 650 ft (198 m) @ 6 Mbps; 802.11g: 120 ft (37 m) @ 54 Mbps; 350 ft (107 m) @ 48 Mbps; 550 ft (168 m) @ 36 Mbps; 650 ft (198 m) @ 24 Mbps; 750 ft (229 m) @ 18 Mbps; 800 ft (244 m) @ 12 Mbps; 820 ft (250 m) @ 11 Mbps; 875 ft (267 m) @ 9 Mbps; 900 ft (274 m) @ 6 Mbps; 910 ft (277 m) @ 5.5 Mbps; 940 ft (287 m) @ 2 Mbps; 950 ft (290 m) @ 1 Mbps;
Power Draw	Local power; 802.3 AF switches; Cisco legacy PoE switches; Cisco Aironet power Injectors (PWRINJ3 and PWRINJ-FIB); Third-party PoE devices (must meet input power and power draw requirements)

1. The maximum power required at the powered device. If the access point is being used in a PoE configuration, the power drawn from the power sourcing equipment will be higher by some amount dependent on the length of the inter-connecting cable. This additional power may be as high as 2.45W, bringing the total system power draw (access point + cabling) to 15.4W.
2. Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ

Selected Part Numbers and Ordering Information

Cisco Aironet 1240AG Series Access Point	
AIR-AP1242AG-A-K9	Cisco Aironet 1240AG 802.11a/g Non-modular Cisco IOS access point; RP-TNC; FCC configuration
AIR-LAP1242AG-A-K9	Cisco Aironet 1240AG 802.11ag Non-modular LWAPP access point; RP-TNC; FCC configuration

Cisco Aironet 1240G Series Access Point	
AIR-AP1242G-A-K9	Cisco Aironet 1240AG 802.11g non-modular Cisco IOS access point; RP-TNC; FCC configuration

Cisco Aironet 1240AG Series Eco-Pack SKUs and Regulatory Domains	
AIR-LAP1242-AK9-10	Cisco Aironet 1240AG 802.11ag LWAPP AP Dual 2.4,5GHz RP-TNC FCC Cnfg,10 APs
AIR-LAP1242-EK9-10	Cisco Aironet 1240AG 802.11a/g LWAPP AP Dual 2.4,5GHz RP-TNC ETSI Cnfg,10 APs
AIR-AP1242-A-K9-10	Cisco Aironet 1240AG 802.11a/g Non-modular IOS AP; RP-TNC; FCC Cnfg,10 APs
AIR-AP1242-E-K9-10	Cisco Aironet 1240AG 802.11a/g Non-modular IOS AP; RP-TNC; ETSI Cnfg,10 APs

For More Information
http://www.cisco.com/go/wireless

Cisco Aironet 1130 Series Access Points

The Cisco Aironet 1130 Access Points package high capacity, high security, and enterprise-class features to deliver wireless LAN (WLAN) access for a low total cost of ownership. Designed for WLAN coverage in offices and similar RF environments, these unobtrusive access points feature integrated antennas and dual IEEE 802.11a/g radios for robust and predictable coverage, delivering a combined capacity of 108 Mbps. These competitively priced access points are ready to install and easy to manage, reducing the cost of deployment and ongoing maintenance. Cisco Aironet 1130 Access Points are available in a lightweight version, an autonomous version that can be field-upgraded to lightweight operation, and a single-band 802.11g version for use in regulatory domains that do not allow 802.11a 5-GHz operation.

Ideal for Companies That Need These Features

Cisco Aironet 1130 Series
- High-capacity and high-security WLAN in the enterprise office
- Low-profile access point that blends into the environment and is easy to deploy
- Optional WirelessPLUS software allows the access point to be configured to support the OfficeExtend solution for wireless teleworking.
- Optional software allows the access point to be configured to support enterprise wireless mesh

Key Features and Benefits

- 802.11a/g radios with simultaneous dual-band support provide 108-Mbps capacity.
- These access points are available in an 802.11g-only version for countries that do not allow 5 GHz.
- Optional WirelessPLUS software allows the access point to be configured to support the OfficeExtend solution for wireless teleworking.
- Optional software allows the access point to be configured to support enterprise wireless mesh.

Specifications

Feature	Cisco Aironet 1130 Series Access Point
Data rates supported	802.11a: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps; 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Software	• Cisco IOS Software Release 12.4(10b)JA or later (Autonomous Mode) • Cisco IOS Software Release 12.4(10b)JX or later (Unified Mode) • Cisco Unified Wireless Network Software Release 7.0 or later
Network standard	IEEE 802.11a, 802.11b and 802.11g
Uplink	Autosensing 802.3 10/100BaseT Ethernet
Non-overlapping channels	802.11a—Up to 19; 802.11b/g—3
SNMP compliance	MIB I and MIB II
Antennas	2.4 GHz: Gain 3.0 dBi, Horizontal Beamwidth 360°; 5 GHz: Gain 4.5 dBi, Horizontal Beamwidth 360°
Frequency band and Operating Channels	• Americas (FCC): 2.412 to 2.462 GHz; 11 channels, 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels • China: 2.412 to 2.472 GHz; 13 channels, 5.725 to 5.825 GHz; 4 channels • ETSI: 2.412 to 2.472 GHz; 13 channels, 5.15 to 5.725 GHz; 19 channels • Israel: 2.432 to 2.472 GHz; 9 channels, 5.15 to 5.35 GHz, 8 channels • Japan (TELEC): 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM), 2.412 to 2.484 GHz; 14 channels Complementary Code Keying (CCK), 5.15 to 5.25 GHz; 4 channels • Japan-P (TELEC 2 (Japan2) Config): 2.412 to 2.472 GHz; 13 channels Orthogonal Frequency Division Multiplexing (OFDM), 5.15 to 5.35 GHz, 8 channels • Korea: 2.412 to 2.472 GHz; 13 channels, 5.15 to 5.35, 5.46 to 5.72, 5.725 to 5.825, 19 channels • North America: 2.412 to 2.462 GHz; 11 channels, 5.15 to 5.35, 5.725 to 5.825 GHz; 12 channels • Singapore: 2.412 to 2.472 GHz, 13 channels, 5.15 to 5.35 GHz, 8 channels and 5.725 to 5.825 GHz, 12 channels • Taiwan: 2.412 to 2.462 GHz, 11 channels, 5.25-5.35 GHz, 5.725 to 5.825, 7 channels
Receive sensitivity	802.11a— 6 Mbps: -87 dBm, 9 Mbps: -86 dBm, 12 Mbps: -85 dBm, 18 Mbps: -84 dBm, 24 Mbps: -80 dBm, 36 Mbps: -78 dBm, 48 Mbps: -73 dBm, 54 Mbps: -71 dBm; 802.11g—1 Mbps: -93 dBm, 2 Mbps: -91 dBm, 5.5 Mbps: -88 dBm, 6 Mbps: -86 dBm, 9 Mbps: -85 dBm, 11 Mbps: -85 dBm, 12 Mbps: -84 dBm, 18 Mbps: -83 dBm, 24 Mbps: -79 dBm, 36 Mbps: -77 dBm, 48 Mbps: -72 dBm, 54 Mbps: -70 dBm
Available transmit power settings	• 802.11a: OFDM: 50 mW (17 dBm), 32 mW (15 dBm), 25 mW (14 dBm), 10 mW (11 dBm), 5 mW (8 dBm), 3 mW (5 dBm), 2 mW (2 dBm), 1 mW (-1 dBm); 802.11g: CCK—100 mW (20 dBm), 50 mW (17 dBm), 25 mW (14 dBm), 12 mW (11 dBm), 6 mW (8 dBm), 3 mW (5 dBm), 2 mW (2 dBm), 1 mW (-1 dBm); OFDM—50 mW (17 dBm), 25 mW (14 dBm), 10 mW (11 dBm), 5 mW (8 dBm), 3 mW (5 dBm), 1 mW (2 dBm), 1 mW (-1 dBm • Maximum power setting will vary by channel and according to individual country regulations.

Status LEDs	· External: Status LED indicates operating state, association status, error/warning condition, boot sequence and maintenance status · Internal: Ethernet LED indicates activity over the Ethernet, status; Radio LED indicates activity over the radios, status
Dimensions (H x W x D)	7.5 x 7.5 x 1.3 in. (19.1 x 19.1 x 3.3 cm)
Weight	1.5 lbs. (0.67 kg)
Range	· Indoor (Distance across open office environment): 802.11a: 80 ft (24 m) @ 54 Mbps, 150 ft (45 m) @ 48 Mbps, 200 ft (60 m) @ 36 Mbps, 225 ft (69 m) @ 24 Mbps, 250 ft (76 m) @ 18 Mbps, 275 ft (84 m) @ 12 Mbps, 300 ft (91 m) @ 9 Mbps, 325 ft (100 m) @ 6 Mbps; 802.11g: 1000 ft (30 m) @ 54 Mbps, 175 ft (53 m) @ 48 Mbps, 250 ft (76 m) @ 36 Mbps, 275 ft (84 m) @ 24 Mbps, 325 ft (100 m) @ 18 Mbps, 350 ft (107 m) @ 12 Mbps, 360 ft (110 m) @ 11 Mbps, 375 ft (114 m) @ 9 Mbps, 400 ft (122 m) @ 6 Mbps · Outdoor: 802.11a: 100 ft (30 m) @ 54 Mbps, 300 ft (91 m) @ 48 Mbps, 425 ft (130 m) @ 36 Mbps, 500 ft (152 m) @ 24 Mbps, 550 ft (168 m) @ 18 Mbps, 600 ft (183 m) @ 12 Mbps, 625 ft (190 m) @ 9 Mbps, 650 ft (198 m) @ 6 Mbps; 802.11g: 120 ft (37 m) @ 54 Mbps; 350 ft (107 m) @ 48 Mbps; 550 ft (168 m) @ 36 Mbps; 650 ft (198 m) @ 24 Mbps; 750 ft (229 m) @ 18 Mbps; 800 ft (244 m) @ 12 Mbps; 820 ft (250 m) @ 11 Mbps; 875 ft (267 m) @ 9 Mbps; 900 ft (274 m) @ 6 Mbps; 910 ft (277 m) @ 5.5 Mbps; 940 ft (287 m) @ 2 Mbps; 950 ft (290 m) @ 1 Mbps · Ranges and actual throughput vary based upon numerous environmental factors so individual performance may differ.
Compliance	Customers are responsible for verifying approval for use in their country; see http://www.cisco.com/go/aironet/compliance.
Security architecture client authentication and encryption (Cisco Wireless Security Suite supporting WPA and WPA2)	· Security Standards: WPA, WPA2 (802.11i), Cisco TKIP, Cisco message integrity check (MIC), IEEE 802.11 WEP keys of 40 bits and 128 bits · 802.1X EAP types: EAP-FAST, PEAP-GTC, PEAP-MSCHAP, EAP-TLS, EAP-TTLS, EAP-SIM, Cisco LEAP · Encryption: AES-CCMP encryption (WPA2), TKIP (WPA), Cisco TKIP, WPA TKIP, IEEE 802.11 WEP keys of 40 bits and 128 bits
Environmental	32-104º F (0-40º C); 10-90% humidity (non-condensing)
System Memory	32 MB RAM; 16 MB FLASH
Input Power Req	100-240 VAC 50-60Hz (power supply); 36-57 VDC (device)
Power Draw	12.2 watts, max
Warranty	One year

Selected Part Numbers and Ordering Information

Cisco Aironet 1130AG Series Access Point	
AIR-AP1131AG-A-K9	802.11a/g Non-modular IOS AP; Integrated Antennas; Israel Cnfg
AIR-LAP1131AG-A-K9	802.11a/g Non-modular LWAPP AP; Integrated Antennas; FCC Cnfg
Cisco Aironet 1130G Series Access Point	
AIR-AP1131G-A-K9	802.11g Non-modular IOS AP; Integrated Antennas; Israel Cnfg
AIR-LAP1131G-A-K9	802.11g Non-modular LWAPP AP; Integrated Antennas; FCC Cnfg
Cisco Aironet 1130AG Series Access Point 10 Unit Eco Pack	
AIR-AP1130-A-K9-10	802.11g Non-modular IOS AP; Integrated Antennas; 10 APs FCC Cnfg
AIR-LAP1130-A-K9-10	802.11g Non-modular LWAPP AP; Integrated Antennas;10 APs FCC Cnfg

For More Information

http://www.cisco.com/go/wireless

Cisco Aironet 1520 Series Lightweight Outdoor Wireless Mesh Access Point

The Cisco Aironet 1520 Series Lightweight Outdoor Access Points are a flexible, secure, and scalable mesh platform that is designed for deployments across large metropolitan-sized areas. As part of the Cisco Unified Network architecture, the wireless mesh can be seamlessly deployed as an extension of wired and wireless networks, with central management through controllers and the Cisco Wireless Control System. The unified architecture centralizes critical functions of the wireless LAN to provide scalable management, advanced security, seamless mobility, and proven reliability. With maximum ratio combining (MRC) technology, the access points provide greater access range for consumer-grade client devices throughout the wireless mesh network. Rugged enclosures allow deployment in extreme weather and hazardous environments, and can be painted to adapt to local aesthetics. The Cisco Aironet 1520 Series includes the Cisco Aironet 1522AG, 1522HZ, 1522CV, and the Cisco Aironet 1524SB, 1524PS, and 1523 CV Lightweight Outdoor Mesh Access Points.

Key Features and Benefits

- Self-configuring and self-healing in response to interference and outages
- Multiple-radio support (802.11a, 802.11b/g, licensed for 4.9-GHz public safety applications)
- Improved 802.11b/g radio sensitivity and range performance with maximal ratio combining (MRC)
- Multiple uplink options (Gigabit Ethernet-10/100/1000BaseT, Fiber SFP interface, cable modem backhaul in some models)
- Internal battery backup power
- 802.3af-compliant Power over Ethernet interface to connect IP devices
- NEMA Type 4X certified enclosure
- FIPS 140-2 certificate

Specifications

Feature	Cisco Aironet 1520 Series Lightweight4 Outdoor Wireless Access Point		
Wireless standards	· 802.11a · 802.11b/g · Public safety 4.9 GHz (5, 10, 20 MHz channels)		
Data rates and modulation	· 802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, Orthogonal Frequency Division Multiplexing (OFDM) · 802.11b: 11, 5.5, 2, 1 Mbps, Direct Sequence Spread Spectrum (DSSS) · 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, OFDM 4.9 GHz: · 5 MHz: 13.5, 12, 9, 6, 4. 5, 3, 2.25, 1.5 Mbps · 10 MHz: 27, 24, 18, 12, 9, 6, 4.5, 3 Mbps · 20 MHz: 54, 48, 36, 24, 18, 12, 9, 6 Mbps		
Maximum Transmit Power (Varies by channel and data rate)	2.4 GHz	5 GHz	4.9 GHz
	Cisco 1522AG		
	-A 28 dBm -C 14 dBm -E 14 dBm -K 14 dBm -N 28 dBm -P 16 dBm -S 14 dBm -T 28 dBm	-A 28 dBm -C 22 dBm -E 22 dBm -K 19 dBm -N 28 dBm -P 20 dBm -S 22 dBm -T 28 dBm	-A 20 dBm
	Cisco 1524SB		
	-A 28 dBm -C 14 dBm -N 28 dBm -E 14 dBm -M 14 dBm -K 14 dBm -S 14 dBm -T 28 dBm	-A 28 dBm -C 22 dBm -N 28 dBm -E 22 dBm -M 22 dBm -K 19 dBm -S 22 dBm -T 28 dBm	
	Cisco 1524PS		
	-A 28 dBm	-A 28 dBm	-A 26 dBm
Network Interface	· 10/100/1000BASE-T Ethernet, autosensing (RJ-45) · Fiber SFP · Cable modem backhaul/interface (only available on 1522CV and 1523CV models)		
Dimensions (W x L x H)	12.0 in. x 7.8 in. x 6.4 in. (30.48 cm x 19.81 cm x 16.26 cm) (including antenna mount)		
Weight	1522AG—17 lbs (7.9 kg) 1522CV—17 lbs (7.9 kg) 1522HZ—18 lbs (8.0 kg) 1524SB—18 lbs (8.4 kg) 15223CV—18 lbs (8.4 kg) Battery backup: 2 lbs (0.7kg) Mounting bracket: 6 lbs (2.8 Kg)		
Powering Options	· 90-480 VAC, 47-63 Hz · Power over Ethernet: 48 VDC, +/-10 percent · 12 VDC		
Receive Sensitivity (typical)	· 802.11a 5.0 GHz: 6 Mbps: -91 dBm; 9 Mbps: -90 dBm; 12 Mbps: -89 dBm; 18 Mbps: -86 dBm; 24 Mbps: -84 dBm; 36 Mbps: -80 dBm; 48 Mbps: -76 dBm; 54 Mbps: -73 dBm · 802.11b: 1 Mbps: -96 dBm; 2 Mbps: -96 dBm, 5.5 Mbps: -95dBm; 11 Mbps: -92 dBm · 802.11g with MRC: 1 Mbps: -96 dBm; 2 Mbps: -96 dBm; 5.5 Mbps: -95 dBm; 6 Mbps: -91 dBm; 9 Mbps: -91 dBm; 11 Mbps: -92 dBm; 12 Mbps: -91 dBm; 18 Mbps: -90 dBm; 24 Mbps: -89 dBm; 36 Mbps: -86 dBm; 48 Mbps: -80 dBm; 54 Mbps:-80 dBm · 4.9 GHz, 5MHz: 1.5 Mbps: -93 dBm; 2.25 Mbps: -93 dBm; 3 Mbps: -93 dBm; 4.5 Mbps: -92 dBm; 6 Mbps: -88 dBm; 9 Mbps: -85 dBm; 12 Mbps: -80 dBm; 13.5 Mbps: -79 dBm · 4.9 GHz, 10 MHz: 3 Mbps: -92 dBm; 4.5 Mbps: -92 dBm; 6 Mbps: -91 dBm; 9 Mbps: -89 dBm; 12 Mbps: -86 dBm; 18 Mbps: -82 dBm; 24 Mbps: -78 dBm; 27 Mbps: -77 dBm · 4.9 GHz, 20 MHz: 6 Mbps: -89 dBm; 9 Mbps: -89 dBm; 12 Mbps: -88 dBm; 18 Mbps: -86 dBm; 24 Mbps: -83 dBm; 36 Mbps: -80 dBm; 48 Mbps: -75 dBm; 54 Mbps: -74 dBm		

Frequency Band and Operating Channels	Cisco 1522	Cisco 1524SB and 1524HZ	Cisco 1524PS
	A (Americas (FCC)): · 2.401 to 2.473 GHz; 11 channels · 4.940 to 4.990 GHz; · 5MHz-10 channels · 10MHz-5 channels · 20MHz-2 channels · 5.250 to 5.850 GHz; 16 channels (excludes channel 120, 124, 128) C (China): · 2.401 to 2.483 GHz; 13 channels · 5.725 to 5.850 GHz; 5 channels E (ETSI): · 2.401 to 2.483 GHz; 13 channels · 5.470 to 5.725 GHz; 8 channels K (Korea): · 2.401 to 2.483 GHz; 13 channels · 5.250 to 5.560 GHz; 10 channels N (Non-FCC): · 2.401 to 2.473 GHz; 11 channels · 5.725 to 5.850 GHz; 5 channels P (Japan2): · 2.401 to 2.495 GHz; 14 channels · 4.910 to 5.090 GHz; 6 channels S (Singapore): · 2.401 to 2.483 GHz; 13 channels · 5.725 to 5.850 GHz; 5 channels T (Taiwan): · 2.401 to 2.473 GHz; 11 channels · 5.470 to 5.850 GHz; 16 channels	A (Americas (FCC)): · 2.401 to 2.473 GHz; 11 channels · 5.250 to 5.850 GHz; 16 channels (excludes channel 120, 124, 128) C (China): · 2.401 to 2.473 GHz; 13 channels · 5.725 to 5.850 GHz; 5 channels E (ETSI): · 2.401 to 2.483 GHz; 13 channels · 5.470 to 5.725 GHz; 8 channels K (Korea): · 2.401 to 2.483 GHz; 13 channels · 5.250 to 5.560 GHz; 10 channels N (Non-FCC): · 2.401 to 2.473 GHz; 11 channels · 5.725 to 5.850 GHz; 5 channels S (Singapore): · 2.401 to 2.483 GHz; 13 channels · 5.725 to 5.850 GHz; 5 channels T (Taiwan): · 2.401 to 2.473 GHz; 11 channels · 5.470 to 5.850 GHz; 16 channels	A (Americas (FCC)): · 2.401 to 2.473 GHz; 11 channels · 4.940 to 4.990 GHz; · 5MHz-10 channels · 10MHz-5 channels · 20MHz-2 channels · 5.725 to 5.850 GHz; 5 channels **Cisco 1523CV** A (Americas (FCC)): · 2.401 to 2.473 GHz; 11 channels · 5.250 to 5.850 GHz; 16 channels (excludes channel 120, 124, 128)
Warranty	90 days		
Compliance	Safety · UL 60950; CAN/CSA-C22.2 No. 60950; IEC 60950; EN 60950 Immunity · <= 5 mJ for 6kV/3kA @ 8/20 ms waveform; ANSI/IEEE C62.41; EN61000-4-5 Level 4 AC Surge Immunity; EN61000-4-4 Level 4 Electrical Fast Transient Burst Immunity; EN61000-4-3 Level 4 EMC Field Immunity; EN61000-4-2 Level 4 ESD Immunity; EN60950 Overvoltage Category IV Radio approvals · FCC Part 15.247, 90.210; FCC Bulletin OET-65C; RSS-210; RSS-102; AS/NZS 4268.2003 EMI and susceptibility · FCC part 15.107, 15.109; ICES-003 Security · Wireless bridging/mesh; X.509 digital certificates; MAC address authentication; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TLIP); Wireless access; 802.11i, Wi-Fi Protected Access (WPA2), WPA; 802.1X authentication, including Extensible Authentication Protocol and Protected EAP (EAP-PEAP), EAP-Transport Lauer Security (EAP-TLS), EAP-Tunneled TLS (EAP-TTLS), and Cisco LEAP; Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TLIP); VPN pass-through; IP Security (IPsec), Layer 2 Tunneling Protocol (L2TP); MAC address filtering Other · ATEX (AIR-LAP1522HZ-X-K9 only)		
Environmental	Operating temperature: -40 to 55°C (-40 to 131°F) plus Solar Loading Storage temperature: -50 to 85°C (-58 to 185°F) Wind resistance: · Up to 100 MPH sustained winds · Up to 165 MPH wind gusts		
Environmental ratings	· IP67 · NEMA Type 4X		

Selected Part Numbers and Ordering Information

Cisco Aironet 1520 Series Access Point[1]	
AIR-LAP1522AG-x-K9	802.11a and 802.11b/g radios, AC Power
AIR-LAP1522HZ-x-K9	802.11a and 802.11b/g radios, AC Power, Class 1, Zone/Div 2 certified
AIR-LAP1522CV-A-K9	Designed for Service Providers, 802.11a and 802.11b/g mesh access point, cable modem backhaul (DOCSIS 2.0)
AIR-LAP1524SB-x-K9	Dual 802.11a backhaul and 802.11b/g mesh access point, AC Power
AIR-LAP1524PS-A-K9	802.11a, 802.11b and 4.9 Public Safety mesh access point, AC Power
AIR-LAP1523CV-A-K9	Designed for Service Providers, two 5GHz radios, cable modem backhaul (DOCSIS 2.0).

1. For the specific regional part numbers please see the Cisco 1520 datasheet: http://www.cisco.com/en/US/prod/col-lateral/wireless/ps5679/ps8368/data_sheet_c78-532987.html.

For More Information

http://www.cisco.com/go/1520

Cisco Aironet 1400 Series Wireless Bridge

The Cisco Aironet 1400 Series Wireless Bridge is a 5GHz 802.11a bridge, which has been ruggedized for harsh outdoor environments. It features high power radios for long range point-to-point and point-to-multipoint connectivity. The Aironet 1400 is an autonomous bridge, and provides a cost-effective way to connect multiple LANs over a long distance.

Key Features and Benefits

· Cisco Aironet 1400 Series Wireless Bridges support both point-to-point and point-to-multipoint configurations.
· High power radios for long range connectivity.
· Autonomous bridge that provides cost-effective way to connect multiple LANs.
· The ruggedized enclosure, with an extended operating temperature range, is optimized for harsh outdoor environments.
· Integrated or optional external antennas offer flexibility in deployment.
· The bridges are designed specifically for ease of installation and operation.

Specifications

Feature	AIR-BR1410A-A-K9	AIR-BR1410A-A-K9-N	Power Injector LR
Frequency band	5.725 to 5.825 GHz (FCC UNII 3)		
Wireless modulation	Coded Orthogonal Frequency Division Multiplexing (COFDM)		
Media access protocol	Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)		
Modulation	BPSK @ 6 and 9 Mbps, QPSK @ 12 and 18 Mbps, 16-QAM @ 24 and 36 Mbps, 64-QAM @ 48 and 54 Mbps		
Non-overlapping channels	4		
Receive sensitivity (10% PER with 3200byte packets)	6 Mbps: -83 dBm, 9 Mbps: -83 dBm,12 Mbps: -81 dBm, 18 Mbps: -80 dBm, 24 Mbps: -77 dBm, 36 Mbps: -74 dBm, 48 Mbps: -70 dBm, 54 Mbps: -68 dBm		
Maximum Operational Receive Level	-19 dBm		
Maximum Survivable Receive Level	0 dBm		
Available transmit power settings	250 mW (24 dBm), 200 mW (23 dBm), 155 mW (22 dBm), 125 mW (21 dBm), 60 mW (18 dBm), 30 mW (15 dBm), 15 mW (12 dBm) Maximum power setting will vary according to individual country regulations		
Point-to-point range1	7.5 miles (13 km) @ 54 Mbps, 16 miles (26 km) @ 9 Mbps	12 miles (19 km) @ 54 Mbps, 23 miles (37 km) @ 9 Mbps, (Antennas are 28 dBi dish)	
Point-to-multipoint range (sector antenna at root)2	2 miles (3 km) @ 54 Mbps, 8 miles (13 km) @ 9 Mbps	4 miles (7 km) @ 54 Mbps, 11 miles (18 km) @ 9 Mbps, (Non-root antenna is 28 dBi dish)	
Antenna	Captured Linear Polarization; 22.5dBi gain: 10 E-plane by 12 H-plane beamwidth	One N-Type connector for professional installations (antennas sold separately)	
Security	Cisco Wireless Security Suite—Authentication: 802.1x support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits Pre-standard TKIP WEP enhancements: key hashing (per packet keying) and Message Integrity Check (MIC)		
SNMP compliance	v1 and v2		
Status LEDs	Four LEDs: Install, Radio, Status, Ethernet		Four LEDs: Power ON, Injector status, LAN Ethernet status, Bridge Ethernet status

RSSI port	BNC connector DC Voltage port (0VDC to 2.7 VDC)		NA
Uplink	100 Mbps over dual coaxial cables		10/100BaseT Ethernet
Configuration support	Telnet, HTTP, FTP, TFTP, SNMP	Telnet, HTTP, FTP, TFTP, SNMP	NA
Compliance	Customers are responsible for verifying approval for use in their country. Please see http://www.cisco.com/go/aironet/compliance to verify approval and to identify the regulatory domain that corresponds to a particular country. All regulatory domains may not have been approved. As they are approved, the part numbers will be available on the Global Price List. individual country regulations)		
Dimensions (H x W x D)	11.4 x 11.4 x 4.2 in. (29 x 29 x 11 cm)	11.6 x 11.6 x 3.6 in. (29 x 29 x 9 cm)	6.7 x 6.3 x 1.3 in (17 x 16 x 3 cm)
Weight	11 lbs. (5 kg)	10 lbs. (5 kg)	1.4lbs. (0.6kg)
Operational temperature	-30 to +55ºC (-22 to +131ºF)	-30 to +55ºC (-22 to +131ºF)	0 to +50C (32 to 122F)
Storage temperature	-40 to +85ºC (-40 to +185ºF)	-40 to +85ºC (-40 to +185ºF)	-40 to +70C (-40 to +158F)
Operational altitude	4206 m (13,800 ft.)	4206 m (13,800 ft.)	4206 m (13,800 ft.)
Storage altitude	4877 m (16,000 ft.)	4877 m (16,000 ft.)	4877 m (16,000 ft.)
Humidity	0 to 100% (condensing)	0 to 100% (condensing)	0 to 90% (non-condensing)
Vibration	0.001 G2/Hz from 5 - 100 Hz	0.001 G2/Hz from 5 - 100 Hz	0.001 G2/Hz from 5 - 100 Hz
Storage vibration	0.01 G2/Hz from 5 - 100 Hz	0.01 G2/Hz from 5 - 100 Hz	0.01 G2/Hz from 5 - 100 Hz
Enclosure	Aluminum with environmentally sealed plastic radome	NEMA-4, aluminum	Metal case
AC power	Not Required as uses DC voltage from Power Injector		100 to 240 VAC, +/- 10% (power supply)
DC power	48 VDC +/-2V	48 VDC +/-2V	48 VDC +/-2V
Warranty	One year	One year	One year

Selected Part Numbers and Ordering Information

AIR-BR1410A-A-K9	Aironet 1410 Wireless Bridge with 22.5 dBi Antenna, FCC Config
AIR-BR1410A-A-K9-N	Aironet 1410 Wireless Bridge w/ N-Type Connector, FCC Config

For More Information

http://www.cisco.com/go/wireless

Cisco Aironet 1300 Series Access Points

The Cisco Aironet 1300 Series Outdoor Access Point or Bridge is an ruggedized 802.11g access point and bridge that provides high-speed and cost-effective wireless connectivity between multiple fixed or mobile networks and clients. The Aironet 1300 Series can be deployed as an autonomous access point or bridge, providing intelligent network services as a standalone device. Alternatively, the Cisco Aironet 1300 Series can be deployed as part of the Cisco Unified Wireless Network, managed centrally by a Cisco wireless LAN controller. The Aironet 1300 supports both, point-to-point or point-to-multipoint configurations.

Key Features and Benefits

- Network connections within a campus area; outdoor infrastructure for mobile networks and users; public access for outdoor areas
- Supports temporary networks for portable or military operations
- Supports the 802.11g standard providing 54-Mbps data rates with secure technology while maintaining full backward compatibility with legacy 802.11b devices
- Easy maintenance and installation by integrating it with your wired network via SWAN solution
- The Cisco Unified Wireless Network simplifies wireless LAN deployment and management by providing clear visibility and dynamic control of the RF environment
- Operates as a wireless bridge, access point, or a workgroup bridge
- Provides ongoing savings of leased-line expenses, a method to connect networks despite physical barriers such as lakes or highways, and rapid deployment of network connections
- Wi-Fi Certified in Access Point mode

Specifications

Feature	Cisco Aironet 1300 Series Access Point
Compatibility	· Access Point—Compatible with any Wi-Fi Certified client device for basic capability; Compatible with Cisco Aironet clients and Cisco Compatible clients for extended capability · Workgroup Bridge—Supports operation with Cisco Aironet access points and Cisco bridges
Air interface standard[1]	IEEE 802.11b or IEEE 802.11g
Frequency band	2.412 to 2.462 GHz (FCC); 2.412 to 2.472 GHz (ETSI); 2.412 to 2.472 GHz (TELEC)
Wireless modulation	· 802.11b—Direct Sequence Spread Spectrum (DSSS): Differential Binary Phase Shift Keying (DBPSK) at 1 Mbps; Differential Quadrature Phase Shift Keying (DQPSK) at 2 Mbps; Complementary Code Keying (CCK) at 5.5 and 11 Mbps · 802.11g—Orthogonal Frequency Divisional Multiplexing (OFDM): BPSK at 6 and 9 Mbps; QPSK at 12 and 18 Mbps; 16-quadrature amplitude modulation (QAM) at 24 and 36 Mbps; 64-QAM at 48 and 54 Mbps
Media access protocol	Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA)
Operating channels	802.11b/g—ETSI: 13; Americas: 11; TELEC (Japan): 13
Lightweight Access Point Protocol	A network protocol for lightweight access points that also provides for centralized management.
Non-overlapping channels	3
Security	· Bridge—Authentication: 802.1X support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Cisco TKIP, key hashing (per-packet keying) and message, Integrity Check (MIC), AES-ready · Access Point: Authentication: 802.1X support including LEAP, PEAP, EAP Message Digest 5 (EAP MD5), EAP TLS, and EAP FAST to yield mutual authentication and dynamic per-user, per-session encryption keys; · Encryption: Cisco TKIP and WPA TKIP; key hashing (per-packet keying) and MIC; AES-ready · Workgroup-Bridge—Authentication: 802.1X support including LEAP to yield mutual authentication and dynamic per-user, per-session encryption keys; Encryption: Cisco TKIP, key hashing (per-packet keying) and MIC, AES-ready
SNMP compliance	Versions 1 and 2

1. Bridge mode has enhancements to the standard to allow longer-range bridging communication

Feature	AIR-BR1310G-x-K9	AIR-BR1310G-x-K9-R
Available transmit power settings[1]	802.11b: 100 mW (20 dBm), 50 mW (17 dBm), 30 mW (15 dBm), 20 mW (13 dBm), 10 mW (10 dBm), 5 mW (7 dBm), 1 mW (0 dBm); 802.11g: 30 mW (15 dBm); 20 mW (13 dBm); 10 mW (10 dBm); 5 mW (7 dBm); 1 mW (0 dBm)	
Maximum operational receive level	-20 dBm	-20 dBm
Maximum survivable receive level	10 dBm	10 dBm
Receive sensitivity (10 percent with 3200-byte packets)	1 Mbps: -94 dBm, 2 Mbps: -91 dBm, 5.5 Mbps: -89 dBm, 11 Mbps: -85 dBm; 6 Mbps: -90 dBm, 9 Mbps: -89 dBm; 12 Mbps: -86 dBm, 18 Mbps: -84 dBm; 24 Mbps: -81 dBm, 36 Mbps: -77 dBm; 48 Mbps: -73 dBm, 54 Mbps: -72 dBm	
Access-point role (Outdoor range)	· Americas: 865 feet (260 meters) at 54 Mbps, 3465 feet (1055 meters) at 11 Mbps; ETSI: 150 feet (45 meters) at 54 Mbps, 775 feet (235 meters) at 11 Mbps; TELEC: 485 feet (145 meters) at 54 Mbps, 1095 feet (330 meters) at 11 Mbps · Note: Access Point with 13 dBi integrated antenna and Cisco clients	· Americas: 350 feet (105 meters) at 54 Mbps, 1410 feet (430 meters) at 11 Mbps; ETSI: 195 feet (60 meters) at 54 Mbps, 630 feet (190 meters) at 11 Mbps; TELEC: 195 feet (60 meters) at 54 Mbps, 445 feet (135 meters) at 11 Mbps · Note: Access Point with 5.2dBi patch antenna and Cisco clients
Bridge role (Point-to-point range)[2]	· Americas: 1.3 miles (2 km) at 54 Mbps, 9 miles (15 km) at 11 Mbps; EMEA: 0.2miles (0.36Km) at 54 Mbps, 2.3 miles (3.5 km) at 11 Mbps; TELEC: 0.7 miles (1.1Km) at 54 Mbps, 3.2 miles (5 km) at 11 Mbps · Note: 13 dBi integrated antenna at root and non-root bridge	· Americas: 4.5 miles (7 km) at 54 Mbps, 14 miles (23 km) at 11 Mbps; EMEA 5.5 miles (9 km) at 11 Mbps; TELEC: 4.5 miles (7 km) at 54 Mbps, 12 miles (20 km) at 11 Mbps · Note: 21-dBi dish antenna at root and non-root bridge
Bridge role (Point-to-multipoint range)	· Americas: 1.1 miles (1.8 km) at 54 Mbps, 8 miles (13 km) at 11 Mbps; EMEA: 0.25 miles (0.4Km) at 54 Mbps, 1.1 miles (1.8 km) at 11 Mbps; TELEC: 0.8 miles (1.3Km) at 54 Mbps, 3.6 miles (5.8 km) at 11 Mbps · Note: 14-dBi sector antenna at root and 13dBi integrated antenna at non-root	· Americas: 2.0 miles (3.3 km) at 54 Mbps, 10 miles (16 km) at 11 Mbps; EMEA: 2.5 miles (4 km) at 11 Mbps; TELEC: 2.0 miles (3.3 km) at 54 Mbps; 9.0 miles (14 km) at 11 Mbps · Note: 14-dBi sector at root and 21-dBi dish at non-root
Feature	AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R	AIR-PWRINJ-BLR2 and AIR-PWRINJ-BLR2T

Dimensions (H x W x D)	8 x 8.1 x 3.12 in. (20.3 x 20.57 x 7.87 cm)	4.62 x 4.76 x 1.07 in. (11.73 x 12.09 x 2.71 cm)
Weight	2.5 lb (1.25 kg)	2 lb (1 kg)
Operational temperature	-22½ to 131½ºF (-30½ to 55½ºC)	Same as AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R
Storage temperature	-40½ to 185½ºF (-40½ to 85½ºC)	Same as AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R
Operational altitude	13,800 ft (4206 m)	Same as AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R
Storage altitude	16,000 ft (4877 m)	Same as AIR-BR1310G-x-K9 and AIR-BR1310G-x-K9-R
Humidity	0 to 100% at 100½ºF (38½ºC) (condensing)	0 to 90% at 100½F (38½C) (non-condensing)
Warranty	One Year	

1. Maximum power setting will vary according to individual country regulations
2. The distances referenced here are approximations and should be used for estimation purposes only.

Selected Part Numbers and Ordering Information

AIR-BR1310G-X-K9	Cisco Aironet 1300 2.4 GHz (802.11g) Outdoor Access Point /Bridge with integrated patch antenna
AIR-BR1310G-X-K9-R	Cisco Aironet 1300 2.4 GHz (802.11g) Outdoor Access Point /Bridge with RP-TNC type connector
AIR-LAP1310G-X-K9	Cisco Aironet 1300 2.4 GHz (802.11g) Outdoor Lightweight Access Point /Bridge with integrated patch antenna
AIR-LAP1310G-X-K9	Cisco Aironet 1300 2.4 GHz (802.11g) Outdoor Lightweight Access Point /Bridge with RP-TNC type connector

For More Information

http://www.cisco.com/go/wireless

Cisco Aironet Wireless LAN Client Adapters

The Cisco Aironet Wireless LAN Client Adapters provide high-performance 54-Mbps connectivity in the 2.4- and 5-GHz bands that combines the freedom of wireless connectivity with the performance, security, and manageability that businesses require.

Ideal for Companies That Need These Features

Cisco Aironet Wireless LAN Client Adapters
- Ability to operate in a mixed-mode environment
- Mobility within the enterprise to increase productivity, as an addition or alternative to wired networks, or the need for flexibility for frequent LAN wiring changes
- Support for Cisco Compatible Extensions with a Cisco product

Key Features and Benefits

- The Cisco Aironet 802.11a/b/g CardBus Wireless LAN Client Adapters secure network communications using the Cisco Secure Wireless Solution.
- The tools include the Cisco Aironet Desktop Utility, Cisco Aironet System Tray Utility (STU), and Cisco Aironet Client Administration Utility (CAU).
- World mode is used for international roaming.
- The adapter tools offer exceptional range and throughput.
- The adapter tools support single 802.11b coverage, single 802.11g coverage, single 802.11a coverage, dual-mode 802.11a/g coverage, or tri-mode 802.11a/b/g coverage.
- The adapter tools are Wi-Fi Certified, and they support for the Wi-Fi Protected Access (WPA) protocol.
- PCI adapter that offers optimal placement for maximum performance using a dual-band 2.4- or 5-GHz 1-dBi effective gain antenna has a 2-meter cable.
- The PCI adapter provides a low-profile form factor and 2-meter cable length to provide flexibility for installation in low-profile devices, such as slim desktops and point-of-sale (POS) devices.
- The tools support Cisco Compatible Extensions Version 5 and earlier.

Specifications

Feature	Cisco Aironet 802.11a/b/g Wireless CardBus Adapter	Cisco Aironet 802.11a/b/g Wireless PCI Adapter
Form Factor	CardBus Type II	Standard and Low Profile Type II PCI

Interface	32-bit CardBus with standard 68-pin connector; PC-Card Rev. 7.0 compliant	Standard PCI Interface, PCI Rev. 2.3 compliant
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps	
Network Standard	IEEE 802.11a/b/g	
Operating Voltage	3.3 V (±0.3 V)	
Media Access Protocol	Carrier-Sense Multiple Access w/ Collision Avoidance (CSMA/CA)	
Wireless Medium	802.11g: Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Divisional Multiplexing (OFDM); 802.11a: OFDM	
Modulation	· 802.11b: DSSS--Differential Binary Phase Shift Keying (DBPSK) @ 1 Mbps; Differential Quadrature Phase Shift Keying (DQPSK) @ 2 Mbps; Complementary Code Keying (CCK) @ 5.5 and 11 Mbps · 802.11g and 802.11a: OFDM--BPSK @ 6 and 9 Mbps; QPSK @ 12 and 18 Mbps; 16-Quadrature Amplitude Modulation (QAM) @ 24 and 36 Mbps; 64-QAM @ 48 and 54 Mbps	
Frequency Bands	2.40 to 2.4897 GHz; 5.15 to 5.35 GHz (FCC UNII 1 and UNII 2); 5.725 to 5.85 GHz (FCC UNII 3); 5.15 to 5.35 GHz (ETSI); 5.470 to 5.725 (ETSI); 5.15 to 5.25 GHz (Japan)	
Range (With 2.2 dBi dipole antenna for 802.11g and 802.11b and 6 dBi gain patch for 802.11a)	· 802.11a—Indoor: 45 ft (13 m)@ 54 Mbps, 110 ft (33 m) @ 18 Mbps, 165 ft (50 m) @ 6 Mbps; Outdoor: 100 ft (30 m) @ 54 Mbps, 600 ft (183 m) @ 18 Mbps, 1000 ft (304 m) @ 6 Mbps · 802.11b/g—Indoor: 90 ft (27 m) @ 54 Mbps, 180 ft (54m) @ 18 Mbps, 160 ft (48 m) @ 11 Mbps, 300 ft (91 m) @ 6 Mbps, @ 410 ft (124 m); Outdoor: 250 ft (76 m) @ 54 Mbps, 600 ft (183 m) @ 18 Mbps, 1000 ft (304 m) @ 11 Mbps, 1300 ft (396 m) @ 6 Mbps, 2000 ft (610 m) @ 1 Mbps	
Antenna	Integrated diversity dual-band 2.4/5 GHz antenna	
Security Architecture Client Authentication (Cisco Wireless Security Suite)	· Authentication: WPA and 802.1X support for Cisco LEAP, PEAP-GTC, PEAP-MSCHAPv2, and EAP-TLS; MAC address and by standard 802.11 authentication mechanisms · Encryption: Support for static and dynamic IEEE 802.11 WEP keys of 40 bits and 128 bits; Cisco TKIP and WPA TKIP encryption enhancements: key hashing (per-packet keying), message integrity check (MIC) and broadcast key rotation	
Drivers	Windows XP and Windows 2000	
Dimensions (H x W x D)	0.19 x 2.05 x 4.46 in. (4.80 x 52.08 x 113.35 mm.)	3.12205 x 4.72 in. (79.3 x 119.9 mm.)
Weight	1.6 oz (44.0g)	Standard (frame) PCI w/Antenna: 3.64 oz. (103.2 g), Standard (frame) PCI w/o Antenna: 1.92 oz. (54.7 g), Low Profile PCI w/Antenna: 3.43 oz. (97.5 g), Low Profile PCI w/o Antenna: 1.72 oz. (49.0 g)
Warranty	One Year	One Year

Selected Part Numbers and Ordering Information

AIR-CB21AG-A-K9	Cisco Aironet 802.11a/b/g Cardbus Adapter; FCC Cnfg
AIR-CB21AG-A-K9-40	Cisco Aironet 802.11a/b/g Cardbus Adapter; FCC Cnfg; 40PK
AIR-PI21AG-A-K9	Cisco Aironet 802.11a/b/g Low Profile PCI Adapter; FCC Cnfg
AIR-PI21AG-A-K9-10	Cisco Aironet 802.11a/b/g Low Profile PCI Adapter; FCC Cnfg; 10PK

For More Information

http://www.cisco.com/go/wireless

Cisco Secure Services Client

The Cisco Secure Services Client is a software application that allows businesses of all sizes to deploy a single authentication framework across endpoint devices to enable access to both wired and wireless networks. The solution delivers simplified management, robust security, and lower total cost of ownership. Through a simplified and scalable deployment mechanism, IT administrators can deploy and manage the Cisco Secure Services Client across the enterprise. The software client manages the user and device identity and the network access protocols required for secure access. The Cisco Secure Services Client uses the IEEE 802.1X authentication standard to provide a robust first line of defense against unauthorized network intrusions.

Ideal for Companies That Need These Features

Cisco Secure Services Client	· Secure Wi-Fi connections · Control of users' access policies · Identity-based access · FIPS support · Simple end-user experience (two-click connect, automated VPN, and automated access to network)

Key Features and Benefits

- Automatic VPN feature—Cisco IP Security (IPsec) VPN and Secure Computing Soft Token are integrated in the Cisco Secure Services Client.
- FIPS 140-2 Level 1-compliant solution—FIPS drivers (ordered separately) are available.
- Cisco enterprise deployment mechanism—A unified .xml file allows for client provisioning; the single provisioning schema is independent of hardware. The administrator can now easily create an .msi file containing the .xml and .exe files for installation, and then deploy the files using standard deployment tools such as Microsoft Active Directory, Microsoft Short Message Service (SMS), and Altiris.
- Filtering of unwanted Service Set Identifiers (SSIDs)—This feature decreases the number of available networks for users and enforces corporate security policies for end users.
- Enforcing wired over wireless—This feature allows you to disable the wireless interface when a wired connection is present, and it eliminates unwanted wireless bridging to a wired network.
- Policy Enforcement Manager—The Policy Enforcement Manager enforces an 802.1X identity-based network security framework and configures and enforces access policies to protect corporate resources and assets.
- Network Profile Manager—Using the administrator console, administrators can define preconfigurations, lock down client features, and deploy end-user profiles for enterprise, travel, and home connections. The Network Profile Manager provides network entitlement rights for employees, guests, and suppliers with different levels of security.
- Credential Manager—The Credential Manager facilitates Windows single sign-on (SSO) capabilities, including device and user authentication, user-based authentication sessions, and credential challenges.
- Secure network access—This feature allows for authenticated access to 802.1X wired and wireless LANs. Cisco Secure Services Client is compatible with Wi-Fi-certified devices; it supports all Wi-Fi encryption modes: Wired Equivalent Privacy (WEP), Wi-Fi Protected Access-personal mode (WPA-personal mode), WPA2-personal mode, WPA-enterprise mode, WPA2-enterprise mode, Dynamic WEP (802.1X), Advanced Encryption Standard (AES), and Temporal Key Integrity Protocol (TKIP). It also supports a wide selection of Extensible Authentication Protocol (EAP) types; and protects user privacy with EAP "anonymous" access. In addition, it is compatible with the Cisco Secure Access Control Server (ACS).
- Access management and automated configuration control—This enterprise deployment mechanism, available through a unified .xml file, delivers user-access policies to any port accessed by users. It supports Microsoft Active Directory machine and user group profiles, and facilitates automatic configuration of VLANs, in addition to offering comprehensive SSO support for the Windows login environment.
- Flexible Credential Selection—Machine and/or user credentials, Windows single sign-on, username/password, RSA SecurID tokens; one-time password (OTP) tokens; Smartcards (Axalto, Gemplus, SafeNet iKey, and Alladin); and X.509 certificates.

Specifications

Feature	Cisco Secure Services Client
Operating systems	Windows XP, Windows 2000, Windows Vista
EAP protocols (XP/2000)	EAP-Message Digest 5 (MD5), EAP-Transport Layer Security (TLS), EAP-Tunneled TLS (TTLS), Cisco LEAP, EAP-Flexible Authentication via Secure Tunneling (FAST), Protected Extensible Authentication Protocol (PEAP)
EAP protocols (Vista)	Cisco LEAP, EAP-Flexible Authentication via Secure Tunneling (FAST), Protected Extensible Authentication Protocol (PEAP)
EAP-TTLS (XP/2000)	Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP), Microsoft CHAP (MSCHAP), MSCHAPv2, EAP-MD5
EAP-PEAP (XP/2000)	EAP-MSCHAPv2, EAP-TLS, and EAP-Generic Token Card (GTC)
EAP-PEAP (Vista)	EAP-MSCHAPv2 and EAP-Generic Token Card (GTC)
Encryption support	WEP, WPA, WPA2, WPA-Pre-Shared Key (WPA-PSK), WPA2-PSK, Dynamic WEP (802.1X), AES, TKIP
Media support	Wired Ethernet 802.3 and Wi-Fi 802.11a, 802.11b, 802.11g, 802.11n
Switch interoperability	Any 802.1X-compatible Wi-Fi access point and wired Ethernet switch
Authentication, authorization, and accounting (AAA) interoperability	Supports standard RADIUS servers such as Cisco Secure Access Control Server (ACS) and Microsoft Internet Authentication Service (IAS)
Windows SSO	Active Directory machine and user authentication
Enterprise deployment	Export network profiles and lock user interface
Integrated VPN	Automatic VPN requires the following software to be preinstalled: • Cisco IPSec VPN version 4.8 or higher on Windows XP • Cisco IPSec VPN version 5.0.03.0560 or higher on Windows Vista
FIPS solution	Meets Federal Information Processing Standard 140-2 Level 1. Requires the purchase of separate drivers for a complete FIPS 140-2 Level 1 client solution. Driver part numbers are AIR-SSCFIPS-DRV (see ordering guide for more detail). Supports many popular Intel, Broadcom, and Atheros Wi-Fi chipsets FIPS mode includes support for EAP-TLS, EAP-FAST, and PEAP association methods.

Integrated Software Token Applications (XP/2000)	Automatic software token generation requires the following software to be preinstalled: • Secure Computing SofToken II (Version 2.1 or later)

Selected Part Numbers and Ordering Information

Windows 2000 Windows XP	
AIR-SC5.0-XP2K	SW Client 5.0 for Win XP/2K for wired/wireless devices
AIR-SC5.0-XP2K-L1, L2, L3, L4, L5, L6, L7, L8	Specified seat count up to 250, 251–1000, 1001–2500, 2501–5000, 5001–10,000, 10,001–25,000, 25,001–50,000, 50,001–100,000
AIR-SSCFIPS-DRV	FIPS drivers
AIR-SSCFIPS-DRV-L1, L2, L3, L4, L5, L6, L7, L8	Specified seat count up to 250, 251–1000, 1001–2500, 2501–5000, 5001–10,000, 10,001–25,000, 25,001–50,000, 50,001–100,000
Windows Vista	
AIR-SSC-VISTA	Software Client 5.1 for Windows Vista for wired/wireless devices
AIR-SSC-VISTA-L1, L2, L3, L4, L5, L6, L7, L8	Specified seat count up to 250, 251–1000, 1001–2500, 2501–5000, 5001–10,000, 10,001–25,000, 25,001–50,000, 50,001–100,000

For More Information

http://www.cisco.com/en/US/products/ps7034/index.html

Cisco Aironet Antennas and Accessories

Cisco offers a complete range of 2.4- and 5-GHz antennas for access-point and bridge equipment that facilitate a customized wireless solution for almost any installation. Customers can select an antenna that will increase the overall efficiency and data rates of their wireless network, while accommodating specific deployment conditions, including physical layout, distance, and aesthetics.

Key Features and Benefits

- Access-point antennas are compatible with all Cisco RP-TNC-equipped access points; they are available with different gain and range capabilities, beam widths, and form factors.
- Bridge antennas are available in directional configurations for point-to-point transmission and in an omnidirectional configuration for point-to-multipoint implementations.
- Low-loss cable extends the length between any Cisco Aironet bridge and the antenna. With a loss of 6.7 dB per 100 feet (30m), low-loss cable provides installation flexibility without a significant sacrifice in range.
- Cisco offers a complete range of antennas for 5-GHz bridging applications.

Specifications

Cisco Aironet 2.4 GHz Access Point Antennas with RP-TNC Connectors

Feature	AIR-ANT2450S-R	AIR-ANT2410Y-R	AIR-ANT2012	AIR-ANT3213
Description	5-dBi sector	10-dBi Yagi mast or wall mount	Diversity patch wall mount	5.2-dBi Pillar mount diversity omni
Application	Wall mount indoor/outdoor antenna with RP-TNC connector. Capable of covering large areas.	Indoor/Outdoor directional antenna for use with Access Points or Bridges	Indoor/Outdoor, unobtrusive medium range antenna	Indoor, unobtrusive medium-range antenna
Approximate Indoor Range[1]	6 Mbps: 379 ft (116 m) 54 Mbps: 114 ft (35 m)	6 Mbps: 548 ft (167 m) 54 Mbps: 165 ft (50 m)	6 Mbps: 418 ft (127 m) 54 Mbps: 126 ft (38 m)	6 Mbps: 379 ft (121 m) 54 Mbps: 114 ft (35 m)
Cable Length	3 ft. (0.91m)	3 ft. (0.91 m)	3 ft. (0.91m)	3 ft. (0.91m)
Dimensions (H x W x D)	6 x 3 x 2 in. (1524 x 7.62 x 5.08 cm)	7.25 x 3 in. (18.4 x 7.62 cm)	4.78 x 6.66 x 0.82 in. (12.14 x 16.92 x 2.08 cm)	14 x 5 in. x 1 in. (35.5 x 12.7 x 2.5 cm)
Weight	7 oz. (.02 kg)	8 oz.	9.6 oz. (272g)	1 lb. (460g)
Feature	**AIR-ANT1728**	**AIR-ANT4941**	**AIR-ANT2422DG-R**	**AIR-ANT2422DW-R**
Description	5.2-dBi omnidirectional ceiling mount	2.2-dBi black dipole antenna	2.2-dBi gray non-articulating dipole antenna	2.2-dBi white dipole antenna
Application	Indoor medium-range antenna, typically hung from crossbars of drop ceilings	Indoor omnidirectional coverage	Indoor omnidirectional coverage	Indoor omnidirectional coverage

Approximate Indoor Range	6 Mbps: 379 ft (116 m) 54 Mbps: 114 ft (35 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)	6 Mbps: 300 ft (91 m) 54 Mbps: 90 ft (27 m)
Cable Length	3 ft. (0.91m)	N/A	N/A	N/A
Dimensions (H x W x D)	11.25 x 1 in. (28.5 x 2.5 cm)	5.5 in. (14 cm)	5.5 in. (14 cm)	5.5 in. (14 cm)
Weight	4.6 oz. (131g)	1.1 oz. (31 g)	1.1 oz. (31 g)	1.1 oz. (31 g)
Feature	**AIR-ANT1729**	**AIR-ANT2485P-R**	**AIR-ANT2460P-R**	**AIR-ANT2465P-R**
Description	6-dBi Patch wall mount	8.5-dBi patch wall mount	6-dBi patch wall mount	6.5-dBi diversity patch wall mount
Application	Indoor/outdoor, unobtrusive, midrange antenna (may also be used as a medium-range bridge antenna)	Indoor, unobtrusive, long-range antenna (may also be used as a midrange bridge antenna)	Indoor, unobtrusive, long-range antenna (may also be used as a midrange bridge antenna)	Indoor/outdoor, unobtrusive midrange antenna
Approximate Indoor Range	6 Mbps: 403 ft (123 m) 54 Mbps: 121 ft (37 m)	507 ft (155 m) 153 ft (47 m)	403 ft (123 m) 121 ft (37 m)	418 ft (127 m) 126 ft (38 m)
Cable Length	3 ft. (0.91m)	3 ft (0.91 m)	3 ft (0.91 m)	3 ft (0.91 m)
Dimensions (H x W x D)	4 x 5 in. (9.7 x 13 cm.)	5.3 x 5.3 x.90 in. (13.5 x 13.5 x 2.28 cm.)	4.1 x 3.9 x.75 in. (10.4 x 9.9 x 1.9 cm.)	5 x 6.7 x 0.90 in. (12.7 x 17 x 2.28 cm.)
Weight	4.9 oz. (139 g.)	8.2 oz. (231.3 g.)	6 oz. (171.5 g.)	11.6 oz. (330.2 g.)

Cisco Aironet 5 GHz Access Point Antennas with RP-TNC Connectors

Feature	**AIR-ANT5145V-R**	**AIR-ANT5160V-R**	**AIR-ANT5170P-R**	**AIR-ANT5195P-R**
Description	4.5-dBi diversity omnidirectional ceiling mount	6-dBi omnidirectional antenna	7.0-dBi Diversity patch wall mount	9.5-dBi Patch wall or articulating mast mount
Application	Indoor midrange antenna	Indoor/outdoor midrange antenna	Indoor/outdoor directional wall mount antenna	Indoor/outdoor patch antenna provides different mounting options
Approximate Range[3]	6 Mbps: 732 ft (223 m) 54 Mbps: 82 ft (25 m)	6 Mbps: 822 ft (251 mm.) 54 Mbps: 92 ft (28 m)	6 Mbps: 880 ft (270 m) 54 Mbps: 140 ft (43 m)	6 Mbps: 1030 ft (313 m) 54 Mbps: 170 ft (52 m)
Beam Width	360° H 50° E	360° H 17° E	70° H, 50° V	50° H, 43° V
Cable Length	3 ft. (0.91 m.)	3 ft. (0.91 m)	3 ft. (0.91 m)	3 ft. (0.91 m)
Dimensions (L x D)	6.75 x 4.1 in. (17.1 x 10.41 cm)	12 x 1 in. (30.5 x 2.5 cm)	5.7 in. (14.5 cm.) x 4.3 in. (10.9 cm.) x 0.7 in. (1.8 cm.)	5.1 in. (12.9 cm.) x 5.1 in. (12.9 cm.) x 1.0 in. (2.5 cm.)
Weight	11.5 oz.	5.3 oz.	8 oz (0.2 kg.)	9 oz. (0.25 kg.)

Cisco Aironet 5 GHz Access Point Antennas with RP-TNC Connectors

Feature	**AIR-ANT5135D-R**	**AIR-ANT5135DG-R**	**AIR-ANT5135DW-R**
Description	3.5-dBi black dipole antenna	3.5-dBi gray non-articulating antenna	3.5-dBi white dipole antenna Indoor
Application	Indoor omnidirectional coverage	Indoor omnidirectional coverage	Indoor omnidirectional coverage
Approximate Range[3]	6 Mbps: 675 ft. (206 m) 54 Mbps: 75 ft (21 m)	6 Mbps: 675 ft. (206 m) 54 Mbps: 75 ft (21 m)	6 Mbps: 675 ft. (206 m) 54 Mbps: 75 ft (21 m)
Beam Width	60ºH, 40ºV	60ºH, 40ºV	60ºH, 40ºV
Dimensions (L x D)	5.3 x 0.6 in. (13.5 x 1.5 cm)	5.3 x 0.6 in. (13.5 x 1.5 cm)	5.3 x 0.6 in. (13.5 x 1.5 cm)
Weight	1 oz (28.3 g)	1 oz (28.3 g)	1 oz (28.3 g)

1. All range estimates are based on an integrated client adapter antenna associating with an access point under ideal indoor conditions. The distances referenced here are approximations and should be used for estimation only.

Cisco offers antennas that can be used with the Cisco Aironet 1250 Series Access Points, which feature 802.11n technology. The antennas and access points use an RP-TNC type connector.

Cisco Aironet 2.4- and 5-GHz Access Point Antennas with RP-TNC Connectors for Cisco Aironet 802.11n Access Points

Feature	AIR-ANT2430V-R=	AIR-ANT2460NR-R=	AIR-ANT5140V-R=	AIR-ANT2451NV-R=
Description	Ceiling mount omnidirectional	Wall mount patch	Ceiling mount omnidirectional	Ceiling mount
Application	Indoor carpeted area type, unobtrusive omnidirectional antennas for Cisco Aironet 802.11n MIMO Radios	Indoor carpeted area type, unobtrusive omnidirectional antennas for Cisco Aironet 802.11n MIMO Radios	Indoor carpeted area type, unobtrusive omnidirectional antennas for Cisco Aironet 802.11n MIMO Radios	Indoor carpeted area type, unobtrusive omnidirectional antennas for Cisco Aironet 802.11n MIMO Radios
Gain	3.0 dBi	6.0 dBi	4.0 dBi	2.5 dBi (2.4 GHz) 3.5 dBi (5 GHz)
Frequency	2.4 GHz	2.4 GHz	5 GHz	2.4 GHz and 5 GHz
Approximate Indoor Range[1]	(see note below)	(see note below)	(see note below)	(see note below)
Beam Width	360°H, 60°V	80°H, 75°V	360°H, 45°V	63°H, 55°V
Cable Length	3 ft (0.91 m) 3 cables with RP-TNC	3 ft. (0.91 m) 3 cables with RP-TNC	3 ft (0.91 m) 6 cables with RP-TNC	3 ft (0.91 m) 6 cables with RP-TNC
Dimensions	12.1 x 4.2 x 1.6 in. (30.73 x 10.67 x 4.06 cm)	5.8 x 11.25 x 1.1 in. (14.7 x 28.6 x 2.9 cm)	6.9 x 3 x.9 in (17.53 x 7.62 x 2.29 cm)	8.6 dia x 1.8 in (21.8 x 4.6 cm)
Weight	27 oz (0.76 kg)	19.7 oz (0.56 kg)	14.1 oz (0.40 kg)	
Operating Temperature	0º to +55ºC	-30º to +70ºC	0º to +55ºC	0º to +55ºC

1. All range estimations are based on an external antenna associating with an integrated Intel Centrino client under ideal conditions. The distances referenced here are approximations and should be used for estimation purposes only.

Cisco offers antennas for the Cisco Aironet 1500 Series Outdoor Mesh Access Points in various gains and antenna types.

Cisco Aironet 2.4- and 5-GHz Antennas with N-Type Connectors for the Cisco Aironet 1500 Series Lightweight Outdoor Mesh APs[1]

Feature	AIR-ANT2450V-N	AIR-ANT2455V-N	AIR-ANT2480V-N	
Description	5 dBi, direct mount omnidirectional antenna for 2.4 GHz	5.5 dBi, direct mount omnidirectional antenna for 2.4 GHz	8 dBi direct mount omnidirectional antenna for 2.4 GHz	
Application	Omnidirectional antenna for outdoor mesh access points. Suitable for all access point deployments, specifically for cable strand mount applications.	Omnidirectional antenna suitable for use on Cisco Aironet 1500 Series Lightweight Outdoor Mesh Access Points in all deployments. Not suitable for use on Cisco Aironet 1500 Series Lightweight Outdoor Mesh Access Points in cable strand mount situations.	Extended range omnidirectional antenna for outdoor mesh access points. Suitable for pole or roof mounting deployments.	
Gain	5 dBi	5.5 dBi	8 dBi	
Frequency	2.4 GHz	2.4 GHz	2.4 GHz	
Beam width	30° V	25° V	10° V	
Cable Length	None	None	None	
Dimensions	11 in. x 1 in. (27.94 x 2.54 cm)	12.5 in. x 1 in. (31.75 x 2.54 cm)	19.5 in. x 7/8 in. diameter (49.5 cm x 2.22 cm)	
Weight	0.40 lbs. (0.18 kg)	0.31 lbs. (0.14 kg)	0.45 lbs. (0.20 kg)	
Operating Temperature	-30° to +70 C	-30° to 70°C	-30° to +70° C	
Feature	AIR-ANT5175V-N	AIR-ANT5180V-N	AIR-ANT5114P-N	AIR-ANT5117S-N
Description	7.5 dBi omnidirectional antenna for 5 GHz	8 dBi direct mount omnidirectional antenna for 5 GHz	14 dBi wall/mast mount articulating patch antenna for 5 GHz	17 dBi, 90 degree mast mount sector antenna for 5 GHz
Gain	5 GHz bands = 7.5 dBi 4.9 GHz bands = 6 dBi	8 dBi	14 dBi	17 dBi
Frequency	4.9-5.8 GHz	4.9-5.85 GHz	4.9-5.85 GHz	4.9-5.85 GHz

Application	Omnidirectional antenna suitable for use on Cisco Aironet 1500 Series Lightweight Outdoor Mesh Access Points in all deployments.	Omnidirectional antenna for Cisco Aironet 1520 series mesh access points. Suitable for all deployments, including cable strand mount applications.	Recommended for medium range point to point deployments	Recommended for point-to-multipoint deployments of medium to long range.
Beam width	16°V	16° V	25° H, 29° E	90° H, 8° E
Cable Length	1 ft (0.30 m)	None	1 ft. (0.30 m)	None
Dimensions	11.65 in. x 1 in. (29.41 x 2.54 cm)	11 in. x 1 in. (27.94 x 2.54 cm)	4 1/8 in. x 4 1/8 in. (10.48 cm x 10.48 cm)	24 1/2 in. x 2 ½ in. (62.23 cm x 6.35 cm)
Weight	0.38 lbs. (0.17 kg)	0.4 lbs. (0.18 kg)	0.70 lbs. (0.32 kg)	1.95 lbs. (0.88 kg)
Operating Temperature	-30° to 70°C	-30° to +70 C	-30° to +70° C	-30° to +70° C

Cisco Aironet Accessories

Feature	AIR-ACC2537-060	AIR-ACC245LA-R	AIR-ACC2662
Description	60 in. (152 cm) bulkhead extender	Yagi articulating mount	Yagi articulating mount
Application	Flexible antenna cable that extends access point cabling typically within an enclosure	Helps prevent damage due to lightning-induced surges or static electricity; Helps prevent damage due to lightning-induced surges or static electricity	Adds swiveling capability to mast-mounted Yagi antennas

Cisco Aironet 5.8 GHz Bridge Antennas with N-Type Connectors

Feature	AIR-ANT58G9VOA-N	AIR-ANT58G10SSA-N	AIR-ANT58G28SDA-N
Description	9.0-dBi omnidirectional Mast mount	9.5-dBi sector antenna Mast mount	28.0-dBi dish antenna Mast mount
Application	Outdoor short-range point-to-multipoint applications	Outdoor medium-range point-to-point and point-to-multipoint applications	Outdoor long-range directional connections
Polarization	Vertical	Vertical or horizontal Field configurable	Vertical or horizontal Field configurable
Elevation adjustment	None	None	+/- 12.5 degrees
Approximate range at 9 Mbps6	8 miles (13 km) (with 22.5 dBi captive antenna on the remote site)	Same as AIR-ANT58G9VOA-N	23 miles (37 km) (with 28 dBi antennas on each end)
Approximate range at 54 Mbps6	2 miles (3 km) (with 22.5 dBi captive antenna on the remote site)	Same as AIR-ANT58G9VOA-N	12 miles (19 km) (with 28 dBi antennas on each end)
Beam width	360 H, 6 V	60 H, 60 V	4.75 H, 4.75 V
Supplied jumper cable length	4.9 ft. (1.5 m)	4.9 ft. (1.5 m)	4.9 ft. (1.5 m)
Dimensions (H x W x D)	20.25 x.64 in. (51.4 x 1.62 cm) (L x W)	2.5 x 2.5 x 1.75 in. (6.4 x 6.4 x 4.5 cm)	Diameter: 29 in. (74 cm) Depth: 14.5 in. (36.8 cm)
Weight	2.0 lb. (0.9 kg)	1.25 lb. (0.6 kg)	9.5 lb. (4.3 kg)

Cisco Aironet Bridge Accessory

Feature	AIR-ACCRWM1400	AIR-ACCBRGB=	AIR-ACCMFM1400=
Description	Roof/Wall mount kit	Grounding block	Multifunction mount
Application	Allows mounting to flat surfaces Includes full elevation and azimuth adjustment	Helps prevent damage due to lightning-induced surges or static electricity	Allows mounting to poles with a diameter between 1.5 in. and 2.5 in. Includes both elevation and polarization adjustment

Cisco Aironet Power Injector Cables

Feature	AIR-CAB020DRG6-F=	AIR-CAB050DRG6-F=	AIR-CAB100DRG6-F
Cable length	20 ft. (6m)	50 ft. (15m)	100 ft. (30m)

1. Cisco Aironet 1500 Series Access Points are available in single-band (2.4 GHz) and dual-band (2.4 GHz and 5 GHz) versions. Check your access point for proper antenna selection before placing an order.

Cisco Aironet 2.4 GHz Bridge Antennas

Feature	AIR-ANT2506	AIR-ANT24120	AIR-ANT2414S-R	AIR-ANT1949	AIR-ANT3338
Description	5.2 dBi Omnidirectional Mast mount	12 dBi High-gain omnidirectional Mast mount	14 dBi Vertically polarized sector	13.5 Yagi mast mount	21 dBi Solid dish
Application	Outdoor short-range point-to-multipoint applications	Outdoor medium-range point-to-multipoint applications	Outdoor long range point-to-multipoint applications	Outdoor medium-range directional connections	Outdoor long-range directional connections
Approximate Indoor Range[4]	2 Mbps: 3.3 miles (5.31 km) 11 Mbps: 1.66 miles (2.66 km) 54 Mbps:.21 miles (.34 km)	2 Mbps: 15.81 miles (25.43 km) 11 Mbps: 7.92 miles (12.75 km) 54 Mbps: 1.0 miles (1.6 km)	2 Mbps: 16.71 miles (26.89 km) 11 Mbps: 8.89 miles (14.30 km) 54 Mbps: 1.26 miles (2.02 km)	2 Mbps: 18.33 miles (29.49 km) 11 Mbps: 11.19 miles (18.01 km) 54 Mbps: 1.41 miles (2.27 km)	2 Mbps: 26.49 miles (42.62 km) 11 Mbps: 20.1 miles (32.33 km) 54 Mbps: 4.46 miles (7.17 km)
Cable Length	3 ft. (0.91m)	1 ft. (0.30m)	5 ft (1.5 m)	3 ft. (0.91m)	2 ft. (0.61m)
Dimensions (L x D)	13 x 1 in. (33 x 2.5 cm)	50 x 1.5 in. (127 x 3 cm)	36 x 6 x 1.25 in. (91 x 15 x 10 cm)	18 x 3 in. (46 x 7.6 cm)	24 in. d (61 cm)
Weight	5oz. (14 g)	1.5 lb. (0.68 kg)	6.5 lb. (3 kg)	12 oz. (34 kg)	11 lb. (5 kg)

Cisco offers a dual band antenna, or a radome, which has both 2.4 GHz and 5 GHz elements in one low profile package. The antenna has 4 cables, two for 2.4 GHz and 2 for 5 GHz, color coded to prevent any accidental connections. Easy to install and lightweight, this antenna is ideal for indoor wall or ceiling mount applications.

Cisco Dual Band Antenna for 2.4 GHz and 5 GHz Access Points

Feature	AIR-ANT2451V-R=
Description	Dual band: 2 dBi in 2.4 GHz and 3dBi in 5 GHz omnidirectional ceiling mount
Application	Indoor midrange antenna
Gain	2 dBi in 2.4 GHz; 3 dBi in 5 GHz
Frequency*	2.4 and 5 GHz
Approximate Indoor Range at 6 Mbps**	2.4 GHz: 295 ft (90 m); 5 GHz: 675 ft (206 m)
Approximate Indoor Range at 54 Mbps**	2.4 GHz: 88 ft (27 m); 5 GHz: 75 ft (21 m)
Beam Width	2.4GHz: 360°H, 80°E; 5 GHz: 360°H, 50°E
Cable Length	18 in (45.7 cm)
Dimensions	8.5 in. x 6 in. x.93 in (21.5 cm x 15.2 cm x 2.4cm)
Weight	1 lb (4.5 kg)
Operating Temperature	0° to +55°C

Selected Part Numbers and Ordering Information

Cisco Aironet Accessories

AIR-ACC2662	Yagi Antenna Articulating Mount
AIR-ACC2537-060	60 in. (152 cm) bulkhead extender
AIR-ACC2545LA-R	2.4 GHz and 5 GHz lightning arrestor
AIR-CAB020LL-R	20 ft. (6m) low-loss antenna cable
AIR-CAB050LL-R	50 ft. (15m) low loss antenna cable
AIR-CAB100ULL-R	100 ft. (30m) low loss antenna cable
AIR-CAB150ULL-R	150 ft. (46m) low loss antenna cable

Cisco Aironet Antennas

AIR-ANT1728	5.2 dBi Omni Ceiling Mount Antenna
AIR-ANT1729	6 dBi Patch Wall Mount Antenna
AIR-ANT1949	13.5 dBi Yagi Mast Mount Antenna
AIR-ANT2012	6.5 dBi Diversity Patch Wall Mount Antenna
AIR-ANT2506	5.2 dBi Omnidirectional Mast Mount Antenna
AIR-ANT3213	5.2 dBi Pillar-Mount Diversity Omni Antenna
AIR-ANT2410Y-R	10 dBi Yagi mast or wall mount
AIR-ANT3338	21 dBi Solid Dish Antenna
AIR-ANT2430V-R	Ceiling mount omnidirectional
AIR-ANT24120	12 dBi Omnidirectional Mast Mount Antenna
AIR-ANT4941	2.2 dBi Dipole Antenna (Standard Rubber Duck)
AIRANT5140V-R	Ceiling mount omnidirectional
AIR-ANT2450S-R	5dBi wall mount indoor/outdoor antenna with RP-TNC connector for use with any 2.4 GHz radio
AIR-ANT2414S-R	14dBi Sector Mast Mount Antenna
AIR-ANT5145V-R	4.5 dBi omni
AIR-ANT5160V-R	6 dBi omni
AIR-ANT5170P-R	7.0 dBi Diversity patch wall mount
AIR-ANT5195P-R	9.5 dBi Patch wall or articulating mast mount
AIR-ANT2422DG-R	2.2 dBi Gray non-articulating dipole
AIR-ANT2422DW-R	2.2 dBi White dipole
AIR-ANT2450V-N	5 dBi, direct mount omnidirectional antenna for 2.4 GHz
AIR-ANT2480V-N	8 dBi direct mount omnidirectional antenna for 2.4 GHz
AIR-ANT2485P-R	8.5 dBi Patch wall mount
AIR-ANT2460P-R	6 dBi Patch wall mount
AIR-ANT2465P-R	6.5 dBi Diversity patch wall mount
AIR-ANT5114P-N	14 dBi wall/mast mount articulating patch antenna for 5 GHz
AIR-ANT5117S-N	17 dBi, 90 degree mast mount sector antenna for 5 GHz
AIR-ANT5180V-N	8 dBi direct mount omnidirectional antenna for 5 GHz
AIR-ANT5135DG-R	3.5 dBi Gray non-articulating dipole
AIR-ANT5135DW-R	3.5 dBi White dipole
AIR-ANT5175V-N	7.5 dBi Omnidirectional
AIR-ANT2455V-N	5.5 dBi Omnidirectional
AIR-ANT58G9V0A-N	9.0 dBi Omnidirectional mast mount
AIR-ANT58G10SSA-N	9.5 dBi Sector antenna, mast mount
AIR-ANT58G28SDA-N	28.0 dBi Dish antenna, mast mount

For More Information

http://www.cisco.com/go/antenna

Cisco 5500 Series Wireless LAN Controller

The Cisco 5500 Series Wireless Controller is a highly scalable and flexible platform that enables systemwide services for mission-critical wireless in medium to large-sized enterprises and campus environments. Designed for 802.11n performance and maximum scalability, this controller offers enhanced uptime with the ability to simultaneously manage 500 access points; superior performance for reliable streaming video and toll quality voice; and improved fault recovery for a consistent mobility experience in the most demanding environments.

Ideal for Companies That Need These Features

Cisco 5500 Series
- Enhanced enterprise scalability with a larger mobility domain that supports more access points
- Flexible licensing that allows access point capacity to be added as the business grows
- Teleworking features for improved business continuity
- System level security including DTLS encryption between access points and the controller
- Integrated radio resource management (RRM)—An intelligent RF control plane for self-configuration, self-healing, and self-optimization
- Cross-network access to real-time and historic RF interference information for quick troubleshooting and resolution
- Enterprise reliability—Automated recovery from lightweight access point and WLAN controller failures to maximize the availability of the wireless network

Key Features and Benefits

- Optimized for next-generation wireless networking
- Offer nine times the performance of 802.11a/g networks
- Support up to 500 access points and 7000 clients
- Support a larger mobility domain for improved network scale
- Offer integrated RF intelligence with CleanAir technology as part of the Cisco Unified Wireless Network with Cisco Aironet 3500 Series Access Points
- Flexible software licensing to add additional access points as your business needs grow
- Support advanced features in the base software license including the Cisco OfficeExtend solution for secure, mobile teleworking, Enterprise Wireless Mesh that dynamically establishes wireless connections in hard to wire areas.and Control and Provisioning of Wireless Access Points (CAPWAP) encryption that helps ensure full-line-rate encryption between access points and controllers across remote WAN and LAN links

Specifications

Feature	Cisco 5500 Series Wireless LAN Controller
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11n
Data RFCs	RFC 768 UDP; RFC 791 IP; RFC 2460 IPv6 (pass through Bridging mode only); RFC 792 ICMP; RFC 793 TCP; RFC 826 ARP; RFC 1122 Requirements for Internet Hosts; RFC 1519 CIDR; RFC 1542 BOOTP; RFC 2131 DHCP; CAPWAP RFC
Security Standards	WPA; IEEE 802.11i (WPA2, RSN); RFC 1321 MD5 Message-Digest Algorithm; RFC 1851 The ESP Triple DES Transform; RFC 2104 HMAC: Keyed Hashing for Message Authentication; RFC 2246 TLS Protocol Version 1.0; RFC 2401 Security Architecture for the Internet Protocol; RFC 2403 HMAC-MD5-96 within ESP and AH; RFC 2404 HMAC-SHA-1-96 within ESP and AH; RFC 2405 ESP DES-CBC Cipher Algorithm with Explicit IV; RFC 2406 IPsec; RFC 2407 Interpretation for ISAKMP; RFC 2408 ISAKMP; RFC 2409 IKE; RFC 2451 ESP CBC-Mode Cipher Algorithms; RFC 3280 Internet X.509 PKI Certificate and CRL Profile; RFC 3602 The AES-CBC Cipher Algorithm and Its Use with IPsec; RFC 3686 Using AES Counter Mode with IPsec ESP; RFC 4347 Datagram Transport Layer Security; RFC 4346 TLS Protocol Version 1.1
Encryption	WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys); SSL and TLS: RC4 128-bit and RSA 1024- and 2048-bit; AES: CCM, CCMP; IPSec: DES-CBC, 3DES, AES-CBC
AAA	IEEE 802.1X; RFC 2548 Microsoft Vendor-Specific RADIUS Attributes; RFC 2716 PPP EAP-TLS; RFC 2865 RADIUS Authentication; RFC 2866 RADIUS Accounting; RFC 2867 RADIUS Tunnel Accounting; RFC 2869 RADIUS Extensions; RFC 3576 Dynamic Authorization Extensions to RADIUS; RFC 3579 RADIUS Support for EAP; RFC 3580 IEEE 802.1X RADIUS Guidelines; RFC 3748 Extensible Authentication Protocol; Web-based authentication; TACACS support for management users
Management	SNMP v1, v2c, v3; RFC 854 Telnet; RFC 1155 Management Information for TCP/IP-Based Internets; RFC 1156 MIB; RFC 1157 SNMP; RFC 1213 SNMP MIB II; RFC 1350 TFTP; RFC 1643 Ethernet MIB; RFC 2030 SNTP; RFC 2616 HTTP; RFC 2665 Ethernet-Like Interface types MIB; RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual Extensions; RFC 2819 RMON MIB; RFC 2863 Interfaces Group MIB; RFC 3164 Syslog; RFC 3414 User-Based Security Model (USM) for SNMPv3; RFC 3418 MIB for SNMP; RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs; Cisco private MIBs
Management Interfaces	Web-based: HTTP/HTTPS; Command-line interface: Telnet, Secure Shell (SSH) Protocol, serial port; Cisco Wireless Control System (WCS)
Interfaces and Indicators	Uplink: 8 (5508) 1000BaseT, 1000Base-SX and 1000Base-LH transceiver slots; Small Form-Factor Pluggable (SFP) options (only Cisco SFPs supported): GLC-T, GLC-SX-MM.; GLC-LH-SM; LED indicators: link; Service Port: 10/100/1000 Mbps Ethernet (RJ45); Service Port: 10/100/1000 Mbps Ethernet (RJ45) For High Availability for future use; LED indicators: link; Utility Port: 10/100/1000 Mbps Ethernet (RJ45); LED indicators: link; Expansion Slots: 1 (5508); Console Port: RS232 (DB-9 male/RJ-45 connector included), mini-USB; Other Indicators: Sys, ACT, Power Supply 1, Power Supply 2
Regulatory Compliance	CE Mark; Safety: UL 60950-1:2003; EN 60950:2000; EMI and susceptibility (Class A): U.S.: FCC Part 15.107 and 15.109; Canada: ICES-003; Japan: VCCI; Europe: EN 55022, EN 55024

Selected Part Numbers and Ordering Information

AIR-CT5508-12-K9	Cisco 5500 Series WLAN Controller with 12 Cisco Aironet access point licenses
AIR-CT5508-25-K9	Cisco 5500 Series WLAN Controller with 25 Cisco Aironet access point licenses
AIR-CT5508-50-K9	Cisco 5500 Series WLAN Controller with 50 Cisco Aironet access point licenses
AIR-CT5508-100-K9	Cisco 5500 Series WLAN Controller with 100 Cisco Aironet access point licenses
AIR-CT5508-250-K9	Cisco 5500 Series WLAN Controller with 250 Cisco Aironet access point licenses
AIR-CT5508-500-K9	Cisco 5500 Series WLAN Controller with 500 Cisco Aironet access point licenses

For More Information

http://www.cisco.com/go/wireless

Cisco 4400 Series Wireless LAN Controller

The Cisco 4400 Series Wireless LAN Controller provides system-wide WLAN functions for medium to large-sized facilities. By automating WLAN configuration and management functions, network managers have the control, security, redundancy, and reliability needed to cost-effectively scale and manage their wireless networks as easily as they scale and manage their traditional wired networks.

The Cisco 4400 Series Wireless LAN Controller works in conjunction with Cisco Aironet lightweight access points, the Cisco Wireless Control System (WCS), the Cisco Mobility Services Engine, and the Cisco Wireless Location Appliance to support business-critical wireless data, voice, and video applications. It provides real-time communication between lightweight access points and other WLAN controllers to deliver centralized security policies, wireless intrusion prevention system (IPS) capabilities, award-winning RF management, QoS, and mobility.

Ideal for Companies That Need These Features

Cisco 4400 Series
- Enterprise scalability—Provides business-critical wireless services for locations of all sizes
- Integrated radio resource management (RRM)—An intelligent RF control plane for self-configuration, self-healing, and self-optimization
- Enterprise reliability—Automated recovery from lightweight access point and WLAN controller failures to maximize the availability of the wireless network

Key Features and Benefits

- Component of Cisco Unified Wireless Network
- Multilayered security
- Enterprise scalability
- Rogue AP detection, location, and containment
- Zero-configuration deployment

Specifications

Feature	Cisco 4400 Series Wireless LAN Controller
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11h, 802.11n
Data RFCs	RFC 768 UDP, RFC 791 IP, RFC 792 ICMP,RFC 793 TCP, RFC 826 ARP, RFC 1122 Requirements for Internet Hosts, RFC 1519 CIDR, RFC 1542 BOOTP, RFC 2131 DHCP
Security Standards	Wi-Fi Protected Access (WPA); IEEE 802.11i (WPA2, RSN); RFC 1321 MD5 Message-Digest Algorithm; RFC 2104 HMAC: Keyed Hashing for Message Authentication; RFC 2246 TLS Protocol Version 1.0; RFC 3280 X.509 PKI Certificate and CRL Profile
Encryption	WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys); Secure Sockets Layer (SSL) and TLS: RC4 128-bit and RSA 1024- and 2048-bit; AES: CCM, CCMP
AAA	IEEE 802.1X; RFC 2548 Microsoft Vendor-Specific RADIUS Attributes; RFC 2716 PPP EAP-TLS; RFC 2865 RADIUS Authentication; RFC 2866 RADIUS Accounting; RFC 2867 RADIUS Tunnel Accounting; RFC 2869 RADIUS Extensions; RFC 3576 Dynamic Authorization Extensions to RADIUS; RFC 3579 RADIUS Support for EAP; RFC 3580 IEEE 802.1X RADIUS Guidelines; RFC 3748 Extensible Authentication Protocol; Web-based authentication
Management	SNMP v1, v2c, v3; RFC 854 Telnet; RFC 1155 Management Information for TCP/IP-Based Internets; RFC 1156 MIB; RFC 1157 SNMP; RFC 1213 SNMP MIB II; RFC 1350 TFTP; RFC 1643 Ethernet MIB; RFC 2030 SNTP; RFC 2616 HTTP; RFC 2665 Ethernet-Like Interface types MIB; RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions; RFC 2819 RMON MIB; RFC 2863 Interfaces Group MIB; RFC 3164 Syslog; RFC 3414 User-Based Security Model (USM) for SNMPv3; RFC 3418 MIB for SNMP; RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs; Cisco private MIBs
Management Interfaces	Web-based: HTTP/HTTPS; Command-line interface: Telnet, SSH, serial port; Cisco Wireless Control System (WCS)

Interfaces and Indicators	Uplink: 2 (4402) or 4 (4404) 1000Base-X mini-GBIC transceiver slots (SFP): –LED indicators: link, activity; Service Port: 10/100 Mbps Ethernet (RJ45): LED indicators: link, activity; Utility Port: 10/100/1000 Mbps Ethernet (RJ45): LED indicators: link, activity; Expansion Slots: 1 (4402) or 2 (4404); Console Port: RS232 (DB-9 male, DTE interface); Other Indicators: Status, Alarm, Power Supply 1, Power Supply 2
Regulatory Compliance	CE Mark; Safety: UL 60950-1:2003, EN 60950:2000; EMI and susceptibility (Class A): U.S.: FCC Part 15.107 and 15.109, Canada: ICES-003, Japan: VCCI, Europe: EN 55022, EN 55024

Selected Part Numbers and Ordering Information

AIR-WLC4402-12-K9	Cisco 4400 Series WLAN Controller for up to twelve Cisco Aironet access points
AIR-WLC4402-25-K9	Cisco 4400 Series WLAN Controller for up to twenty-five Cisco Aironet access points
AIR-WLC4402-50-K9	Cisco 4400 Series WLAN Controller for up to fifty Cisco Aironet access points
AIR-WLC4404-100-K9	Cisco 4400 Series WLAN Controller for up to one-hundred Cisco Aironet access points

For More Information

http://www.cisco.com/go/wireless

Cisco 2100 Series Wireless LAN Controller

Cisco Wireless LAN (WLAN) controllers are responsible for systemwide WLAN functions such as security policies, intrusion prevention, RF management, and quality of service (QoS). They work in conjunction with Cisco lightweight access points and the Cisco Wireless Control System (WCS) to support business-critical wireless applications. From voice and data services to location tracking, Cisco WLAN controllers provide the control, scalability, and reliability that network managers need to build secure, enterprise-scale wireless networks, from branch offices to main campuses.

The Cisco 2100 Series Wireless LAN Controllers support up to six, twelve or twenty-five access points, making it a cost-effective solution for enterprise branches and small and medium businesses. These controllers come with eight Ethernet ports, two of which can provide power directly to Cisco lightweight access points.

Ideal for Companies That Need These Features

Cisco 2100 Series
- An enterprise scalable architecture that provides business-critical wireless services for small businesses and branch offices
- An intelligent RF control plane for self-configuration, self-healing, and self-optimization
- A system that can be deployed without modifying existing routing and switching infrastructures or touching access points

Key Features and Benefits

- Component of Cisco Unified Wireless Network
- Business-class RF security and WLAN security policy monitoring
- Simplified network deployment, operations, and management to help reduce overall operational expenses
- Integration with the Cisco PCI security-compliant reference design

Specifications

Feature	Cisco 2106 Series Wireless LAN Controller
Wireless	IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11h, 802.11n
Wired/Switching	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, and IEEE 802.1Q VLAN tagging
Data RFCs	RFC 768 UDP, RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 826 ARP, RFC 1122 Requirements for Internet Hosts, RFC 1519 CIDR, RFC 1542 BOOTP, RFC 2131 DHCP
Security Standards	Wi-Fi Protected Access (WPA), IEEE 802.11i (WPA2, RSN), RFC 1321 MD5 Message-Digest Algorithm, RFC 2104 HMAC: Keyed Hashing for Message Authentication, RFC 2246 TLS Protocol Version 1.0, RFC 3280 X.509 PKI Certificate and CRL Profile
Encryption	"WEP and TKIP-MIC: RC4 40, 104 and 128 bits (both static and shared keys), Secure Sockets Layer (SSL) and TLS: RC4 128-bit and RSA 1024- and 2048-bit, AES: CCM, CCMP
AAA	IEEE 802.1X, RFC 2548 Microsoft Vendor-Specific RADIUS Attributes, RFC 2716 PPP EAP-TLS, RFC 2865 RADIUS Authentication, RFC 2866 RADIUS Accounting, RFC 2867 RADIUS Tunnel Accounting, RFC 2869 RADIUS Extensions, RFC 3576 Dynamic Authorization Extensions to RADIUS, RFC 3579 RADIUS Support for EAP, RFC 3580 IEEE 802.1X RADIUS Guidelines, RFC 3748 Extensible Authentication Protocol, Web-based authentication
Management	SNMP v1, v2c, v3, RFC 854 Telnet, RFC 1155 Management Information for TCP/IP-Based Internets, RFC 1156 MIB, RFC 1157 SNMP, RFC 1213 SNMP MIB II, RFC 1350 TFTP, RFC 1643 Ethernet MIB, RFC 2030 SNTP, RFC 2616 HTTP, RFC 2665 Ethernet-Like Interface types MIB, RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions, RFC 2819 RMON MIB, RFC 2863 Interfaces Group MIB, RFC 3164 Syslog, RFC 3414 User-Based Security Model (USM) for SNMPv3, RFC 3418 MIB for SNMP, RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs, Cisco private MIBs

Management Interfaces	Designed for use with Cisco Wireless Control System, Web-based: HTTP/HTTPS individual device manager, Command-line interface: Telnet, SSH, serial port
Interfaces and Indicators	Console port: RS-232 (DB-9 male/RJ-45 connector included); Network: Eight 10/100 Mbps Ethernet (RJ-45) including two 802.3af PoE ports rated for use with Cisco Aironet lightweight access points; LED indicators: Link Activity (each 10/100 port), Power, Status, Alarm, Access Point Joined
Regulatory Compliance	CE Mark, Safety: UL 60950-1:2003, EN 60950:2000, EMI and susceptibility (Class B): U.S.: FCC Part 15.107 and 15.109, Canada: ICES-003; Japan: VCCI, Europe: EN 55022, EN 55024
Temperature	· Temperature: Operating: 32 to 104ûF (0 to 40ûC), Storage: -13 to 158ûF (-25 to 70ûC) · Humidity: Operating humidity: 10 to 95 percent, noncondensing · Storage humidity: Up to 95 percent, Heat Dissipation: 92 BTU/hour
Dimensions (W x D x H)	1.75 x 7.89 x 6.87 in. (4.45 x 20.04 x 17.45 cm)
Weight	4.0 lb (1.81 kg) with power supply
Power	Input power: 100 to 240 VAC; 50/60 Hz

Selected Part Numbers and Ordering Information

AIR-WLC2106-K9	Cisco 2106 Series Wireless LAN Controller for up to six Cisco Aironet access points
AIR-WLC2112-K9	Cisco 2112 Series Wireless LAN Controller for up to twelve Cisco Aironet access points
AIR-WLC2125-K9	Cisco 2125 Series Wireless LAN Controller for up to twenty-five Cisco Aironet access points

For More Information

http://www.cisco.com/go/wireless

Cisco Wireless Control System

The Cisco Wireless Control System (WCS) is the industry's most comprehensive management platform for lifecycle management of 802.11n and 802.11a/b/g, enterprise-class wireless networks. This robust platform delivers a cost-effective management solution that enables IT administrators to successfully plan, deploy, monitor, troubleshoot, and report on indoor and outdoor wireless networks.

As the management platform for the Cisco Unified Wireless Network, Cisco WCS supports the delivery of high-performance applications and mission-critical solutions that simplify business operations and improve productivity. It also supports Cisco CleanAir technology, a system-wide capability of the Cisco Unified Wireless Network that uses silicon-level intelligence to create a self-healing, self-optimizing wireless network

Cisco WCS is a comprehensive platform that scales to meet the needs of small, midsize, and large-scale wireless LANs across local, remote, national, and international locations. This award-winning solution gives IT managers immediate access to the tools they need, when they need them, to more efficiently implement and maintain secure wireless LANs —all from a centralized location requiring minimal IT staffing.

Operational costs are significantly reduced through the Cisco WCS intuitive GUI, simplified ease-of-use, and built-in tools that deliver improved IT efficiency, lowered IT training costs, and minimized IT staffing requirements, even as the network grows. Unlike overlay management tools, Cisco WCS lowers operational costs by incorporating the full breadth of management requirements from radio frequency to controllers to services into a single unified platform.

Ideal for Companies That Need These Features

Cisco Wireless Control System	· Centralized platform for comprehensive, wireless LAN lifecycle management of Cisco Wireless LAN controllers, Cisco Aironet access points, and mobility services delivered by the Cisco Mobility Services Engine (MSE) · Easy-to-use tools, templates, and guides to more effectively plan, deploy, monitor, troubleshoot, and report on indoor and outdoor wireless networks · Built-in security monitoring with intrusion detection systems (IDSs) and adaptive wireless intrusion prevention systems (wIPS) · Secure, cost-effective wired and wireless guest access · Cisco Energy-Wise power savings · Protects the performance of 802.11n by mitigating RF interference with Cisco CleanAir technology

Key Features and Benefits

· WLAN lifecycle management—Comprehensive wireless LAN lifecycle management includes a full range of planning, deployment, monitoring, troubleshooting, and reporting capabilities.
· Simplified ease-of-use—Intuitive GUI and easy-to-use tools, guides, and templates deliver improved IT efficiency, and lowered IT training costs.
· Modularized interface—User-defined customization is supported to display only the most relevant information.
· Scalability—Manage hundreds of Cisco wireless LAN controllers and thousands of Cisco Aironet access points from a centralized location.

- RF interference detection and mitigation—Integration with Cisco CleanAir technology to find, classify, correlate, and mitigate sources of interference from Wi-Fi and non-Wi-Fi sources to improve air quality and create a self-healing, self-optimizing wireless network.
- Planning—Built-in planning and design tools simplify defining access point placement and coverage helping to reduce (and in many cases, eliminate) improper RF designs and coverage problems.
- Deployment—A broad array of integrated templates and tools deliver quick and cost-effective deployments and effective configuration management.
- Centralized security and network protection—Streamlined administration and monitoring of the WLAN's security status for all security-related events and network conditions is provided from a single, comprehensive view. Automated alarms enable rapid responses to mitigate risks.
- Robust wIPS—Quick detection, location, and containment of unauthorized (rogue) devices is supported by a robust wIPS.
- Monitoring—Centralized monitoring of the entire WLAN helps maintain robust WLAN performance and an optimal wireless experience.
- Hierarchical maps—Quick access to different geographies, campuses, buildings, floors, and regions supports better network visibility and control.
- Google Earth integration—Enhanced visibility and management of outdoor wireless mesh deployments is delivered through integration with Google Earth.
- Troubleshooting—Integrated workflows and tools help IT administrators quickly assess service disruptions, receive notices about performance degradation, research resolutions, and take action to remedy nonoptimal situations.
- Client troubleshooting tool—A client troubleshooting tool supports a step-by-step method to analyze problems for all client devices. Specialized diagnostic tools support enhanced analysis of connection problems and mis-configurations occurring with Cisco Compatible Extensions clients Version 5 or later.
- Reporting—Extensive on-demand and automated reports can be run to address inventory, performance, controllers, access points, clients, security, RF environment, and alarms. Reports are customizable.
- Reporting to third-party northbound receivers—Alarms and events can be forwarded to third-party northbound receivers and FCAPS applications that understand traps such as HP OpenView or IBM Tivoli Netcool.
- PCI compliance report—Event analysis and audit trails provide assistance in creating a PCI Assessment Report.
- Standalone access point migration tool—Easy migration of standalone (autonomous) access points to operate as lightweight access points with wireless LAN controllers reduces operational costs.
- Monitoring of standalone access points—Built-in monitoring of selected Cisco Aironet standalone access points is supported as well as monitoring of selected Cisco integrated services routers access points.
- Role-based access control—Virtual domains give IT organizations and managed service providers the ability to easily manage multiple WLANs directly from a single Cisco WCS platform.
- Context-Aware Mobility Solution—Detailed contextual information about items such as location, temperature, the availability of an asset, and applications used can be integrated into the network in conjunction with Cisco MSE and Cisco Context-Aware software.
- Secure guest access—Organizations can provide wired and wireless access to guests such as customers, vendors, and partners, while keeping their wireless network secure.
- Voice over wireless LAN—A variety of advanced tools are included to plan, deploy, monitor, and optimize the WLAN for voice over wireless LAN (VoWLAN).
- Cisco Energy-Wise—Power savings are delivered through adaptive WLAN power management features.
- Simplified software upgrades—One-click software upgrade simplifies the process for upgrading to the latest software release.
- Easy conversion of CiscoWorks Wireless LAN Solution Engine (WLSE)—Converting an existing CiscoWorks WLSE (models 1130-19 and 1133) to operate as a Cisco WCS is supported to reduce capital expenditures and improve operational efficiency.

Specifications

Feature	Cisco Wireless Control System (WCS)
Operating Systems (Customer Supplied Server)	• Windows 2003 SP1 or subsequent service packs. Windows 2008 is not a supported platform • Redhat Linux AS/ES v5.0 (Releases 4.2.x or 5.0 or later); Redhat Linux AS/ES v4.0 (Release 4.2 and later) • VMware ESX Server 3.0.1 or later. (Minimum hardware requirements for a dedicated and guaranteed VMware server: Intel® Xeon Quad CPU; 3.15 GHz, 8 GB RAM, 200 GB HDD)
Minimum Server Requirements	• Cisco WCS High-End Server: 3000 lightweight access points, 1250 standalone access points, 750 wireless LAN controllers, Two Intel Xeon Quad Core CPUs; 3.16 GHz, 8 GB RAM, 200 GB HDD (free space) • Cisco WCS Standard Server: 2000 lightweight access points, 1000 standalone access points, 450 wireless LAN controllers, Intel® Dual Core CPU; 3.2 GHz, 4 GB RAM, 80 GB HDD (free space) • Cisco WCS Low-End Server: 500 lightweight access points, 200 standalone access points, 125 wireless LAN controllers, Intel® CPU; 3.06 GHz, 2 GB RAM, 50 GB HDD (free space) • CiscoWorks WLSE Models 1130-19 or 1133 running Cisco WCS: 1500 lightweight access points, 161 wireless LAN controllers, Intel Pentium 4 CPU; 3 GHz, 3 GB RAM, 38 GB HDD (free space)
Minimum Client Requirements	Internet Explorer 6.0/SP1 or later, and Mozilla Firefox 3.5 or later
Management and Security	SNMP v1, v2c, v3 and TACACS+ PNG, JPEG, PDF, and AutoCAD (DXF and DWG) import file types supported

Managed Devices	• Cisco 2000, 2100, 4100, 4400, and 5500 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module (WiSM), Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points, Cisco Aironet access points with Cisco CleanAir technology, Cisco Aironet lightweight outdoor mesh access points, Cisco CleanAir (Cisco Spectrum Expert Wi-Fi), Cisco Wireless Location Appliance, Cisco 3300 Series Mobility Services Engine (MSE), Context-Aware Software, and Cisco wireless Intrusion Prevention System (wIPS) • Monitoring and migration of selected Cisco Aironet standalone (autonomous) access points. Monitoring of the standalone access points of Cisco 800, 1800, 2800, and 3800 Series Integrated Services Routers
Database	Integrated Solid Flow Engine SQL

Selected Part Numbers and Ordering Information

WCS-STANDARD-K9	Cisco WCS Base and Plus licenses for new and expanded Cisco WCS deployments. Supports deployment of Cisco WCS on a single server. Cisco WCS Plus license supports mobility services enablement, high availability, and location services for one Wi-Fi device or tag on demand. Cisco WCS Plus license backward-compatible with existing Cisco WCS location and enterprise licenses.
WCS-APBASE-50, 100, 500	Cisco WCS Base License, Windows/Linux (supports 50, 100, and 500 APs)
WCS-PLUS-50, 100, 500	Cisco WCS with Plus license for mobility services enablement and high availability, Windows/Linux (supports 50, 100, and 500 APs)
WCS-WLSE-UPG-K9	Converting Existing CiscoWorks WLSE to Cisco WCS (Only supported on Linux platform for CiscoWorks WLSE Models 1130-19 and 1133)
WCS-WLSE-APB-50, 100, 500, 1000	Cisco WCS Base License for WLSE conversion, Linux (supports 50, 100, 500, and 1000 APs)
WCS-WLSE-PLUS-50, 100, 500	Cisco WCS Plus license with mobility services enablement and high availability for WLSE conversion, Linux (supports 50, 100, 500, and 1000 APs)
WCS-PLUS-UPG-K9	Upgrading Cisco WCS Base to Cisco WCS Plus. Supports deployment of Cisco WCS on a single server. Supports upgrading a Cisco WCS base license to support mobility services enablement, high availability, and location services for one Wi-Fi device or tag on demand.
WCS-PLUS-UPG-50, 100, 500	Cisco WCS Plus Upgrade license with mobility services enablement and high availability, Windows/Linux (supports 50, 100, and 500 APs)
WCS-ENT-PLUS-K9	Enterprise licenses for large-scale deployments. Supports deployment of Cisco WCS on a single or multiple servers. Supports mobility services enablement, high availability and the ability to track the location of a single Wi-Fi device or tag on demand, Enterprises Plus licenses of 10,000 and 50,000 include a Cisco WCS Navigator license (WCS-NAV-20), Enterprise Plus licenses are operational with Cisco Unified Wireless Network Software Release 4.1 and later.
WCS-ENT-PLUS-1000, 2500, 10000, 50000	Cisco WCS Enterprise Plus license with mobility services enablement and high availability, Windows/Linux on multiple Cisco WCS servers (supports 1000, 2500, 10000, and 50000 APs)
AIR-WCS-DEMO-K9	Cisco WCS Demonstration License (This license is only available from https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet?DemoKeys=Y. After requesting the license, go to Cisco Wireless Software Center (login required) to download Cisco WCS software. Free Cisco WCS full featured, location-enabled, 30 day-demonstration license supporting ten lightweight access points.

For More Information
http://www.cisco.com/en/US/products/ps6305/index.html

Cisco Wireless Control System Navigator

The Cisco Wireless Control System (WCS) Navigator delivers an aggregated platform for enhanced scalability, manageability, and visibility of large-scale implementations of the Cisco Unified Wireless Network. This solution gives network administrators cost-effective, easy access to information from multiple, geographically dispersed Cisco WCS management platforms.

The navigator supports partitioning of the unified wireless network at the management plane. It runs on a server platform with an embedded database.

Ideal for Companies That Need These Features

Cisco Wireless Control System Navigator	• Ability to manage up to 20 geographically dispersed Cisco WCS management platforms with up to 30,000 Cisco Aironet lightweight access points from a single management console • Ability to partition the unified wireless network at the management plane • Ability to conduct centralized and quick searches across the entire network, multiple Cisco WCS management platforms, and all devices • Ability to partition Cisco WCS platforms to restrict selected users to a single Cisco WCS platform or group of Cisco WCS platforms to support access control based on a variety of criteria, including geography, departments, and managed services customers

Key Features and Benefits

- Intuitive GUI—Easy configuration and monitoring of multiple Cisco WCS management platforms with minimal training is supported.
- Monitoring—Centralized network monitoring is fully supported.
- Network summary screen—Outstanding alarms, fault summaries, client counts, and status counts of all connected Cisco WCS management platforms and devices are displayed on a network summary screen.
- Secure single sign-on—With a secure single sign-on feature, individual users do not need to be created on each Cisco WCS management platform.
- Automated browser redirect—Users are automatically redirected to the corresponding Cisco WCS management platform detail page on searches or displays.
- Searches— Centralized and quick searches across the entire network, multiple Cisco WCS management platforms, and all devices are easy to perform.
- Tracking—Client locations and Wi-Fi and rogue devices are easily tracked across the entire network.
- Ease-of-use—The solution offers simplified setup and configuration.
- Centralized management— Indoor and outdoor WLANs can be monitored from a single management console.
- Reports—Detailed inventory reports can be automatically generated, scheduled and exported by e-mail message or CSV file.

Specifications

Feature	Cisco Wireless Control System Navigator
Minimum server requirements	Windows 2003 SP1 or greater, or Redhat Linux AS/ES v4.0 High-End Server: Intel® Xeon Quad CPU; 3.15 GHz, 8-GB RAM, and 200-GB HDD
Minimum client requirements	Internet Explorer 6.0 with SP1 or later
Software release requirements	Cisco WCS management platforms must be running Cisco Unified Wireless Network Software Release 4.1 or later to interface with Cisco WCS Navigator
Management	SNMP v1, v2c, and v3
Managed devices	Up to 20 Cisco WCS management platforms with manageability of up to 30,000 Cisco Aironet lightweight access points
Database	Integrated Solid FlowEngine Structured Query Language (SQL)

Selected Part Numbers and Ordering Information

WCS-NAV-20	Cisco WCS Navigator License to support 20 Cisco WCS management platforms

For More Information

http://www.cisco.com/en/US/products/ps7305/index.html

Cisco Spectrum Expert Wi-Fi

The Cisco Spectrum Expert Wi-Fi integrates with the Cisco Unified Wireless Network to deliver real-time spectrum intelligence for Wi-Fi networks. This industry-leading solution detects, classifies, and locates sources of RF interference in the unlicensed 2.4- and 5-GHz bands using a PCMCIA card.

The Cisco Wireless Control System (WCS) works in conjunction with Cisco Spectrum Expert Wi-Fi to provide visibility into non-Wi-Fi interference sources that may cause wireless performance degradation. You can determine the source of the interference with Cisco Spectrum Expert Wi-Fi, allowing your business to remove, move, shield, adjust, or replace the interference source. Your organization can troubleshoot its wireless networks to determine the root causes of interference problems and optimize network performance.

Note: For integrated RF detection and mitigation using system-level intelligence, please see the Cisco Aironet 3500 Series access point with Cisco CleanAir technology.

Ideal for Companies That Need These Features

Cisco Spectrum Expert Wi-Fi

- Ensure access points are providing reliable coverage with spectrum performance audits
- Secure a network by locating non-Wi-Fi rogue devices
- See hacked or rogue Wi-Fi devices that other intrusion detection systems/intrusion protection systems (IDSs/IPSs) do not detect
- Locate unauthorized devices such as Bluetooth radios and video cameras
- Determine whether neighbors are interfering with the Wi-Fi network

Key Features and Benefits

The Cisco Spectrum analysis tool monitors the airwaves in your wireless network and allows you to:

- Quickly and accurately determine Wi-Fi spectrum health and sources of interference
- Manage channel capacity and quality at the physical layer
- Quickly eliminate interference sources

Specifications

Feature	Cisco Spectrum Expert Wi-Fi Specifications
Dimensions	Unit sizes: Cardbus Type II and Express Card 54 mm; Unit weight: 1.65 oz and 1.35 oz; Shipping weight: 1 lb; Operating temperature: 32F to 131F; Storage temperature: -4F to 149F
Analyzer Specification	Displayed average noise level: -124 dBm; Reference level: -150 (min) to +10 (max) dBm; 512 MB capture limit; Frequency stability: +/-20 ppm; Max safe input level: 0 dBm; Amplitude accuracy: =/- 2.5 dBm; Public safety: 4.9 GHz; Frequency span at 2.4 GHz: 0.03 (min) to 100 (max) MHz; Frequency span at 5 GHz: 0.03 (min) to 975 (max) MHz; Center frequency resolution: 10 kHz; Resolution bandwidth: 0.01 (min) to 5 (max) MHz; Sweep time RTFFT mode: 6.4 us; Sweep time PvT mode: 10 ms (max); Trigger delay (ms): -10 (min) to +10 (max); Power consumption: -3.3V @ 425 mA or 1.4 watts
Classifier Specification	802.11a/bg via onboard or external Wi-Fi chipset; Bluetooth SCO, ACL; DECT cordless phones TDD cordless phones; Analog cordless phones; Analog video (NTSC, PAL, SECAM); Microwave ovens; Generic classifiers; Radar
Application	
Minimum system requirements	Microsoft Vista or Windows XP SP2; Processor: 1 GHz or equivalent; 150 MB hard drive available storage space; 800 x 600 display
Interoperability	Cisco WCS 4.2 Later
Cisco Spectrum Expert Antenna	
Frequency Range	2.4-2.5 GHz, 4.9-5.9 GHz
Gain	5 dBi
Polarization	Linear

Selected Part Numbers and Ordering Information

Cisco Spectrum Expert Wi-Fi Product and Service	
AIR-CSCO-SE-WIFI-C	Cisco Spectrum Expert Wi-Fi (CardBus)—Includes CardBus adapter, omni antenna with clip, and quick start guide with software download instructions. A single Cisco Spectrum Expert Software seat can only be used with one Cisco Spectrum Expert Sensor Wi-Fi.
CON-SNT-SEWIFICB	Cisco Spectrum Expert Wi-Fi (CardBus)—SMARTnet next business day service[1]
Cisco Spectrum Expert Wi-Fi Antenna Spare	
AIR-ANT-SE-WIFI-D=	2.4-2.5 and 4.9-5.9 GHz Directional Antenna, Spare—Spare Directional antenna for Cisco Spectrum Expert Wi-Fi
AIR-ANT-SE-WIFI-O=	2.4-2.5 and 4.9-5.9 GHz Omni Antenna, Spare—Spare Omni antenna for Cisco Spectrum Expert Wi-Fi

1. Includes advanced replacements next business day, 24-hour Cisco Technical Assistance Center (TAC) access, and software downloads.

A Cisco WCS Spectrum Intelligence license is required to operate Cisco Spectrum Expert Wi-Fi with Cisco WCS. The following table provides the part numbers for the Cisco WCS Spectrum Intelligence license for Cisco Spectrum Expert Wi-Fi.

WCS-ADV-K9	Family SKU for WCS Advance License Products—Top-level SKU for Cisco WCS advance feature licenses
WCS-ADV-SI-SE-10	Cisco WCS Spectrum Intelligence License for 10 Sensors—License option compatible with Cisco WCS 4.2 or later configured with Base and/or Location license.
WCS-ADV-SI-SE-10=	Cisco WCS Spectrum Intelligence License for 10 Sensors, Spare—Spare license compatible with Cisco WCS 4.2 or later configured with Base and/or Location license.

License Pack Guidelines

Customers can purchase the Cisco Spectrum Intelligence license for Cisco Spectrum Expert Wi-Fi in two ways. Customers who wish to purchase all WCS advanced feature licenses, including the Cisco Spectrum Intelligence license, for use on a single WCS host should purchase the Cisco WCS advanced feature pack (WCS-ADV-K9) and then specify the option for the Cisco Spectrum Intelligence license (WCS-ADV-SI-SE-10). Customers who wish to purchase licenses that can be used across multiple WCS hosts should purchase Cisco Spectrum Intelligence license spares (WCS-ADV-SI-SE-10).

- WCS-ADV-K9—The Cisco WCS advanced feature license pack includes license keys for advanced features, including Cisco Spectrum Intelligence. The license pack may only be used on a single WCS host.
- WCS-ADV-SI-SE-10—This part number represents the option for the Cisco Spectrum Intelligence advanced feature as part of the Cisco WCS advanced feature license pack (WCS-ADV-K9). Customers must specify this part number when ordering Cisco Spectrum Intelligence as part of the combined WCS advanced feature license pack.
- WCS-ADV-SI-SE-10=—Users who wish to purchase multiple licenses to be deployed across numerous WCS hosts should purchase the Cisco Spectrum Intelligence license as a spare unit (WCS-ADV-SI-SE-10=). If a customer orders more than one spare, the system will generate a license pack for each spare ordered. In other words, the number of license packs equals the number of spares ordered.

Cisco customers can contact their local Cisco representatives for questions related to Cisco WCS licensing. Cisco employees or partners can contact wcs-customer-license@cisco.com.

For More Information

Cisco 3300 Series Mobility Services Engine

The Cisco 3300 Series Mobility Services Engine is an open platform that provides a new approach for the delivery of mobility services to enable mobile business applications. A combination of hardware and software, the mobility services engine is an appliance-based solution that supports a suite of software services to provide centralized and scalable service delivery. It transforms the wireless LAN (WLAN) into a mobility network by abstracting the application layer from the network layer, effectively allowing for the delivery of mobile applications across different types of networks, including Wi-Fi, Ethernet, cellular, WiMAX, and RFID.

To deliver true business mobility, IT must take a practical approach focused on unifying networks, managing the wave of mobile devices, and enabling mobile application development. The Cisco 3300 Series Mobility Services Engine is at the heart of this mobility architecture evolution. It provides an open application programming interface (API) that allows a broader ecosystem of partners to access network intelligence to develop industry-relevant mobility solutions. An extension of the Cisco Unified Wireless Network, the mobility services engine integrates with Cisco Unified Communications and Cisco compatible devices to deliver a comprehensive approach to business mobility, an approach that extends applications to the right device at the right time, no matter which network is being used.

Ideal for Companies That Need These Features

Cisco 3300 Series
- Rapid delivery of new services and applications
- Unification of multiple access networks to help ensure more transparent application delivery
- Central management, and scalable and flexible services delivery
- Investment protection of their existing Cisco Unified Wireless Network

Key Features and Benefits

- Extensible platform for rapid delivery of services and applications—Allows the abstraction of services and applications from the control and data planes so that each may evolve independently; a common framework for hosting multiple mobility services; An open application programming interface (API) supports third-party and partner application development.
- Ecosystem of application partners—Delivers new mobility services as well as applications targeted at various industries, including healthcare, retail, education, and manufacturing.
- Scalability—Multiple services can be deployed on a single Cisco 3300 Series Mobility Services Engine or a single service can span multiple mobility services engines.
- Manageability—The Cisco 3300 Series Mobility Services Engine serves as a single point of integration for the various value-added services; All mobility services are managed centrally through integration with the Cisco Wireless Control System.
- Flexibility—The Cisco 3300 Series Mobility Services Engine is an extensible platform capable of supporting a variety of services configurations to meet business requirements. The architecture facilitates the inclusion of newer technology standards as and when they become available.
- Return on investment—The Cisco 3300 Series Mobility Services Engine integrates with the Cisco Unified Wireless Network to provide network intelligence, including contextual information to optimize business applications. This architecture builds upon the existing investment in Cisco wireless and mobility solutions and provides a platform that is both flexible and scalable to meet evolving business mobility requirements.

Specifications

Feature	Cisco 3310 Mobility Services Engine	Cisco 3350 Mobility Services Engine
Supported Services	· Context-aware software to track up to 2000 Wi-Fi Clients or Wi-Fi Tags · Adaptive Wireless Intrusion Prevention System software to support up to 2000 monitor mode access points	· Context-aware software to track up to 18,000 · Wi-Fi Clients or Wi-Fi Tags
Processor	(1) Dual-Core Intel Processor 1.8 GHz	(2) Quad-Core Intel Xeon Processors 2.33 GHz
Memory	4-GB PC2-5300 (4 x 1 GB)	8-GB PC2-5300 (4 x 2 GB)
Hard Disk	(2) Fixed 247-GB Serial ATA-150 / SATA-300 MBps	(2) Hot-swappable 137-GB SAS-300 MBps drives
Removable Media	DVD/CD-RW combo drive	DVD/CD-RW combo drive
Connectivity	Network: Two embedded Multifunction Gigabit Network Adapters	Network: Two embedded Multifunction Gigabit Network Adapters with TCP/IP Offload Engine
Management	SNMP v1, v2c, and v3	SNMP v1, v2c, and v3
Programming Interfaces	SOAP/XML APIs	SOAP/XML APIs
Management Interface	Cisco WCS Mobility Services v.5.2 or greater running Internet Explorer 6.0/Service Pack 1 or later	Cisco WCS Mobility Services v.5.2 or greater running Internet Explorer 6.0/Service Pack 1 or later
Cooling Fans	Total of three fans	Total of nine fans, N+1 fan redundancy

Ports	· Serial: One 9-pin connector · RJ-45: Two RJ-45 connectors for connection to two Gigabit Network Adapters · 3 USB 2.0 ports: (1) front, and (2) rear accessible ports · 2 PS2 ports: One mouse and one keyboard · 1 VGA port	· Serial: One 9-pin connector · RJ-45: Two RJ-45 connectors for connection to two Gigabit Network Adapters · 4 USB 2.0 ports: (1) front, (1) internal, and (2) rear accessible ports · 2 PS2 ports: One mouse and one keyboard · 1 VGA port
Network Devices	Cisco 2100, 4400, 5500 (requires WCS Mobility Services v. 6.0) Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module, Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet® lightweight access points	Cisco 2100 and 4400 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module, Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points
Form Factor	Height: 1.70 in. (4.32 cm) Width: 16.78 in. (42.62 cm) Depth: 20 in. Weight: 15 lbs maximum	Height: 1.70 in. (4.32 cm) Width: 16.78 in. (42.62 cm) Depth: 27.25 in. (69.22 cm) Weight: 39.5 lbs (17.92 kg) maximum
Physical Dimensions	Height: 1.70 in. (4.32 cm) Width: 16.78 in. (42.62 cm) Depth: 20 in. Weight: 15 lbs maximum	Height: 1.70 in. (4.32 cm) Width: 16.78 in. (42.62 cm) Depth: 27.25 in. (69.22 cm) Weight: 39.5 lbs (17.92 kg) maximum
Power	AC power supply wattage: 540W AC power supply voltage: 100–120V at 50–60 Hz; 200–240V at 50–60 Hz	AC power supply wattage: 852W AC power supply voltage: 100–120V at 50–60 Hz; 200–240V at 50–60 Hz Redundant Power Supplies
Environmental	Operating temperature: 50 to 95°F (10–35°C) at sea level Nonoperating: –40 to 158°F (–40 to 70°C) Maximum rate of change is 20°C/hr (36°F/hr)	Operating temperature: 50 to 95°F (10–35°C) at sea level Nonoperating: –40 to 158°F (–40 to 70°C) Maximum rate of change is 20°C/hr (36°F/hr)
Approvals and Compliance	Safety UL 60950 CAN/CSA -C22.2 No. 60950 EN60950 IEC 60950: EMC FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI Class A EN 55024 EN 50082-1	Safety UL 60950 CAN/CSA -C22.2 No. 60950 EN60950 IEC 60950: EMC FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55022 Class A CISPR22 Class A AS/NZS 3548 Class A VCCI Class A EN 55024 EN 50082-1
Software Compatibility	· Available with Cisco Mobility Services Engine (MSE) Software Release 5.1.xxx or later · Requires WLC software version 4.2.130 or later and Wireless Control System (WCS) Version 5.2 or later · Supported services may have different software requirements	· Available with Cisco Mobility Services Engine (MSE) Software Release 5.2.xxx or later · Requires WLC software Version 4.2.130 or later and WCS Version 5.1 or later · Supported services may have different software requirements

Selected Part Numbers and Ordering Information

AIR-MSE-3310-K9	Cisco 3310 Mobility Services Engine
AIR-MSE-3350-K9	Cisco 3350 Mobility Services Engine

For More Information

http://www.cisco.com/go/mse

Cisco Context-Aware Software

The Cisco Context-Aware Mobility Solution provides the ability to capture and integrate into business processes detailed contextual information about parameters such as location, temperature, and the availability of an asset. The integration of contextual information with business-process applications is fast becoming the next level of true enterprise mobility. With the Cisco Context-Aware Mobility Solution, mobile users can go beyond anytime, anywhere connectivity to automatically having the right device, the right application, and the right environment while on the go. They can now answer business-critical questions about both mobile assets and the users of those assets, to improve their organization's profitability.

Ideal for Companies That Need These Features

Cisco Context-Aware Software

- Advanced and scalable context-aware mobility service that simultaneously tracks thousands of Wi-Fi clients and Wi-Fi tags
- Context-aware information integrated into business processes (Cisco Context-Aware Software supports integration with customizable business applications through tight and transparent integration with the open API).
- Context-aware services are available in indoor, high-ceiling indoor, and outdoor environments.
- Integrated context-aware services using existing Cisco Unified wireless-enabled infrastructure, to minimize capital expenditures and help ensure better wireless LAN (WLAN) visibility

Key Features and Benefits

- Scalability—Cisco Context-Aware Software can track up to 18,000 assets simultaneously, including Wi-Fi clients and assets with Wi-Fi tags.
- Multiple context-aware engines—The modular design of the software allows for the use of the context-aware engine for clients and the context-aware engine for tags simultaneously or separately for the estimation of location.
- Multiple location technologies—Clients and tags can be tracked in indoor, indoor high-ceiling, and outdoor environments. Tracking is done using the Received Strength Signal Indicator (RSSI)-based RF fingerprinting technology for indoor environments and Time Difference of Arrival (TDOA) technology for outdoor and high-ceiling environments. The Cisco Context-Aware Mobility Service Module also supports the use of chokepoints for applications requiring high fidelity and deterministic context-aware information.
- Open platform for business applications—To facilitate the deployment of context-aware based applications in the enterprise, the context-aware mobility software allows for the integration of business applications through a rich and open Simple Object Access Protocol (SOAP)- or Extensible Markup Language (XML)-based application programming interface (API).
- Alerts and notifications—Alerts and notifications can be customized by the user based on business policy requirements.
- Deployment planning optimization—The process of planning and deployment of data, voice, and context-aware services is made simpler by the identification of coverage holes for the particular deployment scenario.
- Enhanced security—Detection of rogue access points and devices is made simpler by providing the location of these devices.
- Information-exchange configuration—Information-exchange configuration allows for control of which layer of information gets forwarded from the Cisco Unified Network controller to the Cisco Context-Aware Mobility Service Module. This control helps reduce the amount of contextual information gathered and transmitted across the network.
- Historical data—Historical data on the elements being tracked is collected and stored. This information can be used for drawing up trends and troubleshooting, among other uses.
- Scalable license management—The license management of the Cisco Context-Aware Software allows for flexibility in the type and quantity of licenses purchased to match the various scenarios. The licenses are additive (up to 2000 assets tracked on MSE 3310 and up to 18,000 assets tracked on MSE 3350) and thus provide for growth of the system.

Specifications

Feature	Cisco Context-Aware Software
Hardware requirements	Cisco Mobility Services Engine 3310 or Cisco Mobility Services Engine 3350
Number of Assets Tracked	Track up to 2000 Wi-Fi clients or Wi-Fi tags on MSE 3310 and up to 18,000 Wi-Fi clients or Wi-Fi tags on MSE 3350
Network Management	Cisco WCS v.5.1 or greater running Internet Explorer 6.0/Service Pack 1 or later
Programming Interfaces	SOAP/XML APIs
Database	Integrated Solid Flow Engine Structured Query Language (SQL)

Selected Part Numbers and Ordering Information

AIR-CAS-1KC-K9	Cisco Context-Aware Engine for Clients License for 1K Clients
AIR-CAS-3KC-K9	Cisco Context-Aware Engine for Clients License for 3K Clients
AIR-CAS-6KC-K9	Cisco Context-Aware Engine for Clients License for 6K Clients
AIR-CAS-12KC-K9	Cisco Context-Aware Engine for Clients License for 12K Clients
AIR-CAS-1KT-K9	Cisco Context-Aware Engine for Tags License for 1K Tags
AIR-CAS-3KT-K9	Cisco Context-Aware Engine for Tags License for 3K Tags
AIR-CAS-6KT-K9	Cisco Context-Aware Engine for Tags License for 6K Tags
AIR-CAS-12KT-K9	Cisco Context-Aware Engine for Tags License for 12K Tags
AIR-MSE-3310-K9	Cisco 3310 Mobility Services Engine
AIR-MSE-3350-K9	Cisco 3350 Mobility Services Engine

For More Information

Cisco Adaptive Wireless Intrusion Prevention System (IPS)

The Cisco Adaptive Wireless IPS solution protects against attacks and proactively prevents threats. It scales to meet the robust demands of even the largest networks, and delivers visibility and control across the network without the need for additional scanning equipment.

Ideal for Companies That Need These Features

Cisco Adaptive Wireless Intrusion Prevention System (IPS)	· A system to mitigate unauthorized wireless access and attacks against the wireless network and rogue access points · A system to assist with regulatory compliance, particularly Payment Card Industry (PCI) compliance · Integration with Cisco wired security infrastructure · Investment protection of existing Cisco Unified Wireless Network

Key Features and Benefits

- Detects, analyzes, and mitigates RF-based attacks using signature- and network-based methods for protection against known and unknown wireless threats
- Integrates into the Cisco Unified Wireless Network infrastructure using the same access points and wireless LAN controllers for simplified administration and lower capital expenditures and total cost of ownership
- Offers advanced reporting for increased regulatory compliance and forensic analysis
- Provides increased visibility and ease of administration through wired and wireless network security integration
- Uses the Cisco 3300 Series Mobility Services Engine for performance and centralized processing of wireless network threat analysis

Specifications

Feature	Cisco Adaptive Wireless IPS Software
Hardware requirements	Cisco Mobility Services Engine 3310
Number of Supported Monitor Mode APs	Support for up to 2000 monitor mode APs on MSE 3310 and support for up to 3000 monitor mode APs on MSE 3350
Management Interface	Cisco Wireless Control System version 5.2 or later

Selected Part Numbers and Ordering Information

AIR-WIPS-AP-25, 100, 500, 2000	License for Access Points (supports 25,100, 500, and 2000 APs)
AIR-MSE-3310-K9	Cisco 3310 Mobility Services Engine
AIR-MSE-3350-K9	Cisco 3350 Mobility Services Engine

Ordering Multiple Services on the Mobility Services Engine

The following are possible combinations when ordering multiple services (Context-Aware software licences and Adaptive Wireless Intrusion Prevention licences for Monitor Mode Access Points).

Context-Aware	18,000	17,000	16,000	15,000	14,000	13,000	12,000	11,000	10,000	9,000
WIPs	0	165	330	500	665	830	1,000	1,165	1,330	1,500

Context-Aware	8,000	7,000	6,000	5,000	4,000	3,000	2,000	1,000	0	
WIPs	1,665	1,830	2,000	2,165	2,330	2,500	2,665	2,830	3,000	

For More Information

Cisco Wireless Services

Services from Cisco and our partners help you plan, build, and run a network that enables you to expand geographically, embrace new business models, and promote business innovation. We can help you get the most from your infrastructure investment by creating a secure wired and wireless network platform that supports real-time mobile collaborative applications such as voice, video, and context aware. Through a discovery process, we work with you to understand your business, identify critical issues, and create new solutions to improve operations, increase productivity, and lower your total cost of ownership. Whether you are looking to transition to a Cisco Borderless Network Architecture or to solve a specific business problem, we have the services that can help you get the most from your IT environment.

For more information about Cisco Wireless LAN Services, visit http://www.cisco.com/go/wirelesslanservices.

Chapter 4: Collaboration

This chapter provides only a subset of Cisco products and part numbers.

Collaboration At-a-Glance

Product	Features	Page
CONFERENCING		
Cisco Unified MeetingPlace	· On-premises virtual meeting solution within Cisco Unified Communications that delivers integrated voice, video, and web conferencing and interfaces that make it simple to set up, attend, and manage meetings · Extends the value of Cisco WebEx Meeting Applications with on-premises voice, video, and web conferencing options that provide cost savings and added security	4–7
Cisco Unified Videoconferencing 3500 Series Products	· Provides a flexible, cost-effective video infrastructure for Cisco Unified Communications solutions. · Supports multiple standards, codecs, and protocols for broad connectivity with room-based and desktop video, including standard-definition and high-definition endpoints · Facilitates voice and video interoperability for Cisco TelePresence solutions · Includes Software Application Support and Software Applications Support with Upgrades (SAS/SASU)	4–7
Cisco Unified Video Advantage ***NEW UPDATES***	· Provides video telephony functionality to Cisco Unified IP phones (these include select models from the 6900 Series, 7900 Series, and the Cisco IP Communicator softphone application) · Compatible with Cisco VT Camera III or other third-party USB cameras · Cisco SMARTnet services available	4–8
Cisco WebEx Meeting Center ***NEW UPDATES***	· Allows business professionals to easily and reliably meet online to present information, share applications, and collaborate on projects with customers and coworkers worldwide	4–9
Cisco WebEx Training Center ***NEW UPDATES***	· Online classroom solution used to deliver engaging, effective, and interactive instructor-led training to employees, customers, and partners	4–9
Cisco WebEx Event Center ***NEW UPDATES***	· Allows you to stage large-scale online events and web seminars to generate leads and train employees, customers, and partners	4–10
Cisco WebEx Advanced Services	Cisco WebEx Advanced Services can help customers reach and exceed their collaboration goals with a wide range of services that can be tailored to their organization. Online collaboration experts assess organizational requirements and develop a plan to reach key goals. Key service portfolio offers are: Collaboration Services, Event Solutions, and Learning Services.	4–11
Cisco WebEx Support Center ***NEW UPDATES***	· Enables you to provide instant, personalized customer or IT support worldwide by allowing support staff to diagnose and fix problems in real-time, remotely, from their PCs	4–11
CUSTOMER CARE		
Cisco Unified Contact Center Enterprise ***NEW UPDATES***	· Delivers multisite, intelligent contact routing, network-to-desktop computer telephony integration (CTI), and multichannel contact management to contact center agents over an all-IP infrastructure or mixed IP and time-division multiplexing (TDM) infrastructure · Solution can also be deployed with third-party automatic call distributors (ACDs) · Supports a variety of deployment models from premise-based to hosted installations. Essential Operate Service (ESW) required for most features	4–11
Cisco Unified Contact Center Express ***NEW UPDATES***	· Software-based automatic call distributor (ACD), IVR, and CTI application is designed for small-to-medium-sized companies, enterprise branches, or corporate departments with Cisco IP Telephony networks · Solution supports up to 300 agents and is available in three versions: Standard, Enhanced, and Premium, to better match product functions with your customer contact interaction management requirements · Essential Operate Service (ESW) required for agents only	4–12
Cisco Unified Expert Advisor	· Expands the scope of the contact center by allowing enterprise knowledge workers to handle incoming customer calls without the need for the rigid tools and business rules typically found in formal contact centers · Solution allows subject matter experts across the enterprise to assist with customer care, with or without a formal contact center · Essential Operate Service (ESW) strongly recommended	4–13

Cisco Unified Intelligence Center ***NEW UPDATES***	· Offers customers a powerful web-based reporting platform that is as flexible as it is intuitive · Customers can report on the details of every contact across all channels from a single interface, regardless of the resources involved · Essential Operate Service (ESW) required for most features	4–14
Cisco and salesforce.com Customer Interaction Cloud	· Multichannel contact center solution that allows customers to use the salesforce.com Service Cloud as their primary agent desktop while having full Cisco Unified Contact Center capabilities and salesforce.com CRM capabilities to operate a customer care or support center in any industry from North America · Designed specifically for small and midsize businesses, supporting 30 to 300 agents or knowledge workers, this joint solution follows a cloud-computing or software-as-a-service (SaaS) model, resulting in faster deployment times, no capital investments, and higher agent productivity	4–14
Cisco Unified Customer Voice Portal ***NEW UPDATES***	· Award-winning product that provides IP-based self-service and call routing. It combines open-standards support for speech with intelligent application development and industry-best call control to deliver personalized self-service to callers, either as a standalone interactive-voice-response (IVR) system or transparently integrated with a contact center · The solution offers a prompt collect, queuing, and call-control service using standard IP technologies, and provides sophisticated speech-enabled voice self-service with the ability to quickly and easily escalate to agent-assisted service if necessary · Essential Operate Service (ESW) strongly recommended	4–15
ENTERPRISE SOCIAL SOFTWARE		
Cisco Show and Share ***NEW PRODUCT***	· Integrated component of the Cisco Digital Media Suite for webcasting and video sharing that provides the ability to create live and on-demand video content and define who can watch specific content · Offers viewer collaboration tools such as commenting, rating, and word tagging, and provides comprehensive access reporting	See 7–8
Cisco Prosumer Video ***NEW PRODUCT***	· Combines a video-capture device with the Cisco FocalPoint online video workspace for the enterprise · Retains the ease of use of the consumer Cisco Flip Video camcorder while adding additional memory for longer recording time, as well as a web-based cloud service for easy sharing and collaboration	4–16
Cisco Flip MiniPRO ***NEW PRODUCT***	· First in a series of the enterprise-class Cisco Prosumer Video solution camcorder products, enhances business process and improves collaboration by allowing the capture of video content for secure editing and sharing	4–16
Cisco FocalPoint ***NEW PRODUCT***	· Online video workspace for uploading, organizing, and sharing video · Makes it easy to share videos, edit individual clips, and create custom movies securely within your organization	4–17
Cisco Pulse ***NEW PRODUCT***	· Automatically discovers pertinent work experience and valuable content spread across the enterprise and integrates seamlessly with all communications and conferencing tools · Built as an open platform, but tightly integrated with Cisco's technology architectures, Cisco Pulse delivers rich team and customer experiences in a click, allowing workforces to be more competitive, responsive, and productive	See 7–16
IP COMMUNICATIONS		
Cisco Unified Communications Manager ***NEW UPDATES***	· Server-based call-processing and call-control component of the Cisco Unified Communications Solution, offering a suite of integrated voice applications and utilities · Available as an appliance, it is accessible through a GUI and a command-line interface · Essential Operate Service (ESW) are required based on server platform	4–18
Cisco Unified Communications Manager Assistant	· Component of the Cisco Unified Communications Manager, this PC and phone application provides productivity tools that enhance communications between manager and administrative assistant · No separate services required	4–20
Cisco Unified Communications Manager Express ***NEW UPDATES***	· Cisco IOS Software-based call control supported on first and second generation Cisco Integrated Services Routers and Cisco Unified Communications 500 Series for Small Business appliance · Included in the Cisco SMARTnet services when originally purchased router or Cisco Unified Communications 500 Series for Small Business	4–20
Cisco Unified Communications Manager Business Edition ***NEW UPDATES***	· Designed for medium-sized businesses with up to 500 employees and up to 20 sites (19 remote sites) · Single server solution combines Cisco Unified Communications Manager media processing and Cisco Unity Connection integrated voice-messaging capabilities · Essential Operate Service (ESW) that covers the MCS server hardware replacement and software support are required	4–21
Cisco Unified Communications Manager Session Management Edition ***NEW PRODUCT***	· Provides centralized trunking, application and private-branch-exchange (PBX) aggregation, and policy control · Reduces communication tolls, cuts administrative overhead, and supports easier migration to a full IP telephony environment	4–22

Cisco IP Communicator ***NEW UPDATES***	· Software application that acts as an IP end-point to deliver voice and video calling through a Windows PC, enabling remote users to take their office extension with them · Essential Operate Service (ESW) required for User License	4–23
Cisco Unified IP Phones 6900 Series ***NEW UPDATES***	· Affordable portfolio of endpoints that support business-grade voice and video communications to branch, midmarket, and enterprise customers in a user- and eco-friendly design · Includes a range of offerings spanning occasional use settings, such as lobbies, to highly active communications environments, such as for managers and administrative staff · Cisco SMARTnet services available	4–24
Cisco Unified IP Phones 7900 Series	· Diverse endpoint portfolio for advanced business communications offering support for voice, video and data communications · Meets a wide range of customer needs from the lobby to the conference room to the executive office and everywhere in between · Offers a choice of wired, wireless LAN and specialty endpoint solutions · Cisco SMARTnet services available	4–26
Cisco Unified IP Phones 8900 Series ***NEW PRODUCT***	· Portfolio of advanced professional multimedia endpoints designed to elevate business performance with increased productivity by delivering a robust suite of Unified Communications and multimedia applications in a design that is elegant, easy-to-use and eco-friendly · Cisco SMARTnet services available	4–28
Cisco Unified IP Phones 9900 Series ***NEW PRODUCT***	· Portfolio of advanced collaborative multimedia endpoints, with support for the most comprehensive suite of Unified Communications services and multimedia applications, including video communications as simple as a telephone call made directly from the IP phone, in a design that is intuitive, clutter-free and earth-friendly · Cisco SMARTnet services available	4–29
Cisco SPA 500 Series IP Phones ***NEW PRODUCT***	· For small businesses with robust features that support the Cisco Unified Communications 500 Series, Cisco SPA9000 Voice System, and hosted IP telephony.	4–31
Cisco Unified Attendant Console Portfolio ***NEW UPDATES***	· Comprises three full-featured software-based attendant console solutions designed specifically for use with Cisco Unified Communications Manager · Includes Cisco Unified Department Attendant Console for departmental use, Cisco Unified Business Attendant Console for small- to medium-sized businesses, and the Cisco Unified Enterprise Attendant Console for the larger enterprise customer · Essential Operate Service (ESW) required for software	4–31
Cisco Emergency Responder	· Works with Cisco Unified Communications Manager to automatically provide E9-1-1 features in North America; intra-enterprise features are also compatible with any internal or external emergency number · Essential Operate Service (ESW) for the software license and per seat	4–33
Cisco Intercompany Media Engine ***NEW PRODUCT***	· Enables true boundary-less communications among organizations, including business partners and customers · Makes communications among separate companies and organizations as effortless and transparent as it is within an individual company · Included with Cisco Unified Communications Manager 8.0 and Cisco Unified Communications Manager Session Management Edition 8.0	4–34
Cisco Unified Survivable Remote Site Telephony (SRST) ***NEW UPDATES***	· Cisco IOS software-based feature set that provides key backup telephony functions for the remote branch office if connectivity to the centrally-located Cisco Unified Communications Manager or Cisco Unified Communications Manager Business Edition fails (that is, a WAN link is interrupted) · During a WAN outage, the Cisco Unified SRST-enabled router provides robust telephony services (including off-net calls to 911)	4–34
Cisco Unified Communications Services	Services, delivered by Cisco and our partners, help organizations deploy a secure, resilient Cisco Unified Communications solution, enabling powerful ways to collaborate with coworkers, partners, and customers across any workspace.	4–35
MESSAGING		
Cisco WebEx Connect	· Enterprise-class, on-demand unified communications client that delivers instant messaging, rich presence, audio, video, and integrated web conferencing and soft phone capabilities to streamline communications and enhance productivity	4–35
Cisco WebEx Mail ***NEW PRODUCT***	· Enterprise-ready hosted e-mail service · Offers native Microsoft Outlook compatibility, advanced webmail, high availability for all users, 5 or 35 GB mailbox size, full BlackBerry and Microsoft ActiveSync support, messaging security powered by Cisco IronPort, and next-generation collaboration capabilities	4–36
Cisco Unified Personal Communicator	· Integrates frequently used communications applications and services into a single, unified client · From an easy-to-use interface on a PC or Mac, it provides quick and easy access to powerful communications tools—softphone, presence, instant messaging, visual voicemail, click to call, employee directory, communication history, high-definition video, and web conferencing—to help you communicate effectively and work more productively	4–37

Cisco Unified Presence	· Standards-based platform collects information from multiple sources about user availability and communications capabilities to provide rich presence status and facilitate presence-enabled communications with Cisco Unified Communications and other critical business applications · Enables sharing of presence and IM with Cisco Unified Personal Communicator · Supports the ability to view phone presence from Cisco Unified Personal Communicator, IBM Lotus Sametime, or Microsoft Office Communicator · Facilitates the ability to expose presence in corporate web directories, point-of-sale applications, or customer relationship management systems through standards-based application programming interfaces (APIs) · Provides the ability for subject matter experts anywhere in your enterprise to handle incoming customer calls with Cisco Unified Expert Advisor and Cisco Unified Personal Communicator · Essential Operate Service (ESW) required for most features	4–37
Cisco Unity Connection ***NEW UPDATES***	· Enterprise-class voice and integrated messaging solution that adds speech recognition and call routing rules on a Linux appliance · Essential Operate Service (ESW) required for Voice Mail Boxes	4–38
Speech Connect for Cisco Unity Connection ***NEW PRODUCT***	· Internal or external callers can say the name of an employee into the phone and instantly be connected · New feature included with Cisco Unity Connection	4–39
Cisco SpeechView ***NEW PRODUCT***	· Converts voice messages to text and delivers them to you via e-mail, allowing you to read your voice messages and take immediate action · New feature for Cisco Unity Connection	4–39
Cisco Unity Express ***NEW UPDATES***	· Integrated voice mail, automated attendant, IVR, and time card services locally delivered for small businesses or branch offices · Takes advantage of the data infrastructure; supported on a broad range of Cisco Integrated Services Routers · Cisco SMARTnet services available	4–39
Cisco Unified Survivable Remote Site Voicemail ***NEW PRODUCT***	· Cost-effective solution for supporting survivable voicemail service for your organization's remote sites, such as branch offices or small sites · Centralized configuration and management for CUCM/Unity Connection-based deployments	4–40
Cisco Unified Messaging Gateway ***NEW UPDATES***	· Open and secure method of intelligently routing messages and exchanging subscriber and directory information within a unified messaging network · Acts as the central hub in a network of voice and unified messaging solutions · Includes Software Application Support and Software Applications Support with Upgrades (SAS/SASU)	4–41
Cisco Unity Unified Messaging ***NEW UPDATES***	· Unified messaging system that delivers voice, e-mail, and fax messages into single inbox for access through phone, e-mail, and many other clients and devices · Essential Operate Service (ESW) required for Voice Mail Boxes (VM or UM)	4–41
Speech Connect for Cisco Unity ***NEW PRODUCT***	· Internal or external callers can say the name of an employee into the phone and instantly be connected · For use with Cisco Unity unified messaging systems	4–41
Cisco WebEx Advanced Services	Cisco WebEx Advanced Services can help customers reach and exceed their collaboration goals with a wide range of services that can be tailored to their organization. Online collaboration experts assess organizational requirements and develop a plan to reach key goals. Key service portfolio offers are: Collaboration Services, Event Solutions, and Learning Services.	4–11
MOBILE APPLICATIONS		
Cisco Unified Mobile Communicator ***NEW UPDATES***	· Enables collaboration by securely extending Cisco Unified Communications to your mobile smartphone · Provides real-time access to company directory, presence, visual voice mail, integrated call history, and conference notifications and other vital information; so you always have the information you need at your fingertips when you are on the go · Essential Operate Service (ESW) required for most features	4–42
Cisco Unified Mobility	· Mobility application, native to Cisco Unified Communications Manager, which extends call control capabilities to mobile devices · Redirects of incoming calls to up to four different phones simultaneously (single number reach/single business voicemail) and enables the transition of calls between Cisco Unified IP Phones and mobile devices	4–42
Nokia Call Connect for Cisco	· Enables Nokia business-class dual-mode handsets to operate on cellular Global System for Mobile Communications (GSM) and Cisco Unified Wireless Networks (VoWLAN/802.11 b/g) with access to the advanced features provided by Cisco Unified Communications Manager and Cisco Unified Communications Manager Express.	4–43
Cisco WebEx Meeting Center on Smartphone Browsers	· Using the mobile browser on a smartphones, users can attend Cisco WebEx Meeting Center meetings, view presentations applications and desktops with live annotations · No download required	4–43

Cisco WebEx Meeting Center on Mobile Devices	· Free downloadable Cisco WebEx Meeting Center application for Apple iPhone and iPad from the Apple App Store and for RIM BlackBerry smartphones from the BlackBerry App World · Join WebEx meetings from your mobile device to view shared presentations, applications, and desktop, view attendee list and chat with attendees · On the iPhone, users can also schedule WebEx meetings, invited attendees, and transfer a live meeting from the iPhone to a PC	4–43
Cisco Mobile Supervisor	· Free application available from Apple Inc's App Store · Extension to the Cisco Supervisor Desktop (CSD) on a mobile device · Extension to your Cisco Unified Contact Center Express (Unified CCX) product, contact center supervisors can receive real-time performance metrics on their iPhone3G and iPod touch devices	4–43
TELEPRESENCE		
Cisco TelePresence System	· Integrates advanced audio, high-definition video, and interactive elements with the power of the underlying network to deliver an immersive in-person experience · Supports life-like images with ultra high-definition video and spatial audio · Integrates cameras, a lighting array, microphones, and speakers, all tuned to optimize the experience · Integration with enterprise groupware, such as Microsoft Exchange and Lotus Notes, makes it easy to schedule and launch calls · Solution offers scalable, no-latency multipoint meetings for up to 48 sites, interoperability with video conferencing, and secure and scalable intercompany calling · Specialized applications such as Cisco TelePresence Expert on Demand and Cisco TelePresence Recording Studio take Cisco TelePresence beyond business meetings for new face-to-face interactions and transactions · Operates on an integrated voice, video, and data network with intelligent architecture capabilities for ensuring reliability, quality of service (QoS), and security	4–44
Cisco TelePresence System 3210 ***NEW PRODUCT***	· Enables organizations to host up to 18 meeting participants in a single large room	4–44
Cisco TelePresence System 3010 ***NEW PRODUCT***	· Ideal endpoint for group meetings, creating an environment for six people to sit around the "virtual table" in a single location	4–46
Cisco TelePresence System 1300	· Single-screen system designed for the general-purpose room · With streamlined industrial design and three cameras, it can support up to six people without requiring a dedicated conference room · Endpoint also features integrated audio conferencing capabilities and innovations that reduce bandwidth requirements	4–48
Cisco TelePresence System 1100 ***NEW PRODUCT***	· Ideal for small group or one-on-one meetings around the "virtual table"	4–49
Cisco TelePresence System 500	· Smaller footprint of the Cisco TelePresence System 500 gives organizations the flexibility to deploy Cisco TelePresence within personal offices to support one-on-one meetings, or to join large, multipoint Cisco TelePresence calls	4–50
Cisco TelePresence Commercial Express ***NEW PRODUCT***	· Combines core infrastructure components for management, multipoint switching, and recording into one server using VMware	4–52
Cisco TelePresence Manager	· Makes it easy for you to schedule and manage Cisco TelePresence calls	4–52
Cisco TelePresence Multipoint Switch	· Easily and reliably include three or more locations in a single meeting, with support for up to 48 locations	4–52
Cisco TelePresence Recording Server	· Transforms the Cisco TelePresence system into a high-definition recording studio	4–54

Tandberg Telepresence and Video Conferencing Products
TANDBERG products are now part of the Cisco TelePresence portfolio; however, they will not be orderable through Cisco until 2011. For more information, visit http://www.tandberg.com/video-conferencing-telepresence-products.jsp.

Cisco TelePresence Services	Cisco and our partners provide a broad portfolio of intelligent, personalized services to help you assess network readiness, realize the full value of your Cisco TelePresence investment, and increase business agility and network availability.	4–55
INFRASTRUCTURE AND OTHER		
Cisco Unified Application Environment	· Offers a rich portfolio of applications and development tools that extend the Cisco Unified Communications platform · Broad support for development tools, including Eclipse and Microsoft Visual Studio; allows unified communication and network services to be quickly and easily integrated into business applications or to develop entirely new applications	4–55

Cisco UC Integration for Microsoft Office Communicator	· Instantly access enhanced Cisco Unified Communications directly from Microsoft Office Communicator 2007 on your PC · Easy-to-deploy desktop integration, extend proven Cisco unified communications services to your workspace and benefit from the investment protection and reduced complexity delivered by a single call control solution	4–56
Cisco Unified Communications 500 Series ***NEW PRODUCT***	· Affordable unified communications appliance for Small Businesses that provides voice, data, voicemail, automated attendant, video, security, and wireless capabilities while integrating with existing desktop applications such as calendar, email, and CRM programs · Cisco SMARTnet services available	4–56
Cisco Unified Communications on the Cisco Unified Computing System ***NEW PRODUCT***	· Composed of Cisco Unified Communications applications running in a virtualized environment, consisting of VMware software, Cisco Unified Computing System servers, and Fibre Channel SAN storage	4–58
Cisco Unified Border Element	· Cisco IOS-based service that provides scalable enterprise session border controller features for 4–15,000 sessions, allowing interconnection of H.323 and SIP applications within the enterprise and for the enterprise to connect to service provider SIP trunks for PSTN access · Provides video and TelePresence interconnects · Cisco SMARTnet services available	4–58
Cisco Voice Gateways ***NEW UPDATES***	· Dedicated Cisco VG202, VG204, VG224, VG248, and 112-FXS Bundle Analog Voice Gateways provide connectivity between IP networks and traditional telephones · Cisco SMARTnet services available	4–59
Cisco AS5350XM Universal Gateway	· High performance, 1RU universal gateway offering best in class voice, fax, remote access and session border control services · Cisco SMARTnet services available	4–60
Cisco AS5400XM Universal Gateway	· High performance, 2RU universal gateway offering best in class voice, fax, remote access and session border control services · Cisco SMARTnet services available	4–62
Cisco ATA 187 Analog Telephone Adaptor ***NEW UPDATES***	· Turns any analog telephone into an IP telephone. Each of the two voice ports supports independent telephone numbers, providing two separate lines · Cisco SMARTnet services available	4–64

Cisco Media Express Engine
For product information, please refer to Chapter 7, "Video and Broadband Cable".

Cisco Integrated Services Routers—Generation 1 and 2
For product information, please refer to Chapter 1, "Routing".

Cisco Unified Workspace Licensing ***NEW UPDATES***	· Allows organizations to cost-effectively access a wide range of Cisco Collaboration applications and services in a cost-effective, simple package · Includes client and server software, licensing, service and support, and software subscription on a per-user basis	4–64
Cisco Unified Communications Software Subscription ***NEW UPDATES***	· Increases business value by providing an economical and timely approach to upgrading to new Cisco technology · Offers major software releases at no additional charge for the duration of the activated subscription term, which can be for 1, 2, 3, or 5 years	4–66

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Conferencing

Cisco Unified MeetingPlace

Cisco Unified MeetingPlace conferencing is an on-premises virtual meeting solution within Cisco Unified Communications. It delivers an exceptional user experience with integrated voice, video, and web conferencing and interfaces that make it simple to set up, attend, and manage meetings. Cisco Unified MeetingPlace conferencing extends the value of Cisco WebEx meeting applications with on-premises voice, video, and web conferencing options that provide cost savings and added security.

Key Features and Benefits

- Cost savings—Cisco Unified MeetingPlace conferencing is deployed on-premises on an organization's converged IP network, a scenario that can reduce costs by virtually eliminating conferencing telephony and service fees paid to service providers.
- Deployment flexibility—On-premises voice conferencing for Cisco WebEx meeting applications. You can deploy the Cisco Unified MeetingPlace solution as a complete on-premises voice, video, and web conferencing solution or integrate it with Cisco WebEx web conferencing services. These solutions together combine the cost savings advantages of on-premises voice conferencing with the productivity benefits of on-demand web conferencing. The Cisco WebEx Node for MCS is a software component that is deployed with Cisco Unified MeetingPlace 8.0 to provide on-premises data options and improved performance for Cisco WebEx meetings.
- Simple rich-media conference setup, attendance, and management—Cisco Unified MeetingPlace conferencing is integrated with multiple applications and devices to enable you to better integrate conferencing into your business processes. Intuitive interfaces make setting up, attending, and managing meetings easy. Industry-standard protocols are supported to enable meeting attendance from virtually any phone and video application or endpoint.
- Security:
  - The solution offers a dedicated on-network system; each customer is provided with a dedicated Cisco Unified MeetingPlace solution integrated with the private network.
  - The solution offers Internet lockout controls; meetings can be set up as internal-only meetings and held entirely behind the corporate firewall, or as external meetings that are accessible to Internet and internal participants. Administrators and meeting organizers have complete control.
  - The solution offers access authentication, encryption, and in-session meeting controls.

For More Information

http://www.cisco.com/go/meetingplace

Cisco Unified Videoconferencing 3500 Series

Cisco Unified Videoconferencing is a video infrastructure solution for Cisco Unified Communications. The solution allows participants to collaborate effectively and share information in real time to help organizations eliminate the barriers of time, distance, and resources and permit people around the world to function as if they were in the same room. The solution supports multiple protocols to facilitate connectivity with a wide variety of video-enabled devices from desktop video telephony to standard-definition and high-definition room systems, WebEx Meeting Center, and Cisco TelePresence systems.

Key Features and Benefits

- Multiprotocol support–broad video interoperability—The Cisco Unified Videoconferencing 3500 Series supports multiple standards, codecs, and protocols, including H.323, Session Initiation Protocol (SIP), Skinny Client Control Protocol (SCCP), and H.320, to help ensure broad connectivity with traditional and emerging video environments, including traditional room and desktop video conferencing systems, newer high-definition (HD) video solutions, Cisco TelePresence solutions, and Cisco Unified Communications Manager video telephony environments.
- High-performance, flexible solution—The Cisco Unified Videoconferencing 3500 Series offers an optimized experience for everyone. Its powerful hardware design has flexible processing capabilities to provide an exceptional user experience that is also scalable and cost-effective.
- High-definition (HD) conferencing—The Cisco Unified Videoconferencing 3545 System fully supports standards-based HD video conferencing endpoints.
- High-quality standard-definition video conferencing—Because every port has dedicated audio and video encoders, standard-definition (SD) endpoints can connect to any conference, at any supported bit rate, with any supported audio or video codec, at any supported SD resolution, and with any screen layout.
- High-capacity standard-definition video conferencing—The Cisco Unified Videoconferencing 3545 System has the flexibility to distribute processing resources that are not being fully used by personal or desktop video conferencing endpoints.
- Cisco Unified Videoconferencing desktop video has been integrated with Cisco WebEx™ Meeting Center to provide more advanced video capabilities for WebEx® meetings.
- The solution enhances the collaboration capabilities of Microsoft Office Communications (MOC) and Sametime by adding embedded, multiparty video. MOC and Sametime users can now initiate impromptu video communications with other MOC and Sametime users or with any video solution that can connect to Cisco Unified Videoconferencing.

- The Cisco Unified Videoconferencing ISDN Gateway Modules allow ISDN H.320 endpoints to participate in the same conferences as IP-based H.323, Skinny Client Control Protocol (SCCP), or Session Initiation Protocol (SIP) endpoints.
- Advanced solution management, desktop video, and streaming media–Cisco Unified Videoconferencing Manager—Cisco Unified Videoconferencing Systems can be managed as standalone devices or with the Cisco Unified Videoconferencing Manager, which helps organizations of all sizes use their video conferencing resources more effectively.

Specifications

Feature	Cisco Unified Videoconferencing 3500 Series
Video Capabilities	Video codecs—H.261, H.263, and H.264; Live video resolutions—Quarter Common Intermediate Format (QCIF), Common Intermediate Format (CIF), Standard Input Format (SIF), 4CIF, 1280 x 720p, and 1920 x 1080p (switched HD service only); Presentation video resolutions—Video Graphics Array (VGA), Super Video Graphics Array (SVGA), and Extended Graphics Array (XGA); Video bandwidth—Up to 2 Mbps per port; Full transcoding and transrating for all SD (up to and including 4CIF) video codecs and speeds on all ports; All-continuous-presence layout options support both SD and HD participants (for HD service); 4CIF resolution on all ports for all layout combinations; H.264 codec on all ports for all layout combinations; QualiVision for highly improved, standards-based video quality in networks with packet loss; supports both SD and HD connections; QoS support with Differentiated Services (DiffServ), type of service (ToS), and IP Precedence; Per-user (rather than per-conference) video processing, allowing unique and optimal video settings for each user
Audio Capabilities	SD audio codecs—G.711, G.722, G.722.1, G.723.1, G.728, and G.729A; DTMF tone detection (in-band, H.245 tones, and RFC 2833); Entry and exit sounds played when conference participants join or leave a conference; Ability to record and upload custom messages; Full transcoding and mixing on all audio ports
Signaling Protocols	H.323; SCCP; SIP; H.320 with gateway modules
Security	H.235 Advanced Encryption Standard (AES) and Data Encryption Standard (DES) encryption on both SD and HD connections, up to 128-bit keys, for secure audiovisual conferencing; Password-protected web GUI user access with multiple levels; administrator, operator, and user; Strong password enforcement; HTTPS and Secure Sockets Layer (SSL); PIN-protected conferences to help ensure privacy; Security warning page option; Serial port disable and enable; Session inactivity time-out and user lockout (manual and auto) capabilities; Security event logging

Feature	Cisco Unified Videoconferencing 3545 System
LAN Interface	One 10/100 Ethernet port, IEEE 802.3, 8-pin RJ-45 on each console
Serial Port	EIA-232, 9-pin D-type
Dimensions	3.50 x 17.25 x 10.0 in. (8.89 x 438.15 x 25.4 cm)
Weight	17.6 lb (8 kg) for empty chassis (with two power supplies)
Power	100-240 VAC autosense, 50–60 Hz, 202W maximum; Dual redundant power supplies; U.S. power cable included; Other power cables available
Environment	Operating temperature—32 to 122°F (0 to 50°C); Storage temperature—13 to 158°F (25 to 70°C); Humidity to 5 to 90% noncondensing

For More Information

http://www.cisco.com/go/ipvc

Cisco Unified Video Advantage

Cisco Unified Video Advantage (formerly Cisco VT Advantage) adds video to your communications experience by providing video telephony functions to Cisco Unified IP Phones (select Cisco Unified IP Phones 6900 Series and 7900 Series and Cisco IP Communicator softphone application). With Cisco Unified Video Advantage, video telephony is now just a phone call.

This solution comprises Cisco Unified Video Advantage software and Cisco VT Camera III, a video telephony USB camera. With Cisco Unified Video Advantage, you can use the familiar phone interface to make and receive video calls on your Cisco Unified IP Phone with the video component displayed on your PC. Enterprise organizations can take advantage of their existing IP networks to extend video to everyone in their organization.

Ideal for Companies That Need These Features

Cisco Unified Video Advantage	- Desktop video calling
- High-quality video with rich telephony features on their Windows PC
- Transparent integration with desktop IP phone or Cisco IP Communicator for familiar phone interface

Key Features and Benefits

- Consistent voice and video user experience: Cisco Unified Video Advantage offers easy, low-cost, high-quality video calling. Familiar call features such as call forward, transfer, conference, hold, and mute are initiated through the phone, and available video is viewed through the PC.
- Easy to manage: Unified administration is possible with Cisco Unified IP Phones and automatic software upgrades.

Selected Part Numbers and Ordering Information

CUVA-V3=	Cisco Unified Video Advantage and VT Camera III
CUVA-V3-24BUN=	Cisco Unified Video Advantage and VT Camera III 24-Unit Pack
CUVA-SW-2.X	Cisco Unified Video Advantage 2.x Software Only
CUVA-SW-LIC	Cisco Unified Video Advantage User License
CUVA-SW-2.X-10=	Cisco Unified Video Advantage 2.X SW 10 User License

For More Information

http://www.cisco.com/go/cuva

Cisco WebEx Meeting Center

Cisco WebEx Meeting Center allows business professionals to meet online to present information, share applications, and collaborate on projects with customers, partners, and colleagues, worldwide, just as if you were face-to-face. Schedule meetings in advance or start an instant online meeting and invite people to join you by e-mail or IM. Cisco WebEx Meeting Center enables companies to extend their business models over the web in a high-touch yet low-cost manner.

Ideal for Companies That Need These Features

Cisco WebEx Meeting Center	
Cisco WebEx Meeting Center	• Ability to meet with remote colleagues, customers, and partners online to share presentations and collaborate • Software as a Service (SaaS) delivery model that allows them to deploy a web conferencing solution over the web, eliminating the need for hardware and resources to maintain the infrastructure • A secure and reliable method to collaborate both inside and outside the firewall

Key Features and Benefits

- Integrated live audio, video, and data—Easily create dynamic and persuasive multimedia presentations that combine live audio, video, and data. Use powerful presentation techniques such as animations and Macromedia Flash to deliver the true presentation experience.
- Powerful presentation and annotation tools—Presenters and participants can show documents, applications, or their desktop in real time. Control can be passed to attendees so that they can share their desktops or annotate yours.
- Join WebEx meetings on your smartphones including iPhone, BlackBerry, Nokia, and more.
- Desktop integration—Initiate meetings instantly from Microsoft Office, Microsoft Outlook, Lotus Notes, and a variety of instant messaging solutions, including Cisco WebEx Connect.
- Enterprise integration—Use single sign-on to access WebEx Meeting Center and other enterprise applications integrated with WebEx.
- Cisco WebEx Network-Based Recording (NBR)—Record meetings for future reference, training or demos.
- Cross-platform support—Meet with anyone using WebEx, on all common operating system platforms: Windows, Mac, Linux, and UNIX.
- Enterprise policy management—Cisco WebEx Site Administration allows IT to enforce security policy at all levels: enterprise, group or individual.
- Meeting platform you can trust—Cisco WebEx meeting applications run on the Cisco WebEx Collaboration Cloud, a real-time, global network that gives you the fast, reliable, highly secure performance you need.
- Integrates with existing Cisco investments—Cisco Unified MeetingPlace, Cisco Unified Video Conferencing, Cisco TelePresence, Cisco WebEx Node for the ASR 1000, Cisco WebEx Node for MCS

For More Information

http://www.cisco.com/en/US/products/ps10409/index.html

Cisco WebEx Training Center

Cisco WebEx Training Center is a hosted online training solution that enables you to deliver dynamic, interactive learning to anyone who has web access and a browser. Designed to provide instructors with flexible, easy-to-use tools that encourage interactions and engage learners, Cisco WebEx Training Center is the leading virtual classroom solution on the market. With this application, you can significantly decrease the cost of delivering live training, reach your learners more often, and reduce the time your learners spend away from their jobs and their customers.

Ideal for Companies That Need These Features

Cisco WebEx Training Center
- Online classroom for interactive learning
- Comprehensive online learning management with registrations, testing, hands-on labs, and breakout rooms
- Software-as-a-service (SaaS) delivery model that allows them to deploy a web conferencing solution over the web, eliminating the need for hardware and resources to maintain the infrastructure
- Secure and reliable method to conduct events both inside and outside the firewall

Key Features and Benefits

- Keep learners engaged and involved with Quick Response tools that make it easy for instructors and learners to communicate. These tools allow students to interact with instructors and other students with the click of an icon.
- Promote collaborative learning with virtual breakout sessions that allow students to break into small groups to work on projects, role-play, or develop case studies. Instructors can roam from group to group to provide guidance and support.
- Provide remote learners with hands-on access to software training with Cisco WebEx Hands-On Labs. Accelerate the roll-out of software applications by providing students with access to remote lab computers for hands-on training through the Internet.
- Assess the understanding and ability of your learners to apply your training with the integrated Cisco WebEx Testing Engine. Deliver tests before, after, or during live training sessions, and integrate with LMS systems.
- Take full advantage of Cisco WebEx Integrated Audio to simplify the scheduling and management of audio sessions for your live online training programs. Innovative features such as Active Talker allow instructors and students to see who is speaking, promoting personal interactions and enabling instructors to "spot" audio distractions (hold music) and mute the line to minimize interruptions.
- Deliver live interactive training to learners regardless of their computing platform, with multiplatform support for Windows, Mac, Linux, and UNIX.

For More Information

http://www.cisco.com/en/US/products/ps10410/index.html

Cisco WebEx Event Center

Cisco WebEx Event Center is an online event-management application for staging large-scale online events and web seminars. Cisco WebEx Event Center allows you to manage the entire online event lifecycle from planning, promoting, and presenting to follow-up and analysis. Whether you need to increase your lead numbers, launch a new product, or hold all-hands company meetings, Cisco WebEx Event Center can help you cost-effectively target the right people—worldwide.

Ideal for Companies That Need These Features

Cisco WebEx Event Center
- Ability to deliver marketing events and corporate events to a large audience over the web
- Comprehensive online event management with registrations, promotions, and follow-ups
- Robust online event session features for high-quality, professional event production
- Software-as-a-service (SaaS) delivery model that allows them to deploy web-based event management over the web, eliminating the need for hardware and resources to maintain the infrastructure
- Secure and reliable method to conduct events both inside and outside the firewall

Key Features and Benefits

- Sophisticated event management features—From customizable HTML templates and event registration forms to automated lead management and lead scoring, Cisco WebEx Event Center has the features you need for a successful webcast that delivers the results you want, and allows you to integrate to your CRM application, such as Salesforce.com.
- Higher return on investment (ROI)—Extend the life of your events with Cisco WebEx Network Based Recording (NBR). With a simple click, you can record all your events, which are then available for replay. Choose from multiple options such as requiring registration or destination URL, or even posting surveys.
- Webcast platform you can trust—When the technology fails there is no makeup session. Rest assured; all Cisco WebEx events run on Cisco WebEx Collaboration Cloud, ensuring security, reliability, and performance.
- Audio broadcast—Cisco WebEx Event Center offers multiple audio options to meet your event needs and budget. Audio broadcast allows presenters to deliver over a regular telephone while the event participants listen through their computers.
- Multiplatform—Let your prospects join your event on the platform of their choice: Windows, Mac, Linux, or UNIX.

For More Information

http://www.cisco.com/en/US/products/ps10411/index.html

Cisco WebEx Advanced Services

Customers get more from their WebEx Investment with help from WebEx Advanced Services. Cisco WebEx Advanced Services are a comprehensive suite of offerings specifically designed to help customers achieve organizational objectives and maximize the return on their WebEx investment. The top priority is to help customers use WebEx more successfully. The WebEx Advanced Services team has deep domain expertise and extensive industry experience.   WebEx Advanced Services offers valuable assistance with WebEx deployment, collaboration adoption, and integration with your business processes, technologies, and culture.

- Collaboration offers, including: Collaboration Readiness Assessment, Connect & Mail Implementation Services, Adoption Management Services, CloudLink integration service and Product Customization Services
- Events offers including: High Definition Video Webcasting, Marketing Automation, Virtual Conferencing, Virtual Meeting Room and Online Marketing Services
- Learning offers, including: Course Management System and Online Learning Consulting

For more information about Cisco WebEx Advanced Services, visit:
http://cisco.com/en/US/prod/ps10352/advanced_services.html.

Cisco WebEx Support Center

Cisco WebEx Support Center helps resolve support issues for remote users, fast. Provide real-time technical support to employees and customers anywhere in the world. Decrease downtime and increase productivity. Tech Support representatives can perform fast fixes, quickly resolve remote support issues, manage remote devices, and accelerate diagnosis and problem solving from anywhere in the world—without costly on-site service visits.

Ideal for Companies That Need These Features

Cisco WebEx Support Center

- Ability to remotely deliver technical support as if onsite
- Reduced support time and cost with the ability to escalate an issue instantaneously for on-demand personalized support
- Software-as-a-service (SaaS) delivery model that allows them to deploy a remote support solution over the web, eliminating the need for hardware and resources to maintain the infrastructure
- Secure and reliable method to deliver technical support both inside and outside the firewall

Key Features and Benefits

- View and control at application and desktop level—When providing support, customers can decide whether they want to share a single application versus their entire desktop. This feature is very important from the security perspective.
- Bring in subject matter experts easily and transfer the session or conference in others.
- Cisco WebEx Network Based Recording (NBR)—All support interactions can be recorded for auditing, tracking, and security purposes. Both audio and visual support session details are recorded.
- Sign on to a client's machine using firewall-friendly technology.
- Measure and improve support organization performance with detailed reporting.
- Performance, reliability, security, and 24-hour support—All Cisco WebEx support sessions run on the Cisco WebEx Collaboration Cloud, which offers better than 99.99-percent reliability and provides exceptional security. Information is never stored on our servers; we use 128-bit Secure Sockets Layer (SSL) and Advanced Encryption Standard (AES) encryption.
- Remotely access and manage computers—Through the use of Cisco WebEx Remote Support and Cisco WebEx Remote Access, you can remotely support and provide proactive support to computers anywhere in the world through the Internet, without the need to access firewalls and open ports on the customer site.
- Cross-platform compatibility—You can support your customers on multiple platforms, Windows, Mac, Linux, and UNIX.
- Integrate out-of-the-box with Salesforce.com and Remedy; application programming interfaces (APIs) are available for other technologies.

For More Information

http://www.cisco.com/en/US/products/ps10412/index.html

Customer Care

Cisco Unified Contact Center Enterprise

Cisco Unified Contact Center Enterprise segments customers, monitors resource availability, and delivers each contact to the most appropriate resource in the enterprise. The software profiles each customer contact using related data such as dialed number and calling line ID, caller-entered digits, data submitted on a web form, and information obtained from a customer database lookup. Simultaneously, the system monitors the resources

available in the contact center to meet customer needs, including agent skills and availability, interactive-voice-response (IVR) status, and queue lengths.

This combination of customer and contact center data is processed through user-defined routing scripts that graphically reflect your company's business rules, enabling Cisco Unified Contact Center Enterprise to route each contact to the right place. Wherever an agent is based, the system delivers a rich set of call-event and customer-provided data as a contact arrives, personalizing service and increasing efficiency. Throughout the process, distributed fault tolerance helps ensure uninterrupted operation and rich reporting provides the business intelligence necessary to effectively run your contact center.

Ideal for Companies That Need these Features

Cisco Unified Contact Center Enterprise
- Single contact center solution to support agents located in multiple locations, including formal contact centers, branch offices, and home agents
- Single contact center solution to support inbound, outbound, e-mail, and Web collaboration channels
- A fully redundant solution

Key Features and Benefits

- Cisco Unified Contact Center Enterprise offers full scalability from less than a hundred to thousands of seats; it supports multisite contact centers and customer-relationship-management (CRM) integration.
- Carrier-class, distributed fault tolerance helps ensure uninterrupted operation.
- Multichannel interaction is possible, including Web collaboration with chat and callback, e-mail, voicemail, and fax routing.
- Universal queue coordinates enables agents to work on multiple tasks from various channels while allowing the agent to be interrupted with high-priority tasks as required.
- The solution provides continuous-contact call detail records.
- The solution provides common agent and supervisor desktops across all Cisco customer-interaction-management products.
- Provides real-time and historical data necessary for mission-critical contact center reporting across all media types. Standard reporting is offered by the Cisco Unified Intelligence Center, and with the availability of the underlying data model and schema, custom reports can easily be developed.
- Support for custom call treatment for calls in queue includes support for music in queue and custom messaging; a standard screen pop allows any caller-entered information to be forwarded to the agent.
- Cisco Unified Contact Center Enterprise supports agent-supervisor interaction through chat; agent-supervisor messages are predefined.
- The solution offers enterprise presence integration through Cisco Unified Expert Advisor and Cisco Agent Desktop to tie in or extend intelligently routed calls to knowledge workers or informal agents.
- Provides integration into a broader Unified Communications management infrastructure, Unified Analysis Manager, which helps analyze the condition and health of every component in the solution and assists in call path analysis, trace setting and log collection

Selected Part Numbers and Ordering Information

IPCE-BUNDLE	Requires the purchase of one CCE Server license. This license entitles the user to deploy the following necessary components: (redundant) Router; (redundant) Logger; (redundant) Communications Manager Peripheral Gateway(s); (redundant) IVR Peripheral Gateway(s) for connection to Cisco Self-Service and Queuing (IVR) systems, CVP and IP-IVR (non-Cisco IVRs require third-party IVR port licenses); Administrative workstation(s); Historical database server(s); WebView Reporting server and reporting user connections; Internet Script Editor (ISE) server and ISE user connections; application gateways; (redundant) CTI server for third-party CTI connections (only for non-agent desktop application)
IPCE-SVR	Contact Center Enterprise server license

For More Information

http://www.cisco.com/go/ipcc

Cisco Unified Contact Center Express

Cisco Unified Contact Center Express provides easy-to-deploy, easy-to-use, highly available, and sophisticated customer interaction management for 1 to 300 agents by supporting a highly available virtual contact center with integrated self-service applications across multiple sites secured with Cisco Security Agent. All Cisco Unified Contact Center Express solutions are tightly integrated with Cisco Unified Communications Manager.

Ideal for Companies That Need these Features

Cisco Unified Contact Center Express
- Contact center-in-a-box that delivers intelligent routing, call treatment, network-to-desktop and computer telephony integration (CTI), and integrated self-service for customer contact management over an IP infrastructure
- Ability to handle e-mail-based contacts and provide outbound dialing support
- Sophisticated workforce management, quality management, and compliance recording
- Ability to integrate multiple Cisco Unified Contact Center Express systems in the cloud under the control of Cisco Unified Intelligent Contact Management, including pre- and postrouting and centralized reporting
- Redundancy with high availability

Cisco Unified Contact Center Express is a virtual contact center that is easy to deploy, configure, and manage. It is available in three different packages [Standard, Enhanced, and Premium] to help ensure the right match with your business requirements. This interactive-voice-response [IVR] self-service solution is fully integrated with contact center operations, including the ability to deploy advanced self-service technologies such as Automatic Speech Recognition (ASR) and Text to Speech (TTS).

Key Features and Benefits

- Cisco Unified Contact Center Express reduces business costs while improving customer response by providing sophisticated and distributed automatic call distributor (ACD), interactive voice response (IVR), computer telephony integration (CTI), and agent and desktop services.
- The solution offers numerous sophisticated options traditionally associated with enterprise contact centers, including the ability to handle e-mail -based contacts, presence integration, outbound preview dialing, and a complete workforce-management solution.
- Administration is browser-based, integrating with Cisco Unified Communications Manager browser-based administration.
- The solution provides ongoing contact call detail records.
- The standard screen allows any caller-entered information to be forwarded (through a screen pop) to the agent.
- The solution provides predefined or custom historical reports; real-time reports are provided within the agent and supervisor desktops.
- Offers high-availability redundancy for dual server cluster deployments, including support for automatic failover of inbound voice ACD, IVR, and desktop services, as well as database replication and failover and load-balanced redundancy for historical reporting and on-demand recording.
- Supports high availability over the WAN (HAoWAN). It also supports switching between Cisco Unified Contact Center Express 8.0 HAoWAN and high availability over the LAN (HAoLAN).
- This complete, enterprise-wide, scalable unified contact center solution works in the Cisco Customer Interaction Network.
- Cisco Unified Contact Center Express 8.0 supports deployment in an appliance model on Linux-based operating systems. The appliance model is a secure, resilient, and robust model that is less complex and provides for faster installs, easier upgrades, and less-frequent patching.
- Cisco Unified Contact Center Express fully supports agent-supervisor interaction through chat and predefined messages.
- The solution offers full IP call queue points and prompts; it collects voice interaction capabilities.
- Optional Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) capabilities are available.
- The solution supports custom call treatment such as music for calls in queue.
- Offers Cisco Mobile Supervisor feature enabling supervisors to receive real-time reports on the go on their Apple iPhone or iPod Touch.

NOTE: This is an abbreviated list of Cisco Unified Contact Center features.

Selected Part Numbers and Ordering Information

CCX-80-SRVRS-MEDIA	CCX 8.0 NEW Deployment-Appliances, Servers, Media Kits
L-CCX-80-NEW	CCX 8.0 NEW Deployment-Product, UCSS eDelivery LICENSES ONLY
L-CCX-80-ADDON	CCX 8.0 ADDON Deployment-Product, UCSS eDelivery LICENSES ONLY

For More Information

http://www.cisco.com/go/ipccexpress

Cisco Unified Expert Advisor

Cisco Unified Expert Advisor expands the scope of the contact center by allowing presence-enabled enterprise knowledge workers to handle incoming customer calls without the need for the rigid tools and business rules typically found in formal contact centers. Cisco Unified Expert Advisor can be deployed as an add-on to Cisco Contact Center solutions, or in a standalone mode without any formal contact center agents in the call flow. Experts receive precall data, allowing faster problem resolution. The solution is highly flexible and customizable, allowing enterprises to implement the most appropriate architecture and business logic to meet their customer contact needs.

Ideal for Companies That Need these Features

Cisco Unified Expert Advisor

- Formal contact centers with agents that require escalation to third- or fourth-level support or specialists in the enterprise who have the ability to improve on customer service by addressing the sought-after "first-call resolution."
- Small to medium-sized contact centers that require extension of customer calls to knowledge workers and for informal contact centers that do not process a high load of calls or where most customers address their needs from a self-service application.
- Environments where there is only a self-service or queuing application and no formal agents.

Key Features and Benefits

- The solution improves first-call resolution and increases customer satisfaction by allowing subject matter experts anywhere in the enterprise to handle incoming customer calls.

- When deployed with Cisco contact center solutions, formal agents can request expert help with the click of a button.
- Agents can transfer the caller to the expert, or engage in a three-way conference with the caller and the expert.
- When deployed in standalone mode, Cisco Unified Expert Advisor provides robust, efficient customer interactions without the need for traditional contact center agents.
- Real-time and historical reports give decision makers detailed insights and control over their customer interaction flows. The solution offers higher rates of first-call resolution and reduced customer turnover.

Selected Part Numbers and Ordering Information

UNIFIED-EA-7X	Cisco Unified Expert Advisor Top Level Bundle
EA-USR-LIC=	EA Single Seat (Presence License ordered separately)
EA7.X-RTS-LIC-K9=	EA 7.x Runtime Srv License (Presence License ordered separately)

For More Information
http://www.cisco.com/go/ea

Cisco Unified Intelligence Center

Cisco Unified Intelligence Center is a web-based GUI that provides real-time and historical reporting in an easy-to-use, wizard-based application for Cisco Unified Contact Center Enterprise. It allows contact center supervisors and business users to report on the details of every contact across all channels in the contact center from a single interface.

Built on a robust and extensible Web 2.0 framework, Cisco Unified Intelligence Center allows customers to extend the boundaries of traditional contact center reporting to an information portal where data can be easily integrated and shared throughout the organization.

Two versions of Cisco Unified Intelligence Center are available: Cisco Unified Intelligence Center Standard and Premium. Cisco Unified Intelligence Center Standard software is included as part of the Cisco Unified Contact Center Enterprise software kit. Cisco Unified Intelligence Center Premium includes advanced features and the ability to create new reporting queries and access other external databases and data sources.

Ideal for Companies That Need these Features

Cisco Unified Intelligence Suite	· Powerful web-based reporting platform that is as flexible as it is intuitive · The ability to report on the details of every contact across all channels from a single interface, regardless of the resources involved

Key Features and Benefits

- Cisco Unified Intelligence Center offers real-time and historical reporting in an easy-to-use, wizard-based interface.
- The solution offers a variety of presentation formats such as interactive grids, charts, web pages, and RSS feeds.
- Administrators can control access to features, reports, and data by granting privileges to individual users or groups of users.
- The solution offers integrated reporting for any data source, including third-party automatic call distributors (ACDs), Cisco Unified Workforce Management, customer relationship management (CRM), and QM products.
- The solution offers the ability to move between reports through hyperlinks providing drill-up, drill-down, and drill-across capabilities.
- Advanced drill-down capabilities allow customers to link multiple reports, including the ability to drill across data sources for maximum flexibility.

Selected Part Numbers and Ordering Information

IPCE-SVR-ADDON CCEH-CUIC8-PREM CCEH-CUIC8-STD	Cisco Unified Intelligence Center Standard and Premium licenses

For More Information
http://www.cisco.com/go/ccreports

Cisco and salesforce.com Customer Interaction Cloud

The Cisco and salesforce.com Customer Interaction Cloud is a multichannel contact center solution that is designed for organizations with 30 to 300 knowledge workers or agents. This solution allows customers to use the salesforce.com Service Cloud as their primary agent desktop while having Cisco Unified Contact Center capabilities to operate a customer care or support center in any industry, as well as inbound and outbound telesales, from anywhere in North America. Contact centers can be operational in a matter of weeks and completely hosted in the cloud.

It features pre-integrated Cisco Unified Contact Center with salesforce.com's Service Cloud and agent desktop, along with standard configurations, so self-service administration is easier to manage and agents are immediately more productive.

TeleTech hosts the service, allowing customers to quickly respond to changes in the market at their own discretion.

Ideal for Companies That Need these Features

Cisco and salesforce.com Customer Interaction Cloud
- Faster deployment of their contact center by following a cloud computing or Software-as-a-Service model
- Completely hosted and managed infrastructure of their contact center
- Multichannel contact capabilities, incorporating social media such as Facebook and Twitter
- Flexible scalability to meet the demands of the growing business
- Tightly integrated routing and reporting capabilities
- Simplification of provisioning and day-to-day management

Key Features and Benefits

- Customer service and support functions—With systematic case tracking and management, customers can automatically capture, route, and escalate cases from all channels based on business rules for faster and better customer service.
- Reporting—Supervisors access historical and real-time reports with a click of the mouse.
- Routing functions—Agents can work on multiple tasks from various channels, and the solution facilitates interruptions for high-priority tasks as required.
- Supervisory features—Supervisors can view agent states and call information, and silently monitor agent calls.
- Single user interface—To streamline the customer interaction process and create operational efficiencies, agents, supervisors, and administrators use the same web portal with a consistent user interface to access all applications and call center tools.
- Self-provisioning—Administrators can manage all configurations in a graphical web portal, greatly simplifying provisioning.
- Multichannel integration—Reach beyond standard inbound telephony channels to include social networks such as Facebook, Twitter, and other web channels.

Selected Part Numbers and Ordering Information

CIC-STD-DURATION	Customer Interaction Cloud Standard Contract Duration
CIC-STD-PERMAGT	Customer Interaction Cloud Standard Permanent Agent
CIC-STD-PERMAGT-1M	Customer Interaction Cloud Standard Permanent Agent 1 Month

For More Information

http//www.customerinteractioncloud.com

Cisco Unified Customer Voice Portal

The Cisco Unified Customer Voice Portal integrates with both traditional time-division multiplexing (TDM) and IP-based networks to provide an unparalleled call-management and call-treatment solution with speech-enabled interactive voice response that can use information available on the corporate web server. With support for ASR and TTS capabilities, callers can obtain personalized answers to complex questions and can conduct business in new and innovative ways–with or without a live agent. The Unified CVP solution offers a unique capability of providing the voice processing on Cisco integrated services routers and access servers, thus allowing the same self-service application to be deployed at a retail office or at large customer call centers, thus significantly reducing customers' bandwidth usage.

Ideal for Companies That Need These Features

Cisco Unified Customer Voice Portal
- Offset high costs associated with assisted-service contact center agents by directing more customer interactions to automated self-service
- Improved effectiveness of automated self-service at lower cost by treating calls at the most effective location
- A consistent customer experience across self-service (web and phone) and assisted-service environments

Key Features and Benefits

- Cisco Unified CVP can play prerecorded announcements and prompts to callers, supporting a wide variety of informational and self-service applications. Streaming audio is also supported (with Real-Time Streaming Protocol [RTSP]), allowing play of live audio sources.
- Cisco Unified CVP supports web services interfaces such as Web Services Description Language (WSDL) and Simple Object Access Protocol (SOAP), enabling real-time integration with web-enabled business applications.
- In addition to its self-service and queuing capabilities, Cisco Unified CVP possesses powerful SIP-based call control to instruct the IP network where to route the call. This control can include call transfer to an agent, IVR, ACD, PBX, or a carrier network, providing a wealth of customer service options.

Selected Part Numbers and Ordering Information

CVP-80-SERVER-SW	CVP 8.0 Server Software
CVP-STU-80=	CVP Studio 8.0
CVP-8X-PTS	CVP 8.X Self-Service Port License

For More Information
http://www.cisco.com/go/cvp

Enterprise Social Software

Cisco Prosumer Video

Building on the success of Cisco Flip Video consumer products, the Cisco Prosumer Video solution combines a video-capture device with the Cisco FocalPoint online video workspace for the enterprise. Part of the Cisco Collaboration portfolio of products, Cisco Prosumer Video retains the ease of use of the consumer Cisco Flip Video camcorder while adding additional memory for longer recording time, as well as a web-based cloud service for easy sharing and collaboration.

Key Features and Benefits

Cisco Prosumer Video can simplify and enrich the way we communicate, collaborate, and document:

- Organizational communications—Executives articulate their ideas well. Often they communicate out loud to a writer, who then develops a written document. Inviting executives to speak directly to the audience can get the message out more quickly. Video also enriches communications because viewers can hear enthusiasm in the speaker's voice, for example, or see confidence in facial expressions and body language. Using Cisco's Prosumer Video solution overcomes a major barrier to communications in globally dispersed organizations.
- Collaboration and training—Paper employee manuals are expensive and time-consuming to produce, and often less than thrilling to read. As an alternative, sending corporate trainers to branch offices is costly in terms of time, travel expense, and carbon emissions. In addition, employees have to interrupt their activities to attend offsite training sessions. The Cisco Flip MiniPRO camcorder and FocalPoint online video workspace make it easy and cost-effective to create and collaborate on video training materials.
- Documentation—Use a Cisco Flip MiniPRO camcorder to document best practices, winning sales techniques, complex process and designs, and more. For example, an insurance claims adjuster can capture and share video of an accident scene and property damage for a faster and more accurate record. A manufacturing engineer can use video to document a problem on the assembly line more quickly than attempting to explain it to the product designer in words. Retailers can use a Cisco Flip MiniPRO camcorder to accurately document shopper behavior for research and planning.
- Healthcare—Patients tend to forget care instructions over time, resulting in delayed healing or, in the case of physical therapy, incorrect exercise technique that can do more harm than good. Instruction sheets provide little value when patients misplace them, have limited reading skills, or speak another language. With the Cisco Flip MiniPRO camcorder, healthcare providers and physical therapists can create easy-to-understand video instructions. And for long-term follow-up, healthcare providers can reduce the cost and hassle of appointments by providing Cisco Flip MiniPRO camcorders to patients as part of outpatient care, with instructions to file video reports by visiting Cisco FocalPoint. This arrangement is familiar in healthcare because providers already loan out devices such as heart and blood-pressure monitors.
- Education—Having grown up in a world of video-sharing sites and video games, many of today's students absorb content better, and certainly more enthusiastically, when course material is presented in video format. School teachers and college professors can use Cisco Prosumer Video to build a library of learning content, extend the classroom outside campus boundaries, and support students with learning disabilities. Instructors can also engage students by inviting them to work in teams to create and publish their own videos, a skill that also helps prepare them for the 21st century workplace.

For More Information
http://www.cisco.com/go/prosumervideo

Cisco Flip MiniPRO

Cisco Flip MiniPRO camcorder, the first in a series of the enterprise-class Cisco Prosumer Video solution camcorder products, enhances business process and improves collaboration by allowing the capture of video content for secure editing and sharing. As part of the in the Cisco Collaboration portfolio, Cisco Prosumer Video complements the solution suite by bringing together people, information, and an integrated solution for video capture and sharing. Viewing, editing, and sharing across organizations is possible with the Cisco FocalPoint online video workspace. Additionally, Cisco Prosumer Video integrates with Cisco Show and Share to allow for video distribution and a robust set of collaboration features to further enhance video sharing.

Key Features and Benefits

The Cisco Flip MiniPRO camcorder offers the following benefits:

- Added dynamic component to messages—Record earnings calls, company announcements, and product demos to improve delivery of communications within and outside of organizations.

- Improved information delivery and retention—Use video capture to share best practices, sales techniques, and complex processes and designs to increase collaboration.
- Reduced global barriers and travel costs—Provide video training instead of spending the time and money to travel.
- Ease of use—Spend more time producing relevant content with the easy-to-use Cisco Flip MiniPRO camcorder.

The Cisco Flip MiniPRO camcorder provides the following features:
- It offers 4 hours of recording time.
- It has 16 GB of memory.
- You can start or stop recording with just one touch.
- Its slim, sleek design fits in any pocket or purse - perfect for shooting video when you are mobile.
- The user interface is simple - you can power on and press Record to start capturing high-definition (HD) video in moments.
- Its convenient flip-out USB arm plugs directly into your PC or Mac to launch preloaded Cisco FlipShare or Cisco Online Video Workspace software.
- You can play back and delete videos on its large, 2-inch antiglare color display.
- Its internal Lithium-ion battery recharges through a built-in USB; it also recharges when connected to a Cisco Flip Video™ Power Adapter (not included), and it can also use two AA batteries.
- The High-Definition Multimedia Interface (HDMI) output (mini-HDMI connector) makes it easy to watch video on your high-definition TV (HDTV).
- Its all-new design features a unique brushed-metal front and soft, rounded edges.
- The camcorder features a flat-back panel with touch-sensitive, backlit buttons.
- It records high-quality H.264 videos that are compatible with most video-playing applications, including Windows Media Player, QuickTime Player, and iTunes.
- Video is on a 16:9 widescreen, HD 720p (1280 x 720) at 30 frames per seconds (fps) progressive scan; it is recorded as MP4 files.
- Included in the package are a Cisco Flip MiniPRO camcorder, a wrist strap, a soft protective case, and a user guide.

Specifications

Feature	Specification
Connectivity	USB 2.0
Memory	16-GB internal flash memory
Language support	English
Physical dimensions (H x W x D)	3.94 x 1.97 x 0.63 in. (100 x 50 x 16 mm) 4.1 oz (117g)
Power	· Power up time: Less than 4 seconds · Power saver: Activates after 90 seconds of inactivity
Temperature range	32–95°F (0–35°C)
Approvals and compliance	· This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. · This Class B digital apparatus complies with Canadian ICES-003.
Additional specifications	· Video capture: Resolution: HD 720p (1280 x 720, 16:9 widescreen) at 30 fps (constant frame rate), progressive scan · Bitrate: Variable, 9.0 Mb on average · Format/compression: H.264 video compression, AAC audio compression, MP4 file format · Performance: Cisco Flip Video Engine 3.5 · Microphone: Built-in wide-range, omnidirectional (stereo) microphone · Speaker: Built-in speaker with software volume control

Selected Part Numbers and Ordering Information

C2BU-MP2240G	Cisco Flip MiniPRO camcorder

For More Information

http://www.cisco.com/go/prosumervideo

Cisco FocalPoint

Cisco FocalPoint is an online video workspace for uploading, organizing, and sharing video and makes it easy to share videos, edit individual clips, and create custom movies securely within your organization. Cisco FocalPoint helps businesses communicate more quickly and more dynamically with video content. As part of the Cisco Prosumer Video solution in the Cisco Collaboration portfolio, Cisco FocalPoint complements the Cisco Flip MiniPRO camcorder by bringing people, information, and an integrated solution for video capture and sharing together through an easy-to-use, web-based platform.

Key Features and Benefits

Cisco FocalPoint provides the following benefits:

- Deliver your messages dynamically—Focus on delivering your messages more quickly by viewing, sharing, and editing videos across multiple functional areas within your organization. Accentuate important points to deliver your message with greater impact.
- Increase collaboration—Sending corporate trainers to branch offices is costly in terms of time, travel expense, and carbon emissions. Cisco Online Video Workspace Client and Cisco Online Video Workspace cloud application make it easy and cost-effective to create and collaborate on video training materials.
- Improve knowledge transfer—Use Cisco Online Video Workspace Client and Cisco Online Video Workspace cloud application to share best practices, winning sales techniques, complex process and designs, and more across your business.
- Boost information retention and compliance—Cisco FocalPoint makes it easy and convenient for the audience to access important instructions and information at any time.

Cisco FocalPoint provides the following features:

- Upload video that you captured on your Cisco Flip MiniPRO camcorder
- Control who can view your videos by assigning viewing rights
- Organize videos in folders, such as one for each classroom in a school, or one for each project in a company division
- Edit videos to capture key messages

Specifications

Language support	English

Selected Part Numbers and Ordering Information

L-C2BU-CFP-1YR	Cisco FocalPoint

For More Information

http://www.cisco.com/go/prosumervideo

IP Communications

Cisco Unified Communications Manager

Cisco Unified Communications Manager is the powerful call-processing component of the Cisco Unified Communications Solution. It is a scalable, distributable, and highly available enterprise IP telephony call-processing solution that focuses on lowering the total cost of ownership for customers and improving the user experience of end users and system administrators. Major highlights include:

- Improves mobility, through extension mobility cross-cluster, plus HTTPS for encrypted user name and PIN transmission
- Reduces deployment time, realizes quicker ROI, lowers ongoing operational costs, and improves business continuity
- Provides a dynamic, flexible, network-based call admission control engine for voice and video
- Improves cost savings and collaboration by extending Unified Communications capabilities outside the organization

Key Features and Benefits

- Cisco Unified Communications Manager is available on the Cisco Unified Computing System as well as on Cisco 7800 Series Media Convergence Server platforms and selected third-party servers.
- Multiple Cisco Unified Communications Manager servers can be clustered and managed as a single entity. The application offers scalability from 1 to 30,000 IP phones per cluster, with load-balancing and call-processing service redundancy. Interlinking allows system capacity to reach 1 million users in a system of more than 100 sites. The solution aggregates the power of multiple, distributed installations, enhancing the scalability and accessibility of the servers to phones, gateways, and applications, and triple call-processing server redundancy improves overall system availability.
- Call Admission Control (CAC) helps ensure that voice quality of service (QoS) is maintained across constricted WAN links, and automatically diverts calls to alternate public-switched-telephone-network (PSTN) routes when WAN bandwidth is not available.
- Devices can automatically update location information as they move from location to location to improve CAC and emergency service performance.
- This solution effectively supports IP phone activities; Cisco Unified Communications Manager Assistant has been ported to an Extensible Markup Language (XML) service that can be run on the phone, allowing assistants that handle executive and manager phones to have increased features without having to rely on a PC to provide the user interface.
- Cisco Unified Communications Manager integrates with a Lightweight Directory Access Protocol (LDAP) directory such as Active Directory to provide required security features.
- Cisco Unified Communications Manager provides improved call routing to remote phones connected over a WAN. It allows alternate routing when the WAN is out of bandwidth or out of service. It provides routing to

the originally called phone number through the PSTN or can call an alternate phone such as a mobile phone during a WAN failure or an out-of-bandwidth situation.

- Access through a full GUI and a command-line interface facilitates diagnostics. The solution supports all system management activities such as disk-space monitoring, system monitoring, and upgrades, which are either automated or controlled. The solution supports basic systems management features such as starting or stopping services and rebooting the appliance.
- The solution is preloaded with Cisco Security Agent.
- An expanded Session Initiation Protocol (SIP) trunk interface conforms to RFC 3261, allowing support of video calls over the SIP trunk. Cisco Unified Communications Manager supports line-side devices, including IETF RFC 3261-compliant devices available from Cisco and other manufacturers.
- The Resource Reservation Protocol (RSVP) agent on a Cisco router extends CAC capability beyond a hub-and-spoke topology within a cluster.
- Simple Network Management Protocol (SNMP) support allows managers to set and report traps on conditions that could affect service and send them to the remote-monitoring systems.

Specifications

Feature	Cisco Unified Communications Manager[1]
Pre-installed Software	Cisco Unified Communications Manager, configuration database, administrative software, CDR Analysis and Reporting Tool, Bulk Administration Tool (BAT), Real-Time Monitoring Tool (RTMT), Cisco Conference Bridge, Locale Installer, JTAPI, Telephony Service Provider, Cisco Unified Communications Manager Assistant, Cisco Unified Mobility, Cisco Unified IP Phone Address Book Synchronizer, Cisco Dialed Number Analyzer
Platforms	Cisco Unified Computing System, Cisco Media Convergence Server (MCS): Selected third-party servers
New and Enhanced Capabilities	• Cisco Intercompany Media Engine (IME)—Cisco Intercompany Media Engine allows intercompany, boundary-less communications among business partners and customers. It allows enterprise video telephony and high-fidelity wideband audio between companies. It is easy to use because it self-learns IP routes to business partners. When making Session Initiation Protocol (SIP) calls to business partners, you have the same experience as you do within your own company. It enables sharing of innovative collaboration capabilities and applications between partners. Cisco Intercompany Media Engine is a new Cisco Voice Application and is installed in a separate server from Cisco Unified Communications Manager. Cisco Unified Communications Manager works with the Cisco Intercompany Media Engine and the adaptive security appliance (ASA) to provide business-to-business connectivity. • Cisco Unified Communications Manager Session Management Edition—Cisco Unified Communications Manager added Session Management support in Version 7.1(3). Cisco Unified Communications Manager Session Management Edition support is continued and enhanced in Version 8.0 with features such as Cisco Intercompany Media Engine and Resource Reservation Protocol (RSVP). Cisco Unified Communications Manager Session Management Edition allows for centralized SIP trunking and routing to help simplify networks and reduce costs by consolidating trunking. Cisco Unified Communications Manager Session Management Edition can also aggregate voice applications and policy control. • Cisco Service Advertisement Framework—Call Control Discovery: This network-based, scalable, bandwidth-efficient, real-time approach to service advertisement and discovery allows Cisco Unified Communications Manager to advertise directory number ranges that it owns and discover and dynamically create routes for other Cisco Unified Communications Manager clusters. It greatly reduces dial-plan configuration for complex unified communications deployments. • Cisco Unified IP Phones 6900, 8900, and 9900 model phone support—Cisco Unified Communications Manager 7.1(3) and 8.0 and later support the Cisco Unified IP Phones 8900 and 9900 Series models. Version 8.0 adds support for the universal-serial-bus (USB) video camera and Cisco Unified IP Phone 6901 and 6911 models. • Extension Mobility Cross Cluster (EMCC)—Cisco Unified Communications Manager 8.0 adds support for EMCC, which allows you to cross cluster boundaries but still log into your Extension Mobility profile. EMCC is designed so that you get nearly the same experience whether or not you are in your home cluster. • RSVP SIP preconditions—Cisco Unified Communications Manager 8.0 enhances RSVP to allow calls that cross cluster boundaries or terminate in other call control clusters to be able to use RSVP agents to provide end-to-end dynamic Call Admission Control (CAC) even for calls to phones outside the cluster. • Cisco Unified Computing System (UCS) support—Cisco Unified Communications Manager 8.0(2) can run on VMware on Cisco UCS B200 M1 and UCS C210 M1 servers. This setup reduces server count and lets enterprises deploy Cisco Unified Communications Manager in a data center on a platform that reduces server operating costs. • Analysis Manager—Analysis Manager is a feature of the Cisco Unified Communications Manager Real-Time Monitoring Tool (RTMT) that allows RTMT to provide solution-level diagnostic features for other Cisco Unified Communications applications, including Cisco Unified Customer Voice Portal, Cisco Unified Intelligent Contact Management Enterprise, Cisco Unified Contact Center Express, Cisco IOS® Gateway devices and Cisco IOS Access Control System (ACS), Cisco Unified Expert Advisor, and Cisco Unified Contact Center Enterprise.

1. Additional RAM may be required in Media Convergence Servers to support existing and enhanced services in Cisco Unified Communications Manager.

Selected Part Numbers and Ordering Information

CUCM-USR-LIC	Cisco Unified CM 8.0 Top Level Part Number

For More Information

http://www.cisco.com/go/unifiedcm

Cisco Unified Communications Manager Assistant

Included with Cisco Unified Communications Manager, Cisco Unified Communications Manager Assistant provides the call-routing and call-management capabilities required in a manager or administrative assistant business environment while giving users a choice of phone devices that better fit their needs. By combining a PC-based console application with various softkeys and display panes on Cisco Unified IP Phones, it can present users job-specific tools, such as directories with Click-to-Dial and drag-and-drop functions, to more efficiently manage calls.

Cisco Unified Communications Manager Assistant is configured in either proxy-line mode or shared-line mode. In proxy-line mode, managers and assistants have different directory numbers or lines on their phones, but calls to managers are usually diverted to the assistant's line based on customizable dynamic filters. In shared-line mode, both managers and assistants share the same directory number, but assistants can handle calls without disturbing managers. Either mode can be used in conjunction with the PC-based console application or a new Extensible Markup Language (XML)-based phone service that does not require a PC.

Ideal for Companies That Need These Features

Cisco Unified Communications Manager Assistant
- Administrative assistants who need an efficient way to monitor and manage calls for multiple managers
- Managers who regularly have their calls answered by an assistant

For More Information

http://www.cisco.com/go/ipma

Cisco Unified Communications Manager Express

Cisco Unified Communications Manager Express provides call processing for Cisco Unified IP phones for small-office or branch-office environments. It enables the large portfolio of Cisco integrated services routers to deliver unified communications features that are commonly needed by business users to meet the voice and video communications requirements of the small or medium-sized office. Cisco Unified Communications Manager Express allows the deployment of a cost-effective, highly reliable communications system in a single device using Cisco IOS software.

Key Features and Benefits

- Low cost —This full-featured call processing solution is integrated into Cisco Integrated Services Routers and Cisco Multi-service Access Routers that deliver a small footprint and are simple to deploy, administer, and maintain
- Comprehensive feature set—Innovative key system and small private branch exchange (PBX) capabilities available within feature-rich Cisco IOS software
- Business process transformation—Integration with existing business process applications, such as Customer Relationship Management (CRM), delivered in combination with Cisco Unified CallConnector applications
- Increased employee productivity—Users have call control, location, and status of other users with Cisco Unified CallConnector for Microsoft Windows, a presence-based Windows application
- User-specified call handling—Users can take advantage of single number reach by extending incoming business calls to mobile or home phones based on rules they specify with Cisco Unified CallConnector Mobility
- Easy installation and changes—An intuitive management interface makes moves, adds and changes easy
- Industry-leading investment protection—The solution designed to support up to 450 users can interoperate with Cisco Unified Communications Manager, and enables planned migration strategies in support of future growth requirements

Specifications

Feature	Cisco Unified Communications Manager Express
Platform	Cisco 1861, 2800, 3800, 2900, 3900, and 3900E Integrated Services Routers. Cisco Unified 500 Series for Small Business as part of Cisco Smart Business Communications System
Maximum total users	500
Phones Supported	All Cisco Unified IP Phones 6900 Series, 7900 Series, and Cisco Unified SIP Phones 3900 Series
IOS Images	Version 3.3 supported with IOS 12.4 mainline; Version 3.4 with IOS 12.4(4)T; Version 4.0 with IOS 12.4(9)T. Version 4.1 with 12.4(15)T; Version 7.0 with 12.4(20)T. Version 7.1 with 12.4(24)T. Version 8.0 with 15.0(1)M. Version 4.0 is the recommended release for most customers.

Selected Part Numbers and Ordering Information

Cisco Integrated Service Routers Unified Communications Bundles that include the Cisco Router, Cisco Unified Communications Manager Express Feature License, Cisco Unity Express hardware and licensing, Cisco Unified IP Phone licensing and Cisco Unified CallConnector for Microsoft Windows licensing.

C3845-35UC-VSEC/K9	UC plus Security with Cisco Unity Express—Cisco 3800 Series Integrated Services Routers: Cisco 3845 base router, 128 MB flash, 512 MB DRAM, DSP-64, NME-CUE, CCME FL for 35 users, CUE FL for 35 users, 35 phone device licenses, Cisco IOS Advanced IP Services, 10 UCC desktop client licenses
C2851-35UC-VSEC/K9	UC plus Security with Cisco Unity Express—Cisco 2800 Series Integrated Services Routers: Cisco 2851 base router, 128 MB flash, 256 MB DRAM, DSP-48, NME-CUE, CCME FL for 35 users, CUE FL for 35 users, 35 phone device licenses, Cisco IOS Advanced IP Services, 10 UCC desktop client licenses
C2801-10UC-VSEC/K9	UC plus Security with Cisco Unity Express—Cisco 2800 Series Integrated Services Routers: Cisco 2801 base router, 128 MB flash, 256 MB DRAM, DSP-32, AIM-CUE, CCME FL for 10 users, CUE FL for 10 users, 10 phone device licenses, Cisco IOS Advanced IP Services, 2 UCC desktop client licenses
C3845-35UC/K9	UC with Cisco Unity Express—Cisco 3800 Series Integrated Services Routers: Cisco 3845 base router, 128 MB flash, 512 MB DRAM, DSP-64, NME-CUE, CCME FL for 35 users, CUE FL for 35 users, 35 phone device licenses, Cisco IOS SP Services, 10 UCC desktop client licenses
C2851-35UC/K9	UC with Cisco Unity Express—Cisco 2800 Series Integrated Services Routers: Cisco 2851 base router, 128 MB flash, 256 MB DRAM, DSP-48, NME-CUE, CCME FL for 35 users, CUE FL for 35 users, 35 phone device licenses, Cisco IOS SP Services, 10 UCC desktop client licenses
C2801-10UC/K9	UC with Cisco Unity Express—Cisco 2800 Series Integrated Services Routers: Cisco 2801 base router, 128 MB Flash, 256 MB DRAM, DSP-32, AIM-CUE, CCME FL for 10 users, CUE FL for 10 users, 10 phone device licenses, Cisco IOS SP Services 2 UCC desktop client licenses
C1861-UC-4FXO-K9	UC with Cisco Unity Express—Cisco 1800 Series Integrated Services Routers: Cisco 1861, 128 MB flash, 256 MB DRAM, DSP-32, 4 FXS, 4 FXO/2BRI, 8 PoE, AIM-CUE, CCME FL for 8 users, CUE license for 8 users, 10 phone device licenses, Cisco IOS SP Services, 2 UCC desktop client licenses

For More Information

http://www.cisco.com/go/ccme

Cisco Unified Communications Manager Business Edition

Cisco Unified Communications Manager Business Edition (CUCMBE) is designed for medium-sized businesses with up to 500 employees and up to 20 sites (19 remote sites). The Cisco Unified Communications Manager Business Edition integrates the benefits of voice, video, mobility, and messaging on a single platform. Previously, organizations needed one hardware server for each application. Consolidating applications on a single server makes the Cisco Unified Communications Manager Business Edition a cost-effective solution by eliminating the need to have multiple hardware servers to run each application. It also dramatically simplifies the installation, support, upgrade, and ongoing management of the system, thereby reducing the total cost of ownership (TCO).

Key Features and Benefits

The Cisco Unified Communications Manager Business Edition inherits nearly all of the core features and functions of the Cisco Unified Communications Manager and Cisco Unity Connection applications. Some of the core capabilities are summarized here.

- Call control—In addition to standard telephony features such as call coverage, call transfer, call waiting, hold, conference, park, and pickup, Cisco Unified Communications Manager Business Edition delivers a powerful set of telephony features for medium-sized businesses; for instance, intercom with whisper page, do not disturb, hold reversion, immediate divert to voicemail, and hunt groups.
- Lightweight Directory Access Protocol (LDAP) synchronization and authentication
- High availability with support for up to 20 Unified Survivable Remote Site Telephony (SRST) sites using a centralized call-processing model
- Consumes fewer IT resources—Centralized architecture makes it easy to install, upgrade, and manage
- Increases employee productivity—With powerful speech recognition voicemail features and advanced mobility features such as single number reach
- Increases employee collaboration—With an available computer desktop client to provide presence status, instant messaging, click to dial, and a soft phone that turns any laptop into an extension of your desk IP phone
- Provides communications-enabled business processes—With integration via the Cisco Unified Application Environment
- Wide selection of available phones—Supports the full portfolio of Cisco Unified IP Phones

Specifications

Feature	Cisco Unified Communications Manager Business Edition
Platform	The Cisco Unified Communications Manager Business Edition software suite is supported on the Cisco MCS 7828 Unified Communications Manager Business Edition Appliance, a member of the Cisco media convergence server portfolio.
Maximum total users	500
Mailboxes and voicemail ports	500 mailboxes and 24 voicemail ports
Number of remote sites	20 (centralized call processing, with Cisco Unified Survivable Remote Site Telephony [SRST] for redundancy)
Telephony and voicemail feature limitations	Cisco Unified Communications Manager Business Edition supports all the standard telephony features of Cisco Unified Communications Manager and voice-messaging features of Cisco Unity Connection except the following: • Call processing and voicemail redundancy • Distributed call processing—Cisco Unified Communications Manager Business Edition is supported only in the centralized call-processing model with Cisco Unified SRST.

User and Administrator Features

For a summary of user and administrator features, please refer to the Cisco Unified Communications Manager 8.0 and Cisco Unity Connection 8.0 data sheets.

Supports 14 core languages for user locales, the voicemail telephone user interface, and the GUI.

In addition to the core languages, Cisco Unified Communications Manager supports an additional 13 user localizations.

Selected Part Numbers and Ordering Information

Cisco Unified Communications Manager Business Edition can be ordered in a couple of different ways, either independently (with Cisco User Connect Licensing) or as part of a workspace bundle (with Cisco Unified Workspace Licensing).

Both Cisco Unified Communications Manager Business Edition licenses require purchasing a starter bundle. The starter bundles include all the unified communications server and client software for the applications included under the licenses, the Cisco MCS 7828 server hardware for deploying Cisco Unified Communications Manager Business Edition, and licenses for the first 50 users. To deploy Cisco Unified Presence, customers need to purchase a separate adjunct server.

MCS7828I4-K9-WL	CUCMBE, 7828-I4 appliance, Workspace License 50 Users
MCS7828I4-K9-BE8	Unified CM BE 8.X, 7828-I4 appliance, 50 Enhanced User Connect Licenses

For More Information

http://www.cisco.com/go/cmbe

Cisco Unified Communications Manager Session Management Edition

Cisco Unified Communications Manager Session Management Edition is a version of Cisco Unified Communications Manager that provides centralized trunking, application, and policy control. It reduces communication tolls, cuts administrative overhead, and supports easier migration to a full IP telephony environment.

Its primary capabilities include:

- Centralized trunking to IP Session Initiation Protocol (SIP) trunks, traditional public-switched-telephone-network (PSTN) trunks, or SIP connections to business partners over the Internet using the Cisco Intercompany Media Network
- A component of the Cisco Intercompany Media Network that delivers communications between business partners without boundaries, providing cost savings
- Interconnection among private branch exchanges (PBXs), helping to enable reduced system administrative overhead and easier migration to an all-IP environment
- Platform for future feature interaction with social networking, mobility networks, and network-based recording
- Interconnection of PBXs to social networking and web applications—Using Web 2.0 and Cisco Enterprise Collaboration Portal, helping to enable broader and richer collaboration

The combination of Cisco Unified Communications Manager Session Management Edition and Cisco Unified Border Element helps organizations solve their communications network challenges in three simple steps: saving, simplifying, and setting up for the future. They save by efficiently interconnecting networks, they simplify by streamlining services aggregation, and they prepare for the future by extending their capabilities to include collaborative services. The role of Cisco Unified Communications Manager Session Management Edition here is to centralize SIP trunking, simplify dial plan management, integrate and pull together disparate PBX's, and integrate the environment with other applications

Centralized SIP trunking provides cost savings through toll savings, reduced Primary Rate Interface (PRI) circuits, lower maintenance costs, and lower equipment costs. Centralized SIP trunking also simplifies administration by avoiding having to manage lots of time-division multiplexing (TDM) gateways. They can be brought into a single location for manageability rather than left as many discrete gateways. Plus, existing Cisco PSTN gateways can be repurposed by Cisco Unified Border Element (through a software upgrade) to serve as IP gateways.

Cisco Unified Communications Manager Session Management Edition also greatly simplifies dial-plan management. Instead of having to develop complex routing within and among each individual PBX, they can now point to the central Cisco Unified Communications Manager Session Management Edition core, leaving all routing to be managed at the session management layer. Cisco can also use the Service Advertisement Framework (SAF) to provision at the PBX as well as the Cisco Unified Communications Manager Session Management Edition layer, enabling automatic dial-plan configuration, saving administration costs.

Cisco Unified Communications Manager Session Management Edition also integrates and pulls together disparate PBX's, enabling a single throughput point for IP access, and delivering the management benefits mentioned above. Plus, SIP headers within various systems (PBX's) are normalized and become transparent to the other PBX's, enabling interoperability. We're also performing testing, certification and use of standards (such as SIP, QSIG) based protocols to drive easier interoperability, integration, and deployment.

And, by integrating with traditional PBXs as well as IP-based systems, Cisco Unified Communications Manager Session Management Edition provides an elegant path to evolve or migrate systems that would otherwise be extremely difficult, or expensive to upgrade. Also, these applications can be used not just by Cisco PBXs but by any PBX in the system, extending these to more users. And, beyond voice, this platform is now a communications platform that is capable of deploying existing and future applications, including rich collaborative applications such as centralized recording, Web 2.0, and quad, enabling all-enterprise usage.

And finally, Cisco Storage Media Encryption (SME) integrates with the revolutionary Cisco IPS Manager Express (IME) for transparently extending these collaborative services to business partners, customers, and other organizations.

Selected Part Numbers and Ordering Information

SME-SESSION-LIC	Cisco Unified CM SME 8.0 Top Level Part Number

For More Information
http://www.cisco.com/go/unifiedcmsme

Cisco IP Communicator

Cisco IP Communicator—a software-based application that delivers enhanced telephony support through the PC—is designed to meet diverse customer needs by serving as a supplemental telephone when traveling, a telecommuting device, or as a primary desktop telephone. With Cisco IP Communicator, remote users don't just take their office extension with them; they also enjoy access to the same familiar phone services that they have in the office.

Ideal for Companies That Need These Features

Cisco IP Communicator
- A softphone that provides high-quality voice calls and extensive telephony features
- A supplemental telephone that provides access to phone extensions and services outside the office

Key Features and Benefits

- Works with Cisco Unified Video Advantage: Cisco IP Communicator brings video telephony to the telecommuter's and mobile worker's communication experience. Available video is automatically displayed.
- Easy to use: Cisco IP Communicator 7.x offers many of the features supported with Cisco Unified IP phones, including support for support for (Extensible Markup Language [XML]) applications, and call recording & silent monitoring capabilities for efficient recording of calls and monitoring of contact center agents. The application provides auto-detection of Cisco VPN Clients.
- Offers premium voice quality: Cisco IP Communicator has an Audio Tuning wizard for setting audio levels properly, advanced-jitter-buffer and packet-loss-concealment algorithms, and echo suppression and noise cancellation. In addition, Cisco IP Communicator 7.x introduced support for internet Low Bit Rate Codec (iLBC), for enhanced voice quality for remote workers with low bandwidth considerations, as well as G.722 wideband audio codec to enhance which enhances voice quality and provides a clearer and richer audio experience.
- Easy to manage: Administration is unified with Cisco Unified IP Phones and automatic software upgrades; system administrators can provision Cisco IP Communicator as they would any other Cisco Unified IP Phone.

Selected Part Numbers and Ordering Information

SW-IPCOMM-E1	Cisco IP Communicator Software
SW-CCM-UL-IPCOMM-E	Station User License for Cisco Unified Communications Manager
IPCOMM7-SW	Cisco IP Communicator 7.0x
IPCOMM7-LIC	Cisco IP Communicator 7.0x User License

For More Information
http://www.cisco.com/go/ipcommunicator

Cisco Unified IP Phones 6900 Series

The Cisco Unified IP Phones 6900 Series of business communication endpoints deliver an enhanced user experience for customers seeking cost-effective, robust voice communication services, and video communications services on selected models, in a user-and eco-friendly design.

The Cisco Unified IP Phones 6900 Series is an ideal fit for customers with investment in analog or digital communications systems today, who are interested in an IP communications solution, but seek a traditional telephony-like user experience.

The portfolio offers a range of endpoint solutions, ranging from occasional use settings, such as lobbies and hallways with the IP Phone 6901 and schoolrooms with the IP Phone 6911, to moderate communications settings for knowledge workers with the IP Phone 6921, to more active users, such as managers and administrative staff as delivered by the IP Phone 6941 and IP Phone 6961. The portfolio can be deployed in enterprise campuses, enterprise branch offices, satellite offices, and for teleworkers.

Video Communications are supported on the Cisco Unified IP Phones 6900 Series with adoption on Cisco Unified Video Advantage 2.2 and the VT Camera III. The Cisco Unified IP Phones 6900 Series delivers the high-quality audio communications while an adjoining PC monitor support the VT Camera III and Unified Video Advantage application for video communication services in this solution architecture. Video Communications is available on selected Cisco Unified IP Phones 6900 Series endpoints.

The Cisco Unified IP Phones 6900 Series also brings earth-friendly enhancements to reduce power consumption and increase energy savings for customers. These endpoints take advantage of recyclable and reground plastics and in those models with displays, offer a deep-sleep mode option, which reduces power consumption in off-work hours making them a great fit for customers with green initiatives.

The Cisco Unified IP Phones 6900 Series comes in the choice of two colors, charcoal and arctic white, and two handset styles for increased comfort and flexibility.

Key Features and Benefits

- Backlit, antiglare, pixel-based, graphical monochrome displays offer readability and scrollable access to calling features and text-based XML applications on selected models.
- Tri-color illuminated line and feature keys provide quick call status indication.
- Four dynamic soft-label keys and a scroll toggle-bar present calling and navigation options on selected models.
- Fixed keys for common telephony functions such as mute, hold, conference, transfer, messaging, directories, redial and call waiting (fixed keys vary by endpoint model).
- Rounded ergonomic keys increase tactile feel and accuracy.
- Integrated 10/100 Ethernet switch to collocate a multimedia PC and reduce cabling infrastructure costs.
- Full-duplex speakerphone and integrated headset ports (selected models).
- Deep-sleep power option for savings in power consumption during off-work hours (on endpoint models with displays).
- Support Cisco Skinny Client Control Protocol (SCCP).
- G.711a, G.711, G.729a, G.729b, and G.729ab audio-compression codecs.
- Software upgrade support (IP Phone firmware) is provided through a Trivial File Transfer Protocol (TFTP) server.

Specifications

Feature	Cisco 6901	Cisco 6911	Cisco 6921
Integral Switch	Not applicable	10/100	10/100
Display	Not applicable	Not applicable	396 x 81 pixel backlit anti-glare monochrome
Programmable (line) keys	1	1	2
Programmable (soft) keys	Not applicable	Not applicable	4
Speakerphone	Full-duplex	Full-duplex	Full-duplex
Headset port	No	No	Yes
Unified Video Advantage	No	Yes	Yes
Wideband audio	No	No	No
iLBC support	Yes (9.1(1) IP Phone firmware required)	Yes (9.1(1) IP Phone firmware required)	Yes (9.1(1) IP Phone firmware required)
2-way Rocker with Select Key	No	No	Yes
XML application	No	Yes - limited	Yes - limited
MIDlet-enabled applications	No	No	No

Extension mobility	Yes	Yes	Yes
Signaling protocol	SCCP SIP (fall 2010)	SCCP/ SIP (fall 2010)	SCCP SIP (fall 2010)

Feature	Cisco 6941	Cisco 6961
Integral Switch	10/100	10/100
Display	396 x 162 pixel backlit anti-glare monochrome	396 x 81 pixel backlit anti-glare monochrome
Programmable (line) keys	4	12
Programmable (soft) keys	4	4
Speakerphone	Full-duplex	Full-duplex
Headset port	Yes	Yes
Wideband audio	No	No
Unified Video Advantage	Yes	Yes
iLBC support	Yes (9.1(1) firmware required	Yes (9.1(1) firmware required
2-way Rocker with Select Key	Yes	Yes
XML application	Yes - limited	Yes - limited
MIDlet-enabled applications	No	No
Extension mobility	Yes	Yes
Signaling protocol	SCCP SIP (fall 2010)	SCCP SIP (fall 2010)

Selected Part Numbers and Ordering Information

CP-6901-C-K9=	Cisco Unified IP Phone 6901, Charcoal, Standard Handset
CP-6901-W-K9=	Cisco Unified IP Phone 6901, Arctic White, Standard Handset
CP-6901-CL-K9=	Cisco Unified IP Phone 6901, Charcoal, Slimline Handset
CP-6911-WL-K9=	Cisco Unified IP Phone 6901, Arctic White, Slimline Handset
CP-6911-C-K9=	Cisco Unified IP Phone 6911, Charcoal, Standard Handset
CP-6911-W-K9=	Cisco Unified IP Phone 6911, Arctic White, Standard Handset
CP-6911-CL-K9=	Cisco Unified IP Phone 6911, Charcoal, Slimline Handset
CP-6911-WL-K9=	Cisco Unified IP Phone 6911, Arctic White, Slimline Handset
CP-6921-C-K9=	Cisco Unified IP Phone 6921, Charcoal, Standard Handset
CP-6921-W-K9=	Cisco Unified IP Phone 6921, Arctic White, Standard Handset
CP-6921-CL-K9=	Cisco Unified IP Phone 6921, Charcoal, Slimline Handset
CP-6921-WL-K9=	Cisco Unified IP Phone 6921, Arctic White, Slimline Handset
CP-6941-C-K9=	Cisco Unified IP Phone 6941, Charcoal, Standard Handset
CP-6941-W-K9=	Cisco Unified IP Phone 6941, Arctic White, Standard Handset
CP-6941-CL-K9=	Cisco Unified IP Phone 6941, Charcoal, Slimline Handset
CP-6941-WL-K9=	Cisco Unified IP Phone 6941, Arctic White, Slimline Handset
CP-6961-C-K9=	Cisco Unified IP Phone 6961, Charcoal, Standard Handset
CP-6961-W-K9=	Cisco Unified IP Phone 6961, Arctic White, Standard Handset
CP-6961-CL-K9=	Cisco Unified IP Phone 6961, Charcoal, Slimline Handset
CP-6961-WL-K9=	Cisco Unified IP Phone 6961, Arctic White, Slimline Handset

For More Information
http://www.cisco.com/go/ipphones/6900

Cisco Unified IP Phones 7900 Series

The Cisco Unified IP Phones 7900 Series is a portfolio of advanced business communications endpoints that enable organizations to increase their employee productivity by taking full advantage of collaborative services, including support for voice, video, and data applications.

The IP Phones 7900 Series portfolio offers a wide range of solutions to meet the varying needs of users within an organization. From the corporate campus to the branch office to remote teleworkers, the portfolio supports wired, wireless, and small-to-medium conference room solutions. The Cisco Unified IP Phone 7906G and 7911G endpoints address the communication needs for low-to-medium communications environments. The Cisco Unified IP Phone 7942G and 7945G endpoints address the communication needs for moderate levels of communication requirements. The Cisco Unified IP Phone 7962, 7965G and 7975G endpoints are designed to address the communication needs for more active communication requirements.

The Cisco Unified Wireless IP Phone 7921G, 7925G, and 7925G-EX are 802.11a/b/g Wireless-Fidelity (Wi-Fi) IP Phones that are designed for mobile communications within a campus or when at home with VPN network access.

The IP Phones 7900 Series portfolio supports multiple call appearance per line. This empowers users to have multiple call sessions, navigated through the use of the rocker or navigation cluster on a single line appearance on the 7900 Series phone.

Key Features and Benefits

- Touchscreen support on Cisco Unified IP Phone 7975G
- Dynamic softkeys for call features and functions
- Support for endpoint applications including XML, MIDlets, Cisco Unified Communications Widgets, and Cisco Unified Application Environment on selected models
- Video communications supported on selected models with Cisco Unified Video Advantage (CUVA) and the VT Camera III.
- Automatic phone discovery, VLAN configuration, and registration
- Quality of service (QoS) through support of 802.1Q/p, in addition to configurable Differentiated Services (DiffServ) and type of service (ToS)
- Voice Activity Detection (VAD), silence suppression, comfort-noise generation, and error concealment
- G.711a, G.711u, and G.729ab audio-compression codec support; selected models also support the G.722 wideband codec and the Internet Low Bit-Rate Codec (iLBC)
- IP Phone software (firmware) upgrade support through a Trivial File Transfer Protocol (TFTP) server
- Integrated inline power support, which allows the phone to receive power over the LAN

Specifications

Feature	Cisco 7911G	Cisco 7931G	Cisco Conf. Station 7937G
Integral Switch	10/100	10/100	No
Display	192x64 monochrome	192x64 graphical, monochrome, backlit	Pixel-based
Programmable (line) keys	0	24	0
Programmable (soft) keys	4	4	4
Speakerphone	Yes (listen only)	Yes	Yes
Headset port	No	Yes	No
Wideband audio	Limited	Limited	Yes
iLBC support	Yes	Yes	No
"5-way" navigation cluster	No	No	No
XML applications	Yes	Yes	Yes
MIDlet applications	No	No	No
Extension mobility	Yes	Yes	Yes
Unified Video Advantage	Yes	Yes	No
Signaling protocol	SCCP/SIP	SCCP/SIP	SCCP
Feature	Cisco 7942G	Cisco 7945G	Cisco 7962G
Integral Switch	10/100	10/100/1000	10/100

Display	4-bit grayscale, 5"	Digital, 16-bit graphical backlit TFT Color, 5"	4-bit grayscale, 5"
Programmable (line) keys	2-lighted	2-lighted	6-lighted
Programmable (soft) keys	4	4	4
Speakerphone	Yes	Yes	Yes
Headset port	Yes, wideband support	Yes, wideband support	Yes, wideband support
Wideband audio	Yes	Yes	Yes
iLBC support	Yes	Yes	Yes
"5-way" navigation cluster	No	Yes	No
XML applications	Yes	Yes	Yes
MIDlet applications	Yes	Yes	Yes
Extension mobility	Yes	Yes	Yes
Unified Video Advantage	Yes	Yes	Yes
Signaling protocol	SCCP/SIP	SCCP/SIP	SCCP/SIP
Feature	**Cisco 7965G**	**Cisco 7975G**	**Cisco 7921G/7925G/ 7925G-EX**
Integral Switch	10/100/1000	10/100/1000	N/A
Display	Digital, 16-bit graphical backlit TFT Color, 5"	Digital, 16-bit graphical backlit TFT Color, 5.6"	Digital, 16-bit graphical backlit TFT Color, 2"
Programmable (line) keys	6-lighted	8-lighted	N/A
Programmable (soft) keys	4	5	2
Speakerphone	Yes	Yes	Yes
Headset port	Yes, wideband support	Yes, wideband support	Yes
Wideband audio	Yes	Yes	Yes
iLBC support	Yes	Yes	Yes
"5-way" navigation cluster	Yes	Yes	Yes
XML applications	Yes	Yes	Yes
MIDlet applications	Yes	Yes	No
Extension mobility	Yes	Yes	Yes
Unified Video Advantage	Yes	Yes	No
Signaling protocol	SCCP/SIP	SCCP/SIP	SCCP

Selected Part Numbers and Ordering Information

CP-7971G	Cisco Unified IP Phone 7975G
CP-7965G	Cisco Unified IP Phone 7965G
CP-7962G	Cisco Unified IP Phone 7962G
CP-7945G	Cisco Unified IP Phone 7945G
CP-7942G	Cisco Unified IP Phone 7942G
CP-7925G-EX	Cisco Unified Wireless IP Phone 7925G-EX
CP-7925G	Cisco Unified Wireless IP Phone7925G
CP-7921G	Cisco Unified Wireless IP Phone7921G
CP-7931G	Cisco Unified IP Phone 7931G
CP-7911G	Cisco Unified IP Phone 7911G
CP-7937	Cisco Unified IP Conferencing Station 7937G

Cisco Unified IP Phones 8900 Series

Organizations seeking ways to advance collaboration should give consideration to the Cisco Unified IP Phones 8900 Series. These advanced professional media endpoints are ideal for knowledge professionals, managers, and executives who seek a superior multimedia experience.

The Cisco Unified IP Phones 8900 Series introduces the Cisco Unified IP Phone 8961. The IP Phone 8961 delivers a high-performance multimedia communications experience, with support for high-definition voice (HD voice), high-resolution graphical color displays, and a broad portfolio of XML and MIDlet applications that deliver business value by helping transform business processes, reduce costs, and boost employee productivity. Standard USB 2.0 ports enhance the user experience, with added convenience and flexibility, by supporting off-the-shelf 2.0 USB peripherals such as USB wired headsets.

With the Cisco Unified IP Phones 8900 Series, Cisco continues its ongoing commitment to green solutions. Cisco uses reground and recyclable plastics to manufacture the Cisco Unified IP Phones 8900 Series endpoints. Power consumption is reduced in off-hours with a deep sleep administrative option.

The Cisco Unified IP Phones 8900 Series come with the choice of two colors, charcoal and arctic white and two handset styles that increase comfort. An optional IP Color Key Expansion Module provides scalability and investment protection for the IP Phone with additional line/feature key appearances.

Key Features and Benefits

- Enhanced viewing—Large, backlit, vibrant high-resolution, fully adjustable color display enhances viewing under a variety of lighting conditions.
- One standard USB 2.0 port supports USB headsets for greater choice and convenience.
- Crisper, clearer audio performance—High-definition voice (HD voice) delivers superior audio performance with HD voice headset, handset, and speaker support.
- Supports one Unified IP Color Key Expansion Module, offering additional scalability and cost-effectiveness with 36 line/feature key appearances per module
- Clean, uncluttered communications—An elegant user-friendly design makes feature access easy.
- Tri-color illuminated LED line, feature, and session keys provide at-a-glance indication of caller session status, increasing productivity.
- Energy cost savings—In off-hours, a deep-sleep power option reduces power consumption compared to the endpoint in active state during the work day.
- Reduced infrastructure costs—Integrated switch ports support a IEEE 10/100/1000 high-speed network connection and co-location of a multimedia PC.
- Rounded keys deliver an enhanced tactile feel that improves accuracy in interaction.
- Streamlined user experience—The phone has fixed keys for commonly used telephony functions such as conference, transfer, and hold.

Specifications

Feature	Cisco 8961
Integral Switch	10/100/1000
Display	5" diagonal,640 x 480, VGA, graphical, anti-glare, backlit, high-resolution color display
Programmable (line) keys	5 with support for multiple appearance per line
Session keys	5
Programmable (soft) keys	4
Speakerphone	Yes (full duplex)
Headset port	Yes
High-definition audio	Yes (Speaker, handset and headset)
IP Color Key Expansion Module	Yes (supports 1 module for 36 additional appearances)
iLBC support	Yes
"5-way" navigation cluster	Yes
XML applications	Yes
MIDlet applications	Yes
Extension mobility	Yes
Signaling protocol	SIP

Selected Part Numbers and Ordering Information

CP-8961-C-K9=	Cisco Unified IP Phone 8961, Charcoal, Standard Handset
CP-8961-W-K9=	Cisco Unified IP Phone 8961, Arctic White, Standard Handset
CP-8961-CL-K9=	Cisco Unified IP Phone 8961, Charcoal, Slimline Handset
CP-8961-WL-K9=	Cisco Unified IP Phone 8961, Arctic White, Slimline Handset

For More Information

Cisco Unified IP Phones 9900 Series

With 20 hours of new content uploaded to YouTube every minute and enterprise employees watching 4.6 hours of enterprise video each month, it's not a matter of **if** video will make its way into your organization, but **when**. Video is personal and efficient, and with the Cisco Unified IP Phones 9900 Series, an advanced collaborative media endpoint portfolio, your employees can take advantage of a full-suite of multimedia features and capabilities, including video delivered directly to/from your IP Phone, in a design that is elegant, user-and-eco-friendly.

The Cisco Unified IP Phones 9900 Series supports interactive, high-performance business video with a USB powered Cisco Unified Video Camera that provides full-screen, two- and multiparty H.264 standard video (up to 30 frames per second).

The Cisco Unified IP Phones 9900 Series' advanced multimedia communications capabilities are an ideal solution for knowledge professionals, managers, and executives. With the Cisco Unified IP Phones 9900 Series, you can

- Elevate and personalize communications, improving the quality and speed of decisions
- Enhance collaboration between geographically dispersed teams and workgroups to accelerate team performance
- Deliver personalized training on-demand, condensing sales cycles
- Enable busy executives to meet "face-to-face" without ever leaving their offices
- Scale compelling, integrated collaboration experiences across your organization, quickly and cost-effectively
- Collaborate securely within and between businesses.

The Cisco Unified IP Phones 9900 Series introduces the Cisco Unified IP Phone 9971 and the Cisco Unified IP Phone 9951 endpoints to the Cisco Unified IP Phone portfolio. Both endpoints deliver a high-performance multimedia communications experience, with support for High-definition voice (HD voice), high-resolution graphical, backlit color displays, Bluetooth 2.0 profiles for added convenience and flexibility. A broad portfolio of XML and MIDlet applications that deliver business value by helping transform business processes, reduce costs, and boost employee productivity are also supported. Standard USB 2.0 ports on both models enhance the user experience by supporting off-the-shelf 2.0 USB peripherals, such as USB wired headsets.

The Cisco Unified IP Phone 9971 adds full touchscreen capability for advanced user interaction along with 802.11a/b/g Wireless Fidelity (Wi-Fi) integration, which delivers greater return on investment for customers who have a Cisco Unified Wireless Network.

Both 9900 Series endpoints support multiple call appearances per line. The Cisco Unified IP Phone 9971 supports six line keys with tri-color LED's, the Cisco Unified IP Phone 9951 supports five line keys with tri-color LED's. Session keys provide call details about each session in progress and assist users in navigating between sessions. Administrators have the option to assign which row of keys are designated as line keys and the row designated as session keys.

With the Cisco Unified IP Phones 9900 Series, Cisco continues its ongoing commitment to green solutions. Reground and recyclable plastics are used in manufacture of the Cisco Unified IP Phones 9900 Series endpoints and the portfolio reduces power consumption in off-hours vs. active use during the workday with a deep-sleep administrative option.

The Cisco Unified IP Phones 9900 Series come with the choice of two colors, charcoal and arctic white and two handset styles that increase comfort.

Key Features and Benefits

- Large, backlit, vibrant high-resolution, graphical, fully backlit, and adjustable color displays enhance viewing under a variety of lighting conditions.
- Supports the Cisco Unified Video Camera, a USB-powered peripheral that provides H.264 two-way and multi-party video communications up to 30 frames-per-second (multi-party video requires support from a Multipoint Control Unit).
- USB 2.0 ports support USB peripherals, including the Cisco Unified Video Camera and USB headsets for greater choice and convenience.
- Bluetooth 2.0 profiles supports standard Bluetooth headsets for added convenience and flexibility at the workspace.

- 802.11a/b/g wireless-fidelity integration (Wi-Fi) for greater return on investment and reduced cabling infrastructure in Cisco Unified Wireless Networks (IP Phone 9971 only).
- Crisper, clearer audio performance—High-definition voice (HD voice) delivers superior audio performance with HD voice headset, handset, and speaker support.
- Support of up to three IP Color Key Expansion Modules, offering additional scalability and cost-effectiveness with an additional 36 line/feature key appearances per module (actual number of modules is endpoint model dependent).
- An elegant user-friendly design makes feature access easy.
- Support for multiple sessions per line—Tri-color illuminated LED line, feature, and session keys provide at-a-glance indication of caller session status, increasing productivity.
- Energy cost savings—In off-hours, a deep-sleep power option reduces power consumption compared to the endpoint in active state during the work day.
- Reduced infrastructure costs—Integrated switch ports support a IEEE 10/100/1000 high-speed network connection and co-location of a multimedia PC, so PC traffic can run through the switch port of the phone and only one cable drop is required back to the wiring closet.
- Rounded keys deliver an enhanced tactile feel that improves accuracy in interaction.
- Streamlined user experience—The phone has fixed keys for commonly used telephony functions such as conference, transfer, and hold.

Specifications

Feature	Cisco 9971	Cisco 9951
Integral Switch	10/100/1000	10/100/1000
Display	5.6" diagonal, 640 x 480, VGA, graphical, anti-glare, backlit, high-resolution touchscreen color display	5" diagonal, 640 x 480, VGA, graphical, anti-glare, backlit, high-resolution color display
Programmable (line) keys	6	5
Session keys	6	5
Programmable (soft) keys	4 (touchscreen based)	4
Video Communications	Yes with Cisco Unified Video Camera (H.264 standard, 24fps VGA, 30fps CIF, SIF formats)	Yes with Cisco Unified Video Camera (H.264 standard, 24fps VGA, 30fps CIF, SIF formats)
Speakerphone	Yes (full duplex)	Yes (full duplex)
USB 2.0 ports	2 (supports wired and wireless headsets, Unified Video Camera)	2 (supports wired and wireless headsets, Unified Video Camera)
Bluetooth 2.0	Yes (standard headset profiles)	Yes (standard headset profiles)
Headset port	Yes	Yes
High-definition audio	Yes (Speaker, handset and headset)	Yes (Speaker, handset and headset)
802.11a/b/g radio	Yes	No
iLBC support	Yes	Yes
"5-way" navigation cluster	Yes	Yes
XML applications	Yes	Yes
MIDlet applications	Yes	Yes
Extension mobility	Yes	Yes
Signaling protocol	SIP	SIP

Selected Part Numbers and Ordering Information

CP-9971-C-CAM-K9=	Cisco Unified IP Phone 9971, Cisco Unified Video Camera, Charcoal, Standard Handset
CP-9971-W-CAM-K9=	Cisco Unified IP Phone 9971, Cisco Unified Video Camera, Arctic White, Standard Handset
CP-9951-C-CAM-K9=	Cisco Unified IP Phone 9951, Cisco Unified Video Camera, Charcoal, Standard Handset
CP-9951-W-CAM-K9=	Cisco Unified IP Phone 9951, Cisco Unified Video Camera, Arctic White Standard Handset
CP-9971-CL-CAM-K9=	Cisco Unified IP Phone 9971, Cisco Unified Video Camera, Charcoal, Slimline Handset
CP-9971-WL-CAM-K9=	Cisco Unified IP Phone 9971, Cisco Unified Video Camera, Arctic White, Slimline Handset
CP-9951-CL-CAM-K9=	Cisco Unified IP Phone 9951, Cisco Unified Video Camera, Charcoal, Slimline Handset
CP-9951-WL-CAM-K9=	Cisco Unified IP Phone 9951, Cisco Unified Video Camera, Arctic White Slimline Handset

For More Information
http://www.cisco.com/go/ipphones/9900

Cisco SPA 500 Series IP Phones

The Cisco SPA 500 Series IP Phones are a complete portfolio of IP phones for small business with robust features that support the Cisco Unified Communications 500 Series, Cisco SPA9000 Voice System, and hosted IP telephony. The phones provide an intuitive, rich user experience with wideband audio to connect employees and offices, support for applications that enhance productivity, and encryption for enhanced security.

Key Features

- Full-featured business-class IP phone supporting Power over Ethernet (PoE)
- Monochrome or color* backlit display for ease of use, aesthetics, and onscreen applications
- Connects directly to a hosted IP telephony service or an IP private branch exchange (PBX)
- Wideband audio for unsurpassed voice clarity and enhanced speaker quality
- Easy installation and highly secure remote provisioning, as well as menu-based and web-based configuration
- Supports up to two Cisco SPA 500S 32-Button Attendant Consoles, adding up to 64 additional buttons
- Supports both Session Initiation Protocol (SIP) for Cisco SPA 9000, open source, and hosted telephony solutions and Smart Phone Control Protocol (SPCP) for Cisco Unified Communications 500 Series for Small Business
- Support for Bluetooth and WiFi*
- Play back and view personal MP3 files and photos through on-phone application (supported on the SPA 525G model only)

Specifications

Feature	Cisco SPA501G 8-line	Cisco SPA502G 1-line	Cisco SPA504G 4-line	Cisco SPA508G 8-line	Cisco SPA509G 12-line	Cisco SPA525G
Lines	8	1	4	8	12	5
Programmable Buttons	8	0	4	8	12	5
Connection for Computer on IP Phone	Yes	Yes	Yes	Yes	Yes	Yes
PoE	Yes	Yes	Yes	Yes	Yes	Yes
Display	Paper insert	Backlit monochrome	Backlit monochrome	Backlit monochrome	Backlit monochrome	High resolution color display
Bluetooth Capable	No	No	No	No	No	Yes

Selected Part Numbers and Ordering Information

SPA501G	Cisco SPA 501G-8-line IP Phone
SPA502G	Cisco SPA 502G 1-line IP Phone
SPA504G	Cisco SPA 504G-4-line IP Phone
SPA508G	Cisco SPA 508G-8-line IP Phone
SPA509G	Cisco SPA 509G-12-line IP Phone
SPA525G	Cisco SPA 525G IP Phone

For More Information

http://www.cisco.com/go/500phones

Cisco Unified Attendant Console Portfolio

The Cisco Unified Attendant Console Portfolio comprises three full-featured software-based solutions, associated with a Cisco Unified IP Phone, which are designed to enable attendant operators to accept calls, easily look up busy status and dispatch incoming calls either through blind or consultative transfers to users. The applications support the ability to prioritize call queues, such that operator attendants can address the most important queues to the business (i.e., sales, service, etc). The Cisco Unified Department Attendant Console supports up to 150 Cisco Unified IP Phones and up to two operator clients per department. The Cisco Unified Business Attendant Console supports up to 500 Cisco Unified IP Phones and up to six operator clients. The Cisco Unified Enterprise Attendant Console supports up to 100,000 Cisco Unified IP Phones and up to 25 operator clients per attendant console system.

Key Features and Benefits

Cisco Unified Department Attendant Console

- Maximum of 150 Cisco Unified IP Phones and two operator clients per department.
- Call queuing engine, busy status, as well as directory search capabilities that are integrated into the Cisco Unified Communications Manager directory.
- One call queue and three directory search options allow the department attendant to quickly find call destinations and effectively dispatch calls. These search options include last name, first name, and extension.
- Music in Queue (i.e., ability to play music to callers before they are greeted by the attendant.
- Cisco Unified IP Phones 6900 (multi-line mode only), 8900, and 9900 Series as operator endpoints.
- Cisco Unified Department Attendant Console server running in a VMware server environment.
- Windows 7 support for Cisco Unified Department Attendant Console client.
- Integrates with Cisco Unified Presence Server to provide rules-based presence in support of multiple devices and weighting per device (i.e., desk-based workers can weight their desk phone high and their mobile phone low)
- Microsoft OCS 2007 presence status support from the Cisco Unified Department Attendant Console client
- Accessibility support with third-party applications JAWS and ZoomText.
- Wait time overflow—Boosts service levels with calls being directed to a defined number after the call has been in queue for a specified period of time.
- For the operator who needs in-depth presence information, Cisco Unified Presence can be integrated with the Cisco Unified Department Attendant Console.
- Emergency mode enables redirection of calls in event of an emergency.

Cisco Unified Business Attendant Console

- Maximum of 500 Cisco Unified IP Phones and up to six operator clients per attendant console system.
- Four directory search options allow the operator to quickly find call destinations and quickly dispatch calls.
- Four directory search fields allow the operator to quickly find call destinations and quickly dispatch calls.
- Music in Queue (i.e., ability to play music to callers before they are greeted by the attendant.
- Cisco Unified IP Phones 6900 (multi-line mode), 8900 and 9900 Series as operator endpoints.
- Cisco Unified Business Attendant Console server running in a VMware environment.
- Integrates with Cisco Unified Presence Server to provide rules-based presence in support of multiple devices and weighting per device (i.e., desk-based workers can weight their desk phone high and their mobile phone low)
- Microsoft OCS 2007 presence status support from the Cisco Unified Business Attendant Console client.
- Windows 7 support for Cisco Unified Business Attendant Console client.
- Accessibility support with third-party applications JAWS and ZoomText.
- Emergency mode enables redirection of calls in event of an emergency.
- Wait time overflow—Boosts service levels with calls being directed to a defined number after the call has been in queue for a specified period of time.
- For the operator who needs in-depth presence information, Cisco Unified Presence can be integrated with the Cisco Unified Business Attendant Console.

Cisco Unified Enterprise Attendant Console

- Maximum of 100,000 Cisco Unified IP Phones and up to 25 operator clients per attendant console system
- Six directory search fields allow the operator to quickly find call destinations and quickly dispatch calls
- Utilities for installing, configuring and synchronizing the directory database simplify administration
- Music in Queue (i.e., ability to play music to callers before they are greeted by the attendant.
- Cisco Unified IP Phones 6900 (multi-line mode), 8900 and 9900 Series as operator endpoints.
- Cisco Unified Business Attendant Console server running in a VMware environment.
- Microsoft OCS 2007 presence status support from the Cisco Unified Business Attendant Console client.
- Windows 7 support for Cisco Unified Business Attendant Console client.
- Accessibility support with third-party applications JAWS and ZoomText.
- Emergency mode enables redirection of calls in event of an emergency.
- Wait time overflow—Boosts service levels with calls being directed to a defined number after the call has been in queue for a specified period of time.
- Integrates with Cisco Unified Presence Server to provide rules-based presence in support of multiple devices and weighting per device (i.e., desk-based workers can weight their desk phone high and their mobile phone low)
- Emergency mode switch enables redirection of calls in an emergency
- Night mode service based on time and day
- Supports both zoom text and JAWS screen reader for enhanced accessibility

Selected Part Numbers and Ordering Information

CUB-ATT-CON	The Cisco Unified Business Attendant Console is ordered on a per-operator client basis. Ordering the Cisco Unified Business Attendant Consoles requires the use of the Cisco Dynamic Configuration Tool. Input "CUB-ATT-CON=" on the Dynamic Configuration Tool to begin the configuration, and then select from 1 to 6 Cisco Unified Business Attendant Consoles.

CUE-ATT-CON	The Cisco Unified Enterprise Attendant Console is ordered on a per-operator client basis. Ordering the Cisco Unified Enterprise Attendant Console requires the use of the Cisco Dynamic Configuration Tool. Input 'CUE-ATT-CON=' on the Dynamic Configuration Tool to begin the configuration and then select from 1 to 25 Cisco Unified Enterprise Attendant Consoles.
CUD-ATT-CON	The Cisco Unified Department Attendant Console is ordered on a per-department administrator (operator client) basis. A maximum of two department administrators are supported per department with 150 IP phones. When ordering, the first client includes the software license for the Cisco Unified Department Attendant Console server. Ordering the Cisco Unified Department Attendant Consoles requires the use of the Cisco Dynamic Configuration Tool. Input "CUD-ATT-CON=" on the Dynamic Configuration Tool to begin the configuration, and then select from 1 to 10 Cisco Unified Department Attendant Consoles.

For More Information

http://www.cisco.com/go/ac

Cisco Emergency Responder

Cisco Emergency Responder enhances emergency calling from Cisco Unified Communications Manager. It helps ensure that Cisco Unified Communications Manager sends emergency calls to the appropriate Public Safety Answering Point (PSAP) and then helps the PSAP identify the caller's location and, if necessary, return the call.

Key Features and Benefits

- Cisco Emergency Responder automatically tracks IP phone locations by their MAC or IP addresses, eliminating the need for administrators to update location when an IP phone is relocated.
- Cisco Emergency Responder provides instructions to Cisco Unified Communications Manager to route emergency calls to a public-switched-telephone-network (PSTN) gateway capable of reaching the responsible Public Safety Answering Point (PSAP) for the caller's location.
- Cisco Emergency Responder identifies the caller's location to local exchange carriers (LECs) and PSAPs, replacing the calling-party number associated with an emergency call with one that corresponds to the caller's location, eliminating the need to update the Automatic Location Information (ALI) database when an IP phone is relocated.
- Cisco Emergency Responder integrates with Intrado V9-1-1 service, centralizing and automating the initial administration of Emergency Location Identification Numbers (ELINs) and Emergency Response Locations (ERLs) for on-premises users, and facilitating emergency call completion with user-entered location information for off-premises users.
- Cisco Emergency Responder facilitates PSAP callback to reach the most recent callers from each location, including callers from stations without direct-inward-dialing (DID) numbers.
- Cisco Emergency Responder provides voice, web and email alerts to customer security personnel, enabling them to assist emergency callers immediately, and to direct fire, police, or ambulance services when they arrive.
- Cisco Emergency Responder is a software appliance that simplifies software installation and upgrade and enhances system security and stability.

Specifications

Feature	Cisco Emergency Responder			
Supported Platform	Cisco 7800 Series Media Convergence Servers			
Software Compatibility	Cisco Unified Communications Manager Cisco Unified Operations Manager More information about specific models and releases supported is available at: http://www.cisco.com/en/US/products/sw/voicesw/ps842/prod_release_notes_list.html.			
Product Compatibility	Cisco Unified IP Phones 7902G, 7905G, 7910G, 7910G+SW, 7911G, 7912G, 7940G, 7941G, 7941G-GE, 7942G, 7945G, 7960G, 7961G, 7961G-GE, 7962G, 7965G, 7970G, 7971G-GE, 7975G, 7985G; Cisco Unified Wireless IP Phones 7920, 7921 (IP-subnet-based tracking only); Cisco Unified IP Conference Stations 7935, 7936; Cisco Unified SIP Phone 3911, Cisco Unified Personal Communicator; Cisco IP Communicator; Cisco IP Softphone (IP-subnet-based tracking only); Cisco ATA 180 Series analog telephone adaptors (manual configuration only); Cisco VG 200 Series analog phone gateways (manual configuration only); Cisco Catalyst Express 500, Express 520, 2900 XL, 2940, 2950, 2960, 2970, 3500XL, 3550, 3560, 3560-E, 4000, 4500, 4500-E, 4900, 5000, 5500, 6000, 6500 and 6500-E Series LAN switches; Cisco Ethernet Switching Network Modules in Cisco 3700 Series Multiservice Access Routers, 2800 and 3800 Series Integrated Services Routers. More information about specific models and releases supported is available at: http://www.cisco.com/en/US/products/sw/voicesw/ps842/prod_release_notes_list.html.			

System Capacity	Cisco MCS 7816	Cisco MCS 7825	Cisco MCS 7835	Cisco MCS 7845
Automatically Tracked Phones	6000	12,000	20,000	30,000
Manually Configured Phones	1000	2500	5000	10,000

Roaming Phones (per Cisco Emergency Responder Cluster)	600	1200	2000	3000
Switches	200	500	1000	2000
Switch Ports	12,000	30,000	60,000	120,000

For More Information

http://www.cisco.com/go/cer

Cisco Intercompany Media Engine

Cisco Intercompany Media Engine is a revolutionary new product that enables true boundaryless communications among business partners and customers. The idea is to make communications among separate companies and organizations as effortless and smooth as it is within an individual company. So, whether you and your customer or partner are located within the same company or in separate companies, the ease, efficiency, and overall experience of communicating with each other will be exactly the same. Our approach works with the phones you are already using, the numbers you are already dialing, the contact lists you have already entered, and the speed dials you are used to.

One of the most exciting capabilities available immediately is communication through rich media. High-definition audio, video, and high-definition video have proven to greatly enhance the effectiveness of human collaboration, and Cisco has been on the forefront of delivering solutions for these media. Yet today, it can be extremely cumbersome, or impossible, for companies to communicate outside of their organizations through high-definition audio or video. Now, with Cisco IME, these experiences can be shared among business partners across company lines, all with security, quality, reliability, and ease of use.

With respect to ease of use, Cisco Intercompany Media Engine was developed with the dual objective of requiring minimal effort to administer as well as zero effort to use. The self-learning feature is a good example. You learn new routes simply by calling your business partner who has Cisco Intercompany Media Engine. Neither the administrator nor you must enter this route. You simply dial your business partners as you normally would. And, from that point on, you dial your partner as you would normally dial a co-worker at your own company. No administrator help is required, and you are not required to do anything more than your usual process. And, from the first call and after, the process is easier, because Cisco Intercompany Media Engine has learned the route and has now integrated the partner into the Cisco Intercompany Media Engine Network, where everyone is connected and interaction is transparent and consistent, as though everyone is in the same company.

Although easily collaborating with customers and partners through rich media is compelling, it is just the start. The possibilities for using Cisco Intercompany Media Engine to best advantage to deliver innovative capabilities, experiences, and applications to be shared among partners are limitless. Intercompany capabilities such as directory access; one-click collaboration through Cisco WebEx meeting applications; instant availability status; instant virtual business card exchange; and application interactive prompts, such as interactive voice response (IVR)-delivered softkeys, are just a few of the array of Cisco Intercompany Media Engine capabilities to come.

To ensure an enterprise-grade solution, Cisco Intercompany Media Engine has security, efficiency, and quality built in. The security plus spam blocking of Cisco Intercompany Media Engine address multiple security concerns, whereas Cisco IME uses both SIP and PSTN to provide network efficiencies and cost savings, as well call-quality assurance.

Key Features and Benefits

- Lets partners use calling features that are available between clusters (except extension mobility)
- Learns new routes, through calls to any business partner who participates in the Cisco Intercompany Media Network
- Offers encrypted signaling and media for all Cisco Intercompany Media Engine calls between partners
- Provides a high level of security, plus spam blocking, to help prevent mining for callable numbers belonging to your enterprise
- Reduces gateways and overhead, by moving calls from PSTN to direct SIP trunks over the Internet or an extranet

Selected Part Numbers and Ordering Information

IME-7825-80	Cisco Intercompany Media Engine 8.0 7825 Part Number
IME-7845-80	Cisco Intercompany Media Engine 8.0 7845 Part Number

For More Information

http://www.cisco.com/go/b2buc

Cisco Unified Survivable Remote Site Telephony

Cisco Unified Survivable Remote Site Telephony (SRST) provides critical backup telephony functions at remote branch offices when connectivity to the centrally located Cisco Unified Communications Manager fails (that is, the WAN link is interrupted). During WAN outage the Cisco Unified SRST-enabled router provides robust telephony services (including off-net calls to 911). This product is ideal for enterprise organizations looking to cost-effectively deploy IP telephony in their branch-office locations. Cisco Unified SRST is available on the Cisco 880 Series, 1861, 2800 Series, and 3800 Series Integrated Services Routers, 2900 Series and 3900

Series Integrated Services Routers Generation 2, and the Cisco Catalyst 6500 Series Switches using the Cisco Communications Media Module (CMM).

Key Features and Benefits

- Business resiliency is achieved through redundant, localized call processing with intelligent and automatic failover configuration; no manual IT or telecom intervention is required.
- This single appliance device is ideal for routing, security, public switched telephone network (PSTN) gateway services, and call control during WAN outages.
- Cisco Unified SRST supports all Cisco Unified IP Phones, supporting 8 to 1500 phones per platform.
- All common PSTN interfaces and protocols are supported, in addition to support for both internal and external calling during failover with calls maintained during failover and fall-back.
- Voicemail is supported during WAN outages with local Cisco Survivable Remote Site Voicemail or centralized Cisco Unity unified messaging through the PSTN.

Selected Part Numbers and Ordering Information

SRST Platform Density and Feature License*			
Part Number	**Part Number (spare)**	**Platform**	**Number of Phones Supported**
Included	Included	Cisco 880	Up to 4
Included	Included	Cisco 1861	Up to 15
FL-SRST-25	FL-SRST-25=	Cisco 2801	Up to 25 phones
FL-SRST-50	FL-SRST-50=	Cisco 2821	Up to 50 phones
FL-SRST-100	FL-SRST-100=	Cisco 2851	Up to 100 phones
FL-SRST-250	FL-SRST-250=	Cisco 3845	Up to 250 phones
***	***	Cisco 3845	Up to 730 phones
FL-SRST-480	FL-SRST-480=	Cisco Catalyst 6500 Communication Media Module	Up to 336 phones**

* The number of phones supported by SRST have been changed to multiples of 5 starting with Cisco IOS Software Release 12.4(15)T3.
** The Cisco Catalyst 6500 Series CMM supports Cisco Unified SRST 4.0 with Cisco IOS Software Release 12.4, and Cisco Unified SRST 2.1 with Cisco IOS Software Release 12.2(13)ZC.
*** There are no corresponding part numbers, but you can purchase multiple parts to reach the desired phone count.

For More Information

http://www.cisco.com/go/srst

Cisco Unified Communications Services

Services delivered by Cisco and our partners, offers a comprehensive portfolio of services to help prepare, maintain, and optimize your Cisco Unified Communications solution.

Cisco SMARTnet support is available for all your hardware products. Cisco Essential Operate Service (ESW) is available for all your software Cisco products. The combination of hardware and software services is critical to optimizing product performance.

For more information about Cisco Unified Communications Services, visit http://www.cisco.com/go/ucservices.

Messaging

Cisco WebEx Connect

Cisco WebEx Connect is an enterprise-class, on-demand unified communications client that delivers enterprise instant messaging, rich presence, and team spaces to bring people, data, and processes together. WebEx Connect delivers this through software-as-a-service, meaning no hardware to deploy, no capital expenditures and a much lower cost of maintenance and administration.

Ideal for Companies That Need These Features

Cisco WebEx Connect
- Unified communications and collaboration
- Rich presence and enterprise instant messaging

Key Features and Benefits

- One unified interface for business collaboration—Users can work with others as if they are in the same room, allowing them to make informed decisions in real time using rich presence, enterprise IM, video, voice over IP (VoIP), desktop sharing, and chat features. Integration with Cisco Unified Communications Solutions delivers transparent communication and collaboration.
- Cross-company collaboration—Users can work closely with colleagues, partners, or customers inside and outside your organization. They can create virtual team spaces where they can access shared assets instantly from any computer, including documents, and persistent discussions,
- Dynamic end-user collaboration without giving up control—Administrators can add, update, or deactivate users easily with batch functions and manage enterprise usage by creating any number of domains and subdomains.
- Avoidance of added infrastructure—Speed deployment and reduce maintenance costs by taking advantage of the Cisco WebEx Collaboration Cloud, a private global network that provides security, reliability, and scalability on demand. There is no hardware to purchase, maintenance or upgrade costs, and no long software deployment cycles.
- Security and accreditation—The Cisco WebEx Collaboration Cloud delivers data content security and uses Secure Sockets Layer (SSL) and Advanced Encryption Standard (AES) encryption; the application is audited against Sas 70-Type II.

For More Information

http://www.webex.com/enterprise/webex-connect.html

Cisco WebEx Mail

Cisco WebEx Mail brings enterprise-grade hosted e-mail to companies of all sizes without the hassles and high costs inherent with on-premise solutions. Cisco WebEx Mail offers native Microsoft Outlook compatibility, high availability for all users, 5 or 35 GB mailbox size, full BlackBerry and Microsoft ActiveSync support, messaging security powered by Cisco IronPort, and next-generation collaboration capabilities.

With Cisco WebEx Mail, organizations can take advantage of significant cost savings without disruptions. Employees continue using Outlook without the need for IT to deploy or maintain a plug-in. Cisco WebEx Mail fits the needs of corporate environments today and also bridges next-generation collaboration through an extensible client and server platform.

Ideal for Companies That Need These Features

Cisco WebEx Mail
- Large mailboxes
- Native Outlook support
- High availability for all users
- BlackBerry (BES) and ActiveSync support
- Full-feature webmail
- Interoperability with existing directory, archival, and DLP solutions
- Next-generation collaboration features integrated with e-mail

Key Features and Benefits

- Native Microsoft Outlook compatibility—Cisco WebEx Mail supports Outlook 2003, 2007, and 2010 natively, without the need for any client plug-in that can create desktop support issues. Users get the full Outlook capabilities they expect, including calendars, contacts, public folders, and notes. Cisco WebEx Mail servers "speak" MAPI (Outlook's Messaging API) so future versions of Outlook will also be supported.
- Large mailboxes—Each user account starts with 5 GB mailbox storage, with the ability to upgrade to 35 GB. By eliminating restrictive quotas, IT gains better control of company data because users will not need to move files to personal storage (PSTs) or delete e-mails to recover space.
- Optimized for mobility—Cisco hosts BlackBerry Enterprise Server (BES) and ActiveSync servers in the cloud to natively support BlackBerry, iPhone, Microsoft Windows Mobile, and Android devices. As a result, Cisco WebEx Mail allows you to cost-effectively extend mobile e-mail services throughout your organization without losing performance or administrative control. Instantly set up new mobile users and perform remote data wipes through the Cisco WebEx Mail administrative console.
- Maximum data security and privacy—Data transport between Microsoft Outlook, mobile, and web clients and the WebEx Collaboration Cloud are encrypted using SSL (or equivalent HTTPS). To help ensure data privacy, customer data is not readable or accessible at the data center. Cisco data centers, data center personnel, and security processes regularly undergo strict third-party security audits and have achieved SAS-70 Type II compliance.
- Advanced anti-spam and anti-virus—The inbound and outbound mail stream is protected by Cisco IronPort, the leading enterprise e-mail security solution. Cisco IronPort provides better than 99% filtering accuracy and fewer than one in one million false positives. IronPort AS/AV is bundled with Cisco WebEx Mail so you no longer need to purchase or manage a separate solution to filter out malicious content.
- High availability—Cisco WebEx Mail offers an SLA-backed 99.9% uptime guarantee. Redundant systems are deployed within each Cisco data center to enable local failover, avoiding any single point of failure. All data is replicated to a geographically remote data center for full remote failover. Complete snapshots of customer data are taken regularly in at least two separate locations for fast disaster recovery.
- Full-featured webmail—For secure anywhere e-mail access, Cisco WebEx Mail offers an advanced webmail client with full e-mail, calendar, contacts, notes, public folders, and free/busy features. It also offers

Web 2.0 context-sensitive hovers and drag-and-drop capabilities. IT managers can even provide cost-effective webmail-only access to employees without a dedicated workstation.

- IT management and control—Provision, configure, and manage desktop, webmail and mobile accounts using a web-based console. Administrators can add or delete users, directory lists, and public folders, and perform mobile data wipes. Also, manage domains, monitor usage, and view billing details online for better planning.
- Next-generation collaboration capabilities—Cisco WebEx Mail is built on highly scalable and flexible technologies that enable companies to migrate to next-generation collaboration approaches that integrate e-mail with a broader set of collaboration features, such as IM and presence notification, web conferencing, social networking, unified communications, and much more. Cisco WebEx Mail features a cloud-based infrastructure, customizable Web 2.0 client, and an extensible Linux-based back end.

For More Information
http://www.cisco.com/en/US/products/ps10723/index.html

Cisco Unified Personal Communicator

An integral component of the Cisco Unified Communications Family of products, Cisco Unified Personal Communicator integrates your most frequently used communications applications and services into a single, unified client. From an easy-to-use interface on a PC or Mac, it provides quick and easy access to powerful communications tools—softphone, presence, instant messaging, visual voicemail, click-to-call, employee directory, communication history, video, and web conferencing—to help you communicate effectively and work more productively.

Ideal for Companies That Need These Features

Cisco Unified Personal Communicator
- A unified client that transparently integrates presence, voice, video, instant messaging, and Web conferencing
- Communications capabilities integrated with the personal computer, including integrated contact lists, click-to-call, voicemail playback, inbound call notification, and media escalation
- A supplemental telephone that provides access to phone extensions and services outside the office

Key Features and Benefits

- Communication integration—Take advantage of a single, intuitive interface for voice and video calls, instant messaging, voicemail playback, web conferencing, and integrated directories.
- Presence—View real-time availability of other users on Cisco Unified Personal Communicator, Cisco Unified IP Phone users as well as other federated presence systems (for example, WebEx Connect, Google Talk). You can also display customized messages, set an out-of-office message, and automatically show your availability based on free and busy status on your Microsoft Outlook Calendar.
- Do not disturb (DND)—Easily block incoming calls with synchronized DND status from your Cisco Unified Personal Communicator or Cisco Unified IP Phone or use the privacy preference setting to block instant messages when you need additional privacy.
- Contact list—Search your corporate directory from one easy-to-use interface to locate contacts quickly and simply click to call. Add your most frequently contacted personal contacts, co-workers, and federated business contacts.
- Click-to-call—Dial from the contact list, using either the integrated softphone or an associated Cisco Unified IP Phone. You can also click to call directly from Microsoft Outlook using an Outlook toolbar.
- Integrated voice and video calling—Exchange ideas face-to-face with a coordinated video display on the PC screen and audio conversation with the softphone. You can place video calls using Cisco Unified Personal Communicator, Cisco Unified Video Advantage, or the Cisco Unified IP Phone 7985G, a personal desktop videophone.
- Instant messaging—Chat in real time using instant messaging with other Cisco Unified Personal Communicator users and users of federated solutions to save time and reduce phone tag. Also support group chat and persistent chat.
- Conferencing—Create voice or video conferencing sessions by simply merging conversation sessions. There is no need to call into a separate conference bridge.
- Web conferencing—Launch a Cisco Unified MeetingPlace or WebEx web conferencing session at a moment's notice to share content, such as a presentation, with others.
- Voice messages—Access secure Cisco Unity or Cisco Unity Connection encrypted voicemail messages—view, play back, sort, and delete messages—all from within the application.

For More Information
http://www.cisco.com/go/unifiedpersonalcom

Cisco Unified Presence

Cisco Unified Presence "Powered by Jabber" lays the foundation to deliver enterprise instant messaging- and presence-enabled collaboration capabilities. Customers powered by Cisco Unified Presence and Cisco Unified Communications Solutions can then view the presence status or availability of the people with which they want to communicate, exchange instant messages with these individuals, and escalate to a voice call or rich collaborative session.

Ideal for Companies That Need These Features

Cisco Unified Presence
- Looking to increase productivity by providing the ability to connect with colleagues on the first try by knowing their availability in advance on either Cisco Unified Personal Communicator or Cisco Unified IP Phone
- Seeking to enhance collaboration by sharing availability information and instant messages with co-workers within your business or between businesses with Cisco Unified Personal Communicator
- Exposing presence information and user communications capabilities in corporate web directories, point-of-sales applications, or customer-relationship-management systems through Cisco Unified Application Environment and standards-based application programming interfaces (APIs) on Cisco Unified Presence
- Allowing subject matter experts anywhere in your enterprise to handle incoming customer calls with presence capabilities delivered with Cisco Unified Expert Advisor, Cisco Unified Presence, and Cisco Unified Personal Communicator

Key Features and Benefits

- Cisco Unified Presence provides enterprise-class scalability, redundancy, and high availability desired by large businesses and organizations.
- Cisco Unified Presence natively supports standards-based Jabber XMPP and SIP for instant messaging and presence leveraging extensions (SIP/SIMPLE). With this dual protocol capability, Cisco Unified Presence offers customers a choice of either rich featured Cisco Unified Communications clients or any third-party XMPP-compliant instant messaging and presence client.
- Cisco Unified Presence supports business-to-business and business-to-consumer federation between organizations that are both running Cisco Unified Presence, or when one organization is using Cisco Unified Presence and the other is using Cisco WebEx Connect, Sametime, or any Jabber Extensible Communications Platform. Cisco Unified Presence also offers direct business-to-consumer federation with Google Talk.
- Cisco Unified Presence provides the SIP proxy services needed to support large Cisco Customer Voice Portal 4.0 (and later) deployments.

Selected Part Numbers and Ordering Information

SW-CUP6.0-K9=	License Cisco Unified Presence 6.0 Application Software
CUP6.0-U-K9=	SW Upgrade UPS 1.0 to CUP 6.0
SW-CUP7.0-K9	Cisco Unified Presence 7.0 Application Software
CUP-Server-LIC	Cisco Unified Presence Server User Licenses

For More Information

http://www.cisco.com/en/US/products/ps6837/index.html

Cisco Unity Connection

Cisco Unity Connection provides voicemail or integrated messaging with speech recognition and call routing rules on an easy-to-manage Linux platform.

Key Features and Benefits

- Access voice messages anytime from a variety of clients and devices: e-mail inbox, web browser, desk phone, instant messaging client, and mobile phones, including natural language-based speech access on phones.
- The flexible platform allows for configuration as voicemail or integrated messaging on a Linux appliance.
- The system is scalable to 250 ports and 20,000 users per server, 500 ports when using active-active redundancy.
- Speech Recognition allows you to use voice commands to navigate phone menus and to manage messages, Cisco SpeechView allows you to read voicemail transcripts, and Speech Connect for Cisco Unity Connection allows you to dial colleagues by saying their name.
- The solution supports Voice Profile for Internet Mail (VPIM) to facilitate interoperability with older voicemail systems.
- Integration with the Cisco Fax Server allows you to send and receive fax messages from your e-mail inbox.
- The solution offers robust Automated-Attendant functions that include intelligent routing and easily customizable call-screening and message-notification options.

Specifications

Feature	Cisco Unity Connection 8.0
Unity Voice Mail (VM) and Unified Messaging (UM) possible configurations	· 20,000 users and 250 ports maximum, 100,000 VPIM networked users with 20 nodes · Configured for Cisco Unified Communications Manager or configured for legacy PBX/dual integration
Options	Voicemail, IMAP client messaging, text-to-speech, Cisco Personal Communications Assistant web client, voice commands, speech-to-text

Selected Part Numbers and Ordering Information

UNITYCN8-USP	One Unity Connection, 8.x Users - All user features

For More Information

Speech Connect for Cisco Unity Connection

Speech Connect for Cisco Unity Connection is a speech-enabled automated attendant for the enterprise. Internal or external callers can say the name of an employee into the phone and instantly be connected to that employee.

Key Features and Benefits

- Advanced speech attendant for the numberless enterprise.
- Industry-leading speech recognition performance combined with the powerful Cisco Unity Connection messaging solution.
- Speech Connect for Cisco Unity Connection is included in the base user license for Cisco Unity Connection.

Selected Part Numbers and Ordering Information

UNITYCN8-SC-GUEST	Speech Connect Guest User for Cisco Unity Connection

For More Information

Cisco SpeechView

Cisco SpeechView converts voice messages to text and delivers them to you via e-mail, allowing you to read your voice messages and take immediate action. Cisco SpeechView is a feature of the Cisco Unity Connection voice and integrated messaging solution, so the original audio version of each voice message remains available to you anywhere, anytime with Unity Connection.

Key Features and Benefits

- Speech-to-text transcription is usually delivered in 5 minutes or less
- Approximately the first 30 seconds of the voice message are transcribed
- No limit on the number of messages transcribed

Selected Part Numbers and Ordering Information

SPEECHVIEW-1YR	One Year Subscription

For More Information

Cisco Unity Express

Cisco Unity Express provides integrated messaging, voicemail, Automated Attendant services, and optional interactive voice response (IVR) and time card services specifically for the small- and medium-sized office or branch office. The application is delivered on either a network module or advanced integration module, both of which are supported on a variety of voice-enabled integrated services routers.

Ideal for Companies That Need these Features

Cisco Unity Express	• Integrated messaging, voicemail, Automated Attendant, or interactive-voice-response (IVR) or time card services at the branch or small office to support local users • Up to 500 users per site

Key Features and Benefits

- The solution offers affordable messaging and greeting services for increased customer service and rich employee communications.
- Intuitive telephone prompts and a web-based interface provide fast, convenient voicemail and Automated Attendant administration.
- Cisco Unity Express can view, sort, search, and play back voice messages using the display of a Cisco Unified IP Phone or your e-mail client.
- The TimeCard View solution is a time and attendance application that allows employees, supervisors, and payroll specialists to enter and manage time-card data.
- The solution offers scalability up to 32 ports and 500 mailboxes.
- The solution is deployable with Cisco Unified Communications Manager Express, Cisco Unified Communications Manager, Cisco Unity, and Cisco Unity Connection systems.

Specifications

Feature	Cisco Unity Express
Hardware	NME-CUE, AIM-CUE, AIM2-CUE-K9, ISM-SRE-300-K9, or SM-SRE-700-K9, fully self-contained modules with onboard storage, memory, and processing supporting a variety of mailbox densities, storage capacities, and concurrent sessions to meet the needs of every small-to-medium office or branch
Software	Cisco Unity Express release 8.0
Platform Supported	Cisco 1861, 2800 Series, 2900 Series, 3800 Series, 3900 Series, and 3900E Series Integrated Services Routers

For More Information
http://www.cisco.com/go/cue

Cisco Unified Survivable Remote Site Voicemail

Cisco Unified Survivable Remote Site Voicemail (SRSV) provides a cost-effective solution for supporting redundant voicemail service for your organization's remote sites, such as branch offices or small sites.

When a remote site does not have access to your central voicemail system, for example during a network service interruption, Cisco Unified SRSV provides voicemail backup services to help ensure your remote site continues to have voicemail service. This solution also provides Automated-Attendant or call-handler services while in survivability mode.

Key Components

Cisco Unified Communications Manager version 8.0	· Advanced call processing at the central site
Cisco Unity Connection version 8.0	· Powerful integrated and voice messaging at the central site
Cisco Unity Express version 8.0	· Voicemail redundancy at the remote site
Cisco Unified Messaging Gateway version 8.0	· Voicemail provisioning between the central and remote sites as well as voicemail upload from the remote site to the central location after the network service is restored

Specifications

Hardware	NME-CUE or AIM2-CUE-K9 for Cisco Unity Express; NME-UMG or NMG-UMG-EC for Cisco Unified Messaging Gateway
Software	Cisco Unity Express version 8.0, Cisco Unity Connection version 8.0, Cisco Unified Communications Manager version 8.0
Platform Supported	Cisco 2800 Series, 2900 Series, 3800 Series, 3900 Series, and 3900E Series Integrated Services Routers

For More Information
http://www.cisco.com/go/srsv

Cisco Unified Messaging Gateway

The Cisco Unified Messaging Gateway provides an open and secure method of intelligently routing messages and exchanging subscriber and directory information within a unified messaging network. It acts as the central hub in a network of Cisco unified messaging solutions and third-party gateways that interface with older voicemail systems.

Ideal for Companies That Need these Features

Cisco Unified Messaging Gateway	· Scale the unified messaging network as required for branch-office customers and larger distributed enterprises · Simplify configuration tasks and centralize voicemail system management · Transparently integrate Cisco Unified Communications solutions into existing voicemail installations

Key Features and Benefits

- Integrate small to large-scale unified messaging deployments that consist of more than five Cisco Unity Express systems.
- Integrate up to 10,000 mixed Cisco Unity Express, Cisco Unity, and Cisco Unity Connection systems.

Specifications

Feature	Cisco Unified Messaging Gateway
Hardware	NME-UMG or NME-UMG-EC
Platform Supported	Cisco 2800 and 3800 Series Integrated Services Routers Cisco 2900, 3900, and 3900E Series Integrated Services Routers (with NM-SM-ADPTR)

For More Information

http://www.cisco.com/go/umg

Cisco Unity Unified Messaging

Cisco Unity unified messaging is a reliable, secure, scalable, and full-featured unified messaging platform.

Key Features and Benefits

- Access voice messages anytime from a variety of clients and devices: Email inbox, web browser, desk phone, instant messaging client, and mobile phones, including speech access on phones.
- The flexible platform allows for configuration as voicemail or unified messaging, with a single message store on a Microsoft Exchange or Lotus Domino email server or a separate message store for voice messages.
- The system is scalable to 200 ports and 15,000 users per server; it offers server options with multiple processors, redundant fans, redundant power supplies, and Redundant Array of Independent Disks (RAID) hard disk drives.
- The solution supports Audio Messaging Interchange Specification analog (AMIS-A), Voice Profile for Internet Mail (VPIM), and Cisco Unity Bridge for Octel to facilitate interoperability with older voicemail systems.
- Integration with the Cisco Fax Server allows you to send and receive fax messages from your email inbox.

Specifications

Feature	Cisco Unity Unified Messaging
Unity Voice Mail (VM) and Unified Messaging (UM) Possible Configurations	15,000 users and 200 ports maximum, 250,000 networked users Configured for Cisco Unified Communications Manager or configured for legacy PBX/dual integration
Options	Voice Mail; Unified Messaging; Microsoft Exchange or Lotus Domino message store; Failover for Exchange; Cisco Unity Bridge for Exchange

Selected Part Numbers and Ordering Information

Cisco Unity 7.0 Software and Server Licenses	
UNITY8-USR	Cisco One Unity for Exchange User

For More Information
http://www.cisco.com/go/unity

Speech Connect for Cisco Unity

Speech Connect for Cisco Unity is a speech-enabled Automated Attendant for the enterprise. Internal or external callers can speak the name of an employee into the phone and instantly be connected to that employee. Enhanced software fine-tunes pronunciation, improving accuracy over time for superior voice-recognition performance.

Key Features and Benefits

- Speech Connect for Cisco Unity offers unmatched performance in speech recognition because of advanced disambiguation, the names-tuning service, and a dynamic names dictionary.

Selected Part Numbers and Ordering Information

SC-UNITY-NAME	One Speech Connect Cisco Unity Name
SC-GUEST-NAME	One Speech Connect Non-Cisco Unity Name

For More Information
http://www.cisco.com/en/US/products/ps9676/index.html

Mobile Applications

Cisco Unified Mobile Communicator

As an integral part of the Cisco Unified Communications Family of products, Cisco Unified Mobile Communicator is a software application that enables collaboration by securely extending Cisco Unified Communications to mobile smartphones. With Cisco Unified Mobile Communicator, you can place and receive calls, access company directory contacts, check presence information, and review voice-mail messages, as well as receive Cisco Unified MeetingPlace notifications and other vital information, all from a single, intuitive interface.

Key Features and Benefits

- Unified contact list—Search your corporate directory (Microsoft Active Directory) and personal contacts (Microsoft Outlook) from one, easy-to-use interface to locate contacts quickly.
- Presence—View a person's availability status from the directory on your mobile handset.
- Mobile Connect—Single number reach, supported by Cisco Unified Mobility, makes it easier for you to be reached and gives you the flexibility to answer the call that is most important for you at a given time.
- Dial via Office—Transparently place calls through Cisco Unified Communications Manager to reduce toll charges and meet regulatory requirements.
- Secure text messaging—Send and receive text messages from colleagues when they are unavailable to talk.
- Visual voicemail—You have visual access to Cisco Unity and Cisco Unity Connection voicemail messages. Select, view, play back, and delete messages in any order.
- Conferencing—Receive Cisco Unified MeetingPlace conference notifications on your smartphone. With a simple press of a button, you can access the conference bridge.
- Call logs—View a list of recent calls on your mobile device and learn what calls were missed, placed, and received from your mobile device and your Cisco Unified IP Phone.
- Broad operator and device support—Working simultaneously across multiple networks, mobile operators, and handset platforms, Cisco Unified Mobile Communicator helps ensure end-user choice and delivery.
- Enterprise-grade security—Cisco Unified Mobility Advantage server is deployed securely behind the enterprise firewall. It uses industry-standard Secure Sockets Layer (SSL) and Transport Layer Security (TLS) encryption to protect transmission of data between handsets and your corporate infrastructure.
- Management—Simple, web-based management allows IT staff to manage user activation, configuration, and administration; set system privileges and security; report statistics; and manage devices. The end-user portal allows provisioning, directory management, and configuration of user preferences.

NEW—Cisco Mobile 8.0
- Turn your iPhone into a full-featured Cisco Unified IP Phone. Cisco Mobile 8.0 lets you place, receive, and manage calls over your corporate Wi-Fi network.
- Free download from the Apple iTunes App Store
- Unified contact list—Search your corporate directory (Microsoft Active Directory) and personal contacts (Microsoft Outlook) from one, easy-to-use interface to locate contacts quickly.
- Mobile Connect—Single number reach, supported by Cisco Unified Mobility, makes it easier for you to be reached and gives you the flexibility to answer the call that is most important for you at a given time.
- Visual voicemail—You have visual access to Cisco Unity and Cisco Unity Connection voicemail messages. Select, view, play back, and delete messages in any order.
- Call logs—View a list of recent calls on your mobile device and learn what calls were missed, placed, and received from your mobile device and your Cisco Unified IP Phone.

Selected Part Numbers and Ordering Information

CUMC-K9-V3	Cisco Unified Mobile Communicator
VOIP-IPH-LIC	iPhone VoIP Client Access Licence (for Cisco Mobile 8.0 only)

For More Information

http://www.cisco.com/go/mobilecommunicator

Cisco Unified Mobility

Cisco Unified Mobility is a native application to Cisco Unified Communications Manager that streamlines communications and optimizes the communications experience with single number reach.

Key Features and Benefits

- Single Number Reach—Publish one number for multiple devices to simplify communications and preserve your office identity.
- Transparently move active phone calls between your mobile phone and your Cisco Unified IP Phone without interrupting a call to optimize the communications experience.
- Answer calls on the device that is most suitable to you at any given time with the ability to ring up to four devices simultaneously.
- Anchor calls in Cisco Unified Communications Manager to apply policy.

For More Information

Nokia Call Connect for Cisco

Enables select Nokia dual-mode handsets to operate on Cisco Unified Wireless Networks (VoWLAN/802.11 b/g) and access advanced features of Cisco Unified Communications Manager and Cisco Unified Communications Manager Express to reduce cellular costs and improve communications.

Key Features and Benefits

- Access mid-call features, including call pick-up, group pick-up, call park, shared line appearance and conferencing
- Extension dialing
- Enterprise voice mail messaging waiting indicator
- Enhance in-building mobility experience with pervasive Cisco Unified Wireless Network coverage

For More Information

Cisco WebEx Meeting Center on SmartPhone Browsers

Using the mobile browser on a smartphones, users can attend fully participate in Cisco WebEx Meeting Center meetings, view presentations applications and desktops with live annotations.

Key Features and Benefits

- Attend pre-scheduled meetings from your smartphone with integrated audio and data
- View shared presentations, applications and desktops with live annotations
- View the meeting attendee list

For More Information

Cisco WebEx Meeting Center on Mobile Devices

A free downloadable application available for Cisco WebEx Meeting Center on the Apple iPhone and iPad and RIM BlackBerry smartphones.

Key Features and Benefits

- Schedule WebEx Meeting Center meetings and invite attendees (iPhone only)
- Start a scheduled WebEx meeting (iPhone and BlackBerry)
- Attend scheduled meetings with integrated audio and data integrated WebEx VoIP (iPad only)
- View shared presentations, applications and desktops with live annotations
- View the meeting attendee list
- Give presentation control to other meeting participants joined from a computer (iPhone and BlackBerry)
- Chat with meeting participants
- Transfer a live meeting from the iPhone to a PC.

For More Information

Cisco Mobile Supervisor

Cisco Mobile Supervisor for is a free application available from Apple Inc's App Store that extends the Cisco Supervisor Desktop (CSD) of Cisco Unified Contact Center Express to the iPhone 3G and iPod Touch.

Key Features and Benefits

- A list of Contact Service Queues (CSQs) belonging to a selected team
  - The Voice CSQ Summary report for a selected CSQ
  - The list of agents (along with their states) belonging to the selected CSQ
- A list of agents (along with their states) belonging to a selected team
- Color-coded indicators to identify whether a CSQ's Calls in a Queue or Oldest Call in a Queue fields have exceeded user-configured thresholds. You can specify/change these threshold values at any time.

For More Information

TelePresence

Cisco TelePresence System

Critical to delivering the Cisco TelePresence experience are three critical principles: quality that is as good as being there, a system that is extremely simple to use, and an architecture that uses existing services to provide a low total cost of ownership. The Cisco TelePresence solution gives users the tools to cost-effectively improve productivity; gain closer ties to customers, partners, and suppliers; and promote internal collaboration.

Designed to deliver an immersive "in-person" experience, the Cisco TelePresence solution incorporates high-quality spatial audio and lifelike video in a specially tuned environment. The full-duplex audio and near-zero latency allow you to communicate in real time, catching every comment and every nuance of the conversation. The industry-leading, 1080p high-definition video makes every expression and every gesture clearly visible, whether you are meeting across town or across time zones. You can now collaborate globally, not compromise on communications.

The Cisco TelePresence solution is designed to take advantage of the tools you use every day. It integrates with both enterprise groupware and unified communications, so scheduling a Cisco TelePresence meeting is as simple as booking a meeting. Whether you are meeting with one or many sites, the simple and intuitive user interface eliminates the need for staff, training, or manuals so that you can focus on the business opportunity—not the technology. And thanks to the simplicity and reliability of this solution, you can focus your IT resources on strategic projects instead of operational tasks.

The Cisco TelePresence solution delivers the industry's leading in-room experience, so users can conduct business as easily and naturally as in person, but more cost-effectively. The solution offers intercompany capabilities for secure face-to-face communications across enterprise networks, interoperability with standards-based video conferencing, and scalable, cost-effective multipoint capabilities with support for up to 48 sites in a single meeting.

The Cisco TelePresence solution uses intelligent network architecture, with innovative services and integrated security—and industry-leading reliability. It takes advantage of the real-time collaborative communications services built into the network, delivering quality of service, security, and high availability. You can deploy and scale the application quickly, with a low total cost of ownership, for immediate productivity gains. Your organization can depend on this solution as a strategic communications platform that provides an in-person experience with the quality, simplicity, and reliability of a telephone call.

Key Features and Benefits

- The solution is available as an entire portfolio of rooms and endpoints in a variety of configurations to meet all meeting and collaboration needs, from one-on-one meetings to very large team meetings or classroom applications.
- The solution is simple to use and it integrates with Microsoft Outlook and Lotus Notes for one-button-to-push meeting initiation.
- Meeting participants can share documents, photos, video, and physical objects through Cisco TelePresence Auto-Collaboration.
- Cisco TelePresence systems can participate in multipoint meetings by using the Cisco TelePresence Multipoint Switch.
- The Cisco TelePresence solution provides comprehensive security through media and signaling encryption for point-to-point and multipoint calls. Built-in encryption maintains the immersive meeting experience without adding discernable latency.
- Participants can meet with other organizations through intercompany Cisco TelePresence meetings.
- The solution interoperates with existing, standards-based video conferencing equipment.
- The Cisco TelePresence environment incorporates advanced audio, high-quality video, and room environmentals.

Cisco TelePresence System 3210

For large, distributed organizations striving to succeed in today's global economy, the Cisco TelePresence System 3210 brings the power of Cisco TelePresence technology to larger room venues. Ideal for headquarters sites or large regional offices, the system allows large teams to meet and collaborate virtually using this solution when many of the team members are in one physical location. With seating for up to 18 participants in a single room, the system delivers the same superior video and audio quality as the rest of the Cisco TelePresence portfolio. Applications for the Cisco TelePresence System 3210 include large team meetings, cross-functional team meetings, and training or classroom events. Cisco TelePresence systems can now scale to fit your organization's wide range of meeting needs today and into the future. The Cisco TelePresence System 3210 is ideal for large group meetings with many participants in a single location connecting to other satellite groups in remote locations. It provides an equal seat at the table for participants for applications such as operations reviews, status-update meetings, quarterly meetings with clients or partners, executive presentations, or meetings requiring staff to be present.

Specifications

Specification	Description
Product compatibility	· Cisco TelePresence System 500 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 1000 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 1100 with Cisco TelePresence System Software 1.5 or later · Cisco TelePresence System 1300 Series with Cisco TelePresence System Software 1.5 or later · Cisco TelePresence System 3000 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 3010 with Cisco TelePresence System Software 1.6 or later · Cisco TelePresence System 3210 with Cisco TelePresence System Software 1.6 or later · Cisco Unified Communications Manager V7.0(2a) SU2 or later · Cisco TelePresence Multipoint Switch 1.0 or later · Cisco TelePresence Manager 1.6 or later
Software compatibility	Cisco TelePresence System Software 1.6 or later
Protocols	Cisco Discovery Protocol, SIP, IP, Dynamic Host Configuration Protocol (DHCP), Secure Shell (SSH) Protocol, 802.1p/q, and Real-Time Transport Protocol (RTP)
Connectivity	Ethernet (1 LAN, RJ-45 connection: 100/1000m), internal 4-port Ethernet switch, and high-definition video connector
Programming interfaces	Web-based user interface; you can configure IP address assignment statically or through the Cisco TelePresence administrator web interface
Physical dimensions (H x W x D)	8 x 24 x 23 ft (2.4 x 7.3 x 7.0m) minimum room dimensions for reduced back-row table configuration (total room capacity of 14 participants); dimensions for the 12-person second-row table are 8 x 31 x 23 ft (2.4 x 9.4 x 7.0m) Note that higher ceilings may be required to mount an optional data display. Contact your Cisco Authorized Technology Provider (ATP) partner for data display options and mounting options.
Weight	Approximately 2595 lb (1177 kg; freight weight)
Power	3222W (26.9A @ 120V to 13.43A @ 240V maximum) (system only-does not account for participant devices)
Total typical heat dissipation[1]	8892 BTU/hr (system only-does not account for participant devices)
Video and Audio Specifications	**Description**
Bandwidth consumption	15.3 Mbps (1080p, best motion handling) or 9.0 Mbps (720p, best motion handling) for IP QoS connections recommended; 19.8 Mbps (1080p best) or 13.5 Mbps (720p best) when including at 30-fps presentation codec Note that the bandwidth recommendations for the Cisco TelePresence 3210 are identical to those for the Cisco TelePresence 3000.
Video standards	H.264
Video frame rate	30 frames per second using H.264
Data and graphics frame rate	· Graphics sharing at 5 frames per second (standard configuration) · Optional graphics sharing at 30 frames per second using a dedicated presentation codec
Native National Television Standards Committee (NTSC)	720p and 1080p
Resolution	1920 x 1080 native
Audio standards	G.711 and AAC-LD (22 kHz)
Audio features	Cisco Dynamic Echo Cancellation for spatial audio
Cisco TelePresence High-Definition Camera	· CMOS 2/3-inch sensor · C-mount lens · 1080p 30 · Minimum illumination 300 lux · Manual focus
Additional Specifications	**Description**
Firmware upgrades	Downloadable from Cisco Unified Communications Manager
Video network features	Intelligent packet loss recovery of video transmission
Network interface	· 1 LAN or Ethernet (RJ-45); 100/1000 Mbps · Internal 4-port Ethernet switch with 2 PoE (IEEE 802.3af) ports on codec

Regulatory Compliance	· CE marking · UL/CSA/IEC/EN/AS/NZS/ 60950 · FCC Part 15 Class A · CISPR22/EN55022 Class A · EN55024
Temperature Ratings	**Description**
Conference-room operating temperature	41 to 86ºF (5 to 30ºC)
Relative humidity	10 to 95% (noncondensing)

1. Typical accounts for a diversity of power consumption at 75 percent of maximum.

Selected Part Numbers and Ordering Information

Product Name	Part Number
Cisco TelePresence System 3210	CTS-3210
Power Cords	Select the appropriate power cord option to plug into the wall outlets in the country where the TelePresence system will be deployed.
Laptop Connectivity Modules	Select the appropriate connectivity modules based on the country where the TelePresence system will be deployed. These modules allow participants to plug their laptop PCs or other portable electronic devices into power outlets integrated into the system table legs.
Presentation Codec	CTS-HFR-COLLAB This is a chargeable option to add a dedicated presentation codec to enable high frame rate Auto Collaboration.

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence System 3010

The Cisco TelePresence System 3010 provides a boardroom-style table that seats 6 participants on each side, providing a "virtual" table for 12 participants in a point-to-point meeting, or up to 372 participants in a multipoint session. The system provides an optimized experience through integrated equipment, including three 65-inch plasma screens; spatial audio; microphones; lighting; integrated Ethernet and power; and multiple ultra-high-definition codecs and cameras, all of which have been specially tuned to the large-group environment to optimize your experience. The Cisco TelePresence System 3010 is ideal for large group meetings, comfortably seating participants around a virtual table for applications such as customer engagements, presentations to groups, supply-chain dealings, press briefings, operational or engineering reviews, negotiations, or regular team meetings.

Specifications

Specification	Description
Software compatibility	Cisco TelePresence System Software 1.6 or later
Protocols	Cisco Discovery Protocol, SIP, IP, Dynamic Host Configuration Protocol (DHCP), Secure Shell (SSH) Protocol, 802.1p/q, and Real-Time Transport Protocol (RTP)
Connectivity	Ethernet (1 LAN, RJ-45 connection: 100/1000m), internal 4-port Ethernet switch, and high-definition video connector
Programming interfaces	Web-based user interface; you can configure IP address assignment statically or through the Cisco TelePresence administrator web interface
Product compatibility	· Cisco TelePresence System 500 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 1000 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 1100 with Cisco TelePresence System Software 1.5 or later · Cisco TelePresence System 1300 Series with Cisco TelePresence System Software 1.5 or later · Cisco TelePresence System 3000 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 3200 with Cisco TelePresence System Software 1.4 or later · Cisco TelePresence System 3210 with Cisco TelePresence System Software 1.6 or later · Cisco Unified Communications Manager V7.0(2a) SU2 or later · Cisco TelePresence Multipoint Switch 1.0 or later · Cisco TelePresence Manager 1.6 or later
Physical dimensions (H x W x D)	8 x 15 x 19 ft (2.4 x 4.6 x 5.8m) minimum room dimensions
Weight	Approximately 2020 lb (916 kg; freight weight)

Power	3222W (26.9A @ 120V to 13.5A @ 240V maximum) (system only-does not account for participant devices)
Total typical heat dissipation[1]*	8892 BTU/hr (system only-does not account for participant devices)

Video and Audio Specifications	**Description**
Bandwidth consumption	15.3 Mbps (1080p, best motion handling) or 9.0 Mbps (720p, best motion handling) for IP QoS connections recommended; 19.8 Mbps (1080p best) or 13.5 Mbps (720p best) when including at 30-fps presentation codec
Video standards	H.264
Video frame rate	30 frames per second using H.264
Data and graphics frame rate	· Graphics sharing at 5 frames per second (standard configuration) · Optional graphics sharing at 30 frames per second using a dedicated presentation codec
Native National Television Standards Committee (NTSC)	· 720p and 1080p
Resolution	· 1920 x 1080 native
Audio standards	· G.711 and AAC-LD (22 kHz)
Audio features	· Cisco Dynamic Echo Cancellation for spatial audio
Cisco TelePresence High-Definition Camera	· CMOS 2/3-inch sensor · C-mount lens · 1080p 30 · Minimum illumination 300 lux · Manual focus

Additional Specifications	**Description**
Firmware upgrades	Downloadable from Cisco Unified Communications Manager
Video network features	Intelligent packet loss recovery of video transmission
Network interface	· 1 LAN or Ethernet (RJ-45); 100/1000 Mbps · Internal 4-port Ethernet switch with 2 PoE (IEEE 802.3af) ports on codec
Regulatory Compliance	· CE marking · UL/CSA/IEC/EN/AS/NZS/ 60950 · FCC Part 15 Class A · CISPR22/EN55022 Class A · EN55024

Temperature Ratings	**Description**
Conference-room operating temperature	41 to 86ºF (5 to 30ºC)
Relative humidity	10 to 95% (noncondensing)

1. Typical accounts for a diversity of power consumption at 75 percent of maximum

Selected Part Numbers and Ordering Information

Product Name	**Part Number**
Cisco TelePresence System 3010	CTS-3010
Power Cords	Select the appropriate power cord option to plug into the wall outlets in the country where the TelePresence system will be deployed.
Laptop Connectivity Modules	Select the appropriate connectivity modules based on the country where the TelePresence system will be deployed. These modules allow participants to plug their laptop PCs or other portable electronic devices into power outlets integrated into the system table legs.
Presentation Codec	CTS-HFR-COLLAB This is a chargeable option to add a dedicated presentation codec to enable high frame rate Auto Collaboration.

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence System 1300

The Cisco TelePresence System 1300 brings the virtual in-person Cisco TelePresence experience to the multipurpose conference room. With a streamlined industrial design, one screen, and three cameras, it can support up to six people without requiring a dedicated teleconferencing room. All team members participate life-size in Cisco TelePresence calls with automatic voice-activated switching.

The Cisco TelePresence System 1300 is ideal for multipoint group meetings, such as operational reviews, status update meetings, and quarterly customer presentations. It also supports multilocation collaborative group meetings such as design reviews, and general working sessions for geographically dispersed teams.

Specifications

Product compatibility	· Cisco TelePresence System 500 with Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 1000 with Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 3000 with Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 3200 with Cisco TelePresence System Software v1.5 or later · Cisco Unified Communications Manager 6.1 or 7.0 or later · Cisco TelePresence Multipoint Switch 1.5 or later · Cisco TelePresence Manager 1.5 or later
Software compatibility	Cisco TelePresence System Software Version 1.5 or later
Protocols	Cisco Discovery Protocol, SIP, IP, Dynamic Host Configuration Protocol (DHCP), Secure Shell (SSH) Protocol, 802.1p/q, and Real-Time Transport Protocol (RTP)
Connectivity	Ethernet (1 LAN, RJ-45 connection - 100/1000m), internal 4-port Ethernet switch, and high-definition video connector
Programming interfaces	Web-based user interface; IP address assignment can be statically configured or configured through the Cisco TelePresence administrator web interface
Physical dimensions (H x W x D)	Wall-mounted: 77.4 x 80 x 7.5 in. (196.7 x 203.2 x 19.1 cm)
Weight	600 lb (272 kg) (freight weight)
Power	Cisco TelePresence system (typical): 1228W (12.8A @ 120V)
Video and Audio Specifications	
Bandwidth consumption	Recommended for IP QoS connections: 3 to 4 Mbps (1080p) or 1 to 3 Mbps (720p) Note: The bandwidth recommendations for the Cisco TelePresence System 1300 are identical to those for the Cisco TelePresence System 1000.
Video standards	H.264
Video frame rate	30 frames per second using H.264
Data and graphics frame rate	· Graphics sharing at 5 frames per second (standard configuration) · Optional graphics sharing at 30 frames per second using a dedicated presentation codec
Native National Television Standards Committee (NTSC)	720p and 1080p
Resolution	1920 x 1080 Native
Audio standards	G.711 and AAC-LD (22 kHz)
Audio features	Cisco Dynamic Echo Cancellation
Cisco TelePresence high-definition camera	· Complementary Metal Oxide Semiconductor (CMOS) 2/3-inch sensor · C-mount lens · 1080p 30 fps · Minimum illumination 300 lux · Manual focus
H.264 interoperability	Using Common Intermediate Format (CIF) and G.711 with Cisco Unified Video Conferencing 3500 Series platforms
Additional Specifications	
Firmware upgrades	Downloadable from Cisco Unified Communications Manager
Video network features	Intelligent packet loss recovery of video transmission
Network interface	· 1 LAN or Ethernet (RJ-45); 100/1000 Mbps · Internal 4-port Ethernet switch with 2 PoE (IEEE 802.3af) ports on codec

Selected Part Numbers and Ordering Information

Product Name	Part Number
Cisco TelePresence System 1300-65	CTS-1300-65
Power Cords	Select the appropriate power cord pair option to plug into the wall outlets in the country where the Cisco TelePresence system will be deployed.
Presentation codec	CTS-HFR-COLLAB This chargeable option adds a dedicated presentation codec to enable high-frame-rate Auto Collaboration.

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence System 1100

The Cisco TelePresence System 1100 accommodates seating for 1 or 2 participants on each side around a virtual table and supports up to 48 locations in a multipoint meeting. Integrated equipment for optimized user experience includes one 65-inch plasma screen, a speaker and microphone with echo cancellation, lighting, and an ultra-high-definition codec and camera that are specially tuned to small groups. Incorporating built-in support for audio conferencing, the Cisco Digital Media Player, and a rich media display, the Cisco TelePresence System 1100 is meeting-ready, enhancing your meeting room experience.

The Cisco TelePresence System 1100 is suitable for direct customer engagements, small presentations, and one-on-one meetings with remote employees or partners, or for joining larger Cisco TelePresence multipoint meetings. The system is versatile-you can effortlessly move from Cisco TelePresence meetings to audio conferences and use the screen to share data and rich media.

Specifications

Feature	Description
Product compatibility*	· Cisco TelePresence System 500 w/ Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 1000 w/ Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 1300 w/ Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 3000 w/ Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 3010 w/ Cisco TelePresence System Software v1.6 or later · Cisco TelePresence System 3200 w/ Cisco TelePresence System Software v1.5 or later · Cisco TelePresence System 3210 w/ Cisco TelePresence System Software v1.6 or later · Cisco Unified Communications Manager 6.1 or 7.0 or later · Cisco TelePresence Multipoint Switch 1.5 or later · Cisco TelePresence Manager 1.5 or later
Software compatibility	Cisco TelePresence System Software v1.5 or later
Protocols	Cisco Discovery Protocol, SIP, IP, Dynamic Host Configuration Protocol (DHCP), Secure Shell (SSH) Protocol, 802.1p/q, and Real-Time Transport Protocol (RTP)
Connectivity	Ethernet (1 LAN, RJ-45 connection:- 100/1000m), internal 4-port Ethernet switch, and high-definition video connector
Programming interfaces	Web-based user interface; IP address assignment can be statically configured or configured through the Cisco TelePresence administrator web interface
Physical dimensions (H x W x D)	Wall-mounted: 77.4 x 80 x 7.5 in. (196.7 x 203.2 x 19.1 cm)
Weight	826 lb (275 kg) (freight weight)
Power	Cisco TelePresence system (typical): 986W (8.3A @ 120V)
Video and Audio Specifications	Description
Bandwidth consumption	Recommended for IP QoS connections: 3 to 4 Mbps (1080p) or 1 to 3 Mbps (720p) Note: The bandwidth recommendations for the Cisco TelePresence System 1300 are identical to those for the Cisco TelePresence System 1000.
Video standards	H.264
Video frame rate	30 frames per second using H.264
Data and graphics frame rate	· Graphics sharing at 5 frames per second (standard configuration) · Optional graphics sharing at 30 frames per second using a dedicated presentation codec

Native National Television Standards Committee (NTSC)	720p and 1080p
Resolution	1920 x 1080 native
Audio standards	G.711 and AAC-LD (22 kHz)
Audio features	Cisco Dynamic Echo Cancellation
Cisco TelePresence high-definition camera	· Complementary Metal Oxide Semiconductor (CMOS) 2/3-inch sensor · C-mount lens · 1080p 30 fps · Minimum illumination 300 lux · Manual focus
H.264 interoperability	Using Common Intermediate Format (CIF) and G.711 with Cisco Unified Video conferencing 3500 Series platforms
Additional Specifications	**Description**
Firmware upgrades	Downloadable from Cisco Unified Communications Manager
Video network features	Intelligent packet loss recovery of video transmission
Network interface	· 1 LAN or Ethernet (RJ-45); 100/1000 Mbps · Internal 4-port Ethernet switch with 2 PoE (IEEE 802.3af) ports on codec
Temperature	**Description**
Office operating temperature	41 to 95ºF (5 to 35ºC)
Relative humidity	10 to 95% (noncondensing)
Regulatory compliance	· CE marking · UL/CSA/IEC/EN/AS/NZS/60950 · 47CFR Part 15 Class A · CISPR22/EN55022 Class A

Selected Part Numbers and Ordering Information

Product Name	Part Number
Cisco TelePresence System 1100	CTS-1100
Power cords	Select the appropriate power cord pair option to plug into the wall outlets in the country where the Cisco TelePresence system will be deployed.
Presentation codec	CTS-HFR-COLLAB This chargeable option adds a dedicated presentation codec to enable high-frame-rate Auto Collaboration.

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence System 500

The Cisco TelePresence System 500 brings the virtual in-person experience of Cisco TelePresence meetings directly into the private office. Creating a new category called Cisco TelePresence, the Cisco TelePresence System 500 allows individuals, subject matter experts, and executives to join Cisco TelePresence calls with equal stature—appearing life-size on Cisco TelePresence System 3000 and other endpoints.

The Cisco TelePresence System 500 is ideal for joining large, multilocation group meetings, such as operational reviews, status update meetings, and quarterly customer presentations. It also supports personal meetings such as negotiations, job interviews, and personnel reviews.

Specifications

Feature	Cisco TelePresence System 500
Product compatibility	· Cisco TelePresence System 1000 with CTS software version 1.4 or later · Cisco TelePresence System 3000 with CTS software version 1.4 or later · Cisco TelePresence System 3200 with CTS software version 1.4 or later · Cisco Unified Communications Manager 6.0 or later · Cisco TelePresence Multipoint Switch 1.0 or later · Cisco TelePresence Manager 1.4 or later
Software compatibility	Cisco TelePresence System software Version 1.4 or later

Protocols	Cisco Discovery Protocol, SIP, IP, Dynamic Host Configuration Protocol (DHCP), Secure Shell (SSH) Protocol, 802.1p/q, and Real-Time Transport Protocol (RTP)
Connectivity	Ethernet (1 LAN, RJ-45 connection -- 100/1000m), internal 4-port Ethernet switch, and high-definition video connector
Programming interfaces	Web-based user interface; IP address assignment can be statically configured or configured through the Cisco TelePresence administrator Web interface
Physical dimensions (H x W x D)	Minimum room dimensions: 8 x 6 x 8 feet · Table top: Height 3'0.5", Width 3'2", Depth 1'4.5"; Base width 2'7.5", Base depth 1'4.5" · Freestanding pedestal: Height 5'6.5", Width 3'2"; Base width 2'9", Base depth 2'1" · Wall mounted pedestal: Height 5'6.5", Width 3'2"; Base width 2'9", Base depth 1'1.5" · Wall mounted: Height 2'6", Width 3'2"
Weight	230 lb with pedestal; 65 lb without pedestal and CODEC
Power	350W (3 Amps @ 120V to 1.5 Amps @ 240V); Two power plugs are required
Video and Audio Specifications	
Bandwidth consumption	3 to 4 Mbps (1080p) or 1 to 3 Mbps (720p) for IP QoS connections is recommended. Note: The bandwidth recommendations for the Cisco TelePresence System 500 are identical to those for the Cisco TelePresence System 1000.
Video standards	HM.264
Video frame rate	30 frames per second using H.264
Data and graphics frame rate	· Graphics sharing at 5 frames per second (standard configuration) · Optional graphics sharing at 30 frames per second using a dedicated presentation codec
Native National Television Standards Committee (NTSC)	720p and 1080p
Resolution	1920 x 1080 Native
Audio standards	G.711 and AAC-LD (22 kHz)
Audio features	Cisco Dynamic Echo Cancellation
Cisco TelePresence high-definition camera	· Complementary Metal Oxide Semiconductor (CMOS) 2/3-inch sensor · C-mount lens · 1080p 30 · Minimum illumination 300 lux · Manual focus
H.264 interoperability	Using CIF and G.711 with CUVC35xx Series platforms
Additional Specifications	
Firmware upgrades	Downloadable from Cisco Unified Communications Manager
Video network features	Intelligent packet loss recovery of video transmission
Network interface	· 1 LAN or Ethernet (RJ-45); 100/1000 Mbps · Internal 4-port Ethernet switch with 2 PoE (IEEE 802.3af) ports on codec

Selected Part Numbers and Ordering Information

Power cords	Select the appropriate power cord pair option to plug into the wall outlets in the country where the Cisco TelePresence system will be deployed.
Auxiliary control unit	CTS-LIGHT-CTRL—This is an optional control unit that is used to turn off system lighting when not in a meeting and is not required for Cisco TelePresence 500 operation. The built-in lighting for the system is included and does not need to be ordered separately.
Presentation codec	CTS-HFR-COLLAB—This chargeable option adds a dedicated presentation codec to enable high-frame-rate Auto Collaboration.
Mounting Options (Choose one at NC)	· CTS500-STRUC-PED—This mounting option provides a free standing floor mount for the CTS-500 with codec integrated to the pedestal · CTS500-STRUC-TABL—This mounting option is for the display sitting on a table or shelf and codec sits on the floor with a cable harness · CTS500-STRUC-WALL—This mounting option is for the display attached to a wall and codec sits on the floor with a cable harness

For More Information
http://www.cisco.com/go/telepresence

Cisco TelePresence Commercial Express

For organizations looking for a simple deployment of Cisco TelePresence, Cisco TelePresence Commercial Express combines three infrastructure components—Cisco TelePresence Manager, Cisco TelePresence Multipoint Switch, and the Cisco TelePresence Recording Studio—onto one server using VMware.

Unlike enterprise deployments, Cisco TelePresence Commercial Express is specifically priced and packaged for small- and medium-sized businesses, resulting in an easier deployment, simpler licensing, and faster realization of productivity benefits.

For More Information
http://www.cisco.com/go/telepresence

Cisco TelePresence Manager

Cisco TelePresence Manager software makes it easy for you to schedule and manage Cisco TelePresence calls. As an integral part of the Cisco TelePresence experience, the software facilitates call scheduling and setup from common enterprise groupware such as Microsoft Exchange and Lotus Notes.

Key Features and Benefits

- Web-based user interface for easy administration
- Easy scheduling to minimize user training and support
- Ability to launch calls with one button on the phone interface
- Microsoft Exchange and Lotus Notes compatibility
- Integration with Cisco Unified Call Manager for call control
- Optimized resource allocation for multipoint calls
- Consolidated views of scheduled meetings with export functions for ROI reporting

Specifications

Feature	Cisco TelePresence Manager
Product compatibility	Cisco MCS 7835-H2 and MCS 7835-I2 Media Convergence Servers
Software compatibility	Microsoft Internet Explorer 6.0
Protocols	HTTP, HTTPS, Cisco AVVID XML Layer (AXL) with SOAP, Simple Network Management Protocol (SNMP), and CTI
Connectivity	IP
Reliability and availability	High availability through Cisco MCS 7835 Media Convergence Server platform

Selected Part Numbers and Ordering Information

CTS-MAN1.3	Cisco TelePresence Manager 1.3[1]
MCS-7835-H2-CTS1	Cisco MCS 7835-H2 Media Convergence Server
MCS-7835-I2-CTS1	Cisco MCS 7835-I2 Media Convergence Server[2]
LIC-CTS-MAN-MS	Cisco TelePresence Manager Integration for MS Exchange
LIC-CTS-MAN-IBM	Cisco TelePresence Manager Integration for IBM Domino[3]
LIC-CTS-MAN-10	Cisco TelePresence Manager Device License: 10 units
LIC-CTS-MAN-50	Cisco TelePresence Manager Device License: 50 units
LIC-CTS-MAN-100	Cisco TelePresence Manager Device License:100 units

1. One Cisco media convergence server is required per Cisco TelePresence Manager implementation.
2. One integration is required per Cisco TelePresence Manager Implementation.
3. License required. Based on number of Cisco TelePresence systems under management.

For More Information
http://www.cisco.com/go/telepresence

Cisco TelePresence Multipoint Switch

Easily and reliably include three or more locations in a single meeting with the Cisco TelePresence Multipoint Switch. With support for up to 48 locations in a single meeting across many endpoints, the switch allows all participants to be seen in life-like, high-definition video and heard in CD-quality, spatial audio with no perceivable latency. The Cisco TelePresence Multipoint Switch is an affordable, purpose-built appliance that

offers superior scalability and is easy to install. It delivers automatic voice-activated switching either site-by-site or by individual table segment.

Key Features and Benefits

- Easy meeting setup through enterprise groupware such as Microsoft Outlook or Lotus Notes
- One-button-to-push meeting start with the in-room IP phone
- The system supports connections among 48 single-screen Cisco TelePresence 500 or Cisco TelePresence 1000 endpoints, 16 triple-screen Cisco TelePresence 3000 or Cisco TelePresence 3200 endpoints, or a mix of both in a single meeting.
- Voice-activated switching with spatial audio and seating location on screen maintained as switching occurs
- When linked with the Cisco Unified Video Conferencing 3515 or 3545 MCU, the Cisco TelePresence Multipoint Switch provides full interoperability with the installed base of H.323 and SIP (Session Initiation Protocol) video conferencing endpoints.
- Latency of less than 10 milliseconds for transparent switching between sites or segments during a multipoint call
- Data sharing and auto-collaboration to share images with all other participants and rooms
- Web-based administration with role-based profiles for administrators at both group and department levels

Specifications

Feature	Cisco TelePresence Multipoint Switch	Cisco TelePresence Interoperability
Product compatibility	Cisco TelePresence System Version 1.4.2 or later	
Software compatibility	Cisco TelePresence Manager Version 1.5 or later	
Call signaling	SIP trunk with Cisco Unified Communications Manager Version 6.1.3 or later and IP Version 4 (IPv4)	
Media protocol	Real-Time Control Protocol (RTCP) and Real-Time Transport Protocol (RTP), User Datagram Protocol (UDP), and IP Unicast	
Video protocol	H.264 baseline high-definition (HDTV) 16:9 aspect ratio	H.264 baseline standard definition (TV) 4:3 aspect ratio (on demand only)
Video resolution	Progressive 1080p (1920 x 1080 pixels at 30 frames per second [fps]) and 720p (1280 x 720 pixels at 30 fps)	Common Interchange Format (CIF), 352 x 288 pixels at 30 fps)
Auto collaboration video	1024 x 768 pixels at 5 fps or 30fps presentation video	Not supported in current release
Audio	Advanced Audio Coding with low delay (AAC-LD/HBR) 22-MHz (CD-quality) audio; 4 channel audio streams	Full toll-quality G.711 single channel audio (4 channels mixed)
Additional hardware	No additional hardware required	At least 1 Cisco Unified Videoconferencing 3500 MCU (model 3515/12, 3515/24, or 3545)

Cisco TelePresence Attribute	
Capacity	Up to 48 1080p 30-fps video streams
Maximum meeting size	A single multipoint meeting can accommodate up to the total capacity of the system, which supports 48 video streams (1 plasma display = 1 video stream), so 16 Cisco TelePresence System 3000 endpoints or Cisco TelePresence System 3200, 48 Cisco TelePresence System 1000 endpoints or Cisco TelePresence System 500, or a mix can participate in a single meeting.
Concurrent meetings	The total capacity of CTMS is 48 simultaneous video streams, with each plasma display representing one video stream. This capacity can be divided into any number of meetings. For example, with three Cisco TelePresence System 1000 endpoints per meeting, the switch supports 16 concurrent meetings. The maximum number of concurrent meetings (with at least 2 Cisco TelePresence System 500 or Cisco TelePresence System 1000 endpoints) is 24.
Latency (added by Cisco TelePresence Multipoint Switch)	Less then 10 milliseconds (ms)
Jitter (added by Cisco TelePresence Multipoint Switch)	Less then 0.05%
Availability	99.99% (estimated)
SNMP MIBs	RFC 1213, ENTITY, IF, ENTITY-FRU-CONTROL, HOSTRESOURCES, UMSEVENT, UMSLMSSENSOR, and CiscoTelePresenceCall MIB
CDR data	CDR ASCII format
Administrative interface	HTTP and HTTPS, Secure Shell (SSH) Protocol, role-based access control (RBAC), and password protection

API (Application Programming Interface)	SOAP/XML for real-time (active meeting) conference and participant management
QoS	Support for Differentiated Services (DiffServ) markings

Selected Part Numbers and Ordering Information

CTS-CTMS-1.5	Cisco TelePresence Multipoint Switch (CTMS)
LIC-CTMS-1.5 (Included)	Cisco CTMS Software License/Application
MCS-7845-H2-CTS2 (Included – standard)	Cisco MCS 7845-H2 Media Convergence Server (HP)
MCS-7845-I2-CTS2 (Included – alternate)	Cisco MCS 7845-I2 Media Convergence Server (IBM)

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence Recording Server

The Cisco TelePresence Recording Server transforms Cisco TelePresence into a high-definition recording studio. Using an intuitive user interface, you can create high-quality video to deliver rich, immersive messages immediately for internal and external communications such as training or crisis management. Distributing and viewing video content is easy, and you can replay recordings on Cisco TelePresence endpoints or on the web on standard browser-based players.

Key Features and Benefits

- High-definition recording—Videos are recorded in H.264 1080p high definition for playback on any Cisco TelePresence system. You can immediately view recorded content or share recorded content with other users of Cisco TelePresence endpoints.
- Standard-definition (SD) recording—Videos are simultaneously recorded in standard definition for playback on standard browser-based video players such as Adobe Flash or Apple QuickTime.
- Autocollaboration support—You can record videos with full data presentations using the Cisco TelePresence Auto Collaborate channel to capture the PC presentation as a separate video stream. You can then play this stream back in concert with the high-definition video and audio to provide a fully synchronized presentation that is viewable with standard PC browser-based viewers.
- Easy-to-use controls—All user controls for the Cisco TelePresence Recording Server are incorporated into the Cisco TelePresence IP Phone interface. You can start, stop, pause, and play back recordings as well as sharing them through email messages.
- Onscreen prompting—You are prompted onscreen during the recording session with features such as self-view and data presentation displayed on the main monitor, allowing you to maintain eye contact with your virtual audience.
- Public and private recordings—Videos can be public or private. For private recordings you must enter a security PIN, similar to voicemail, in order to create and view these recordings. You can share private recordings with people who would also be required to authenticate themselves before accessing the recording.
- Multiresolution recording
- Synchronized data recording
- Security

Specifications

Feature	Cisco TelePresence Recording Server
Product compatibility	Cisco TelePresence Version 1.5.1 or later
Software compatibility	Cisco TelePresence System Software Version 1.5.1 or later
Call signaling	Session Initiation Protocol (SIP) trunk with Cisco® Unified Communications Manager Version 7.0 or later and IP Version 4 (IPv4)
Media protocol	Real-Time Control Protocol (RTCP) and Real-Time Transport Protocol (RTP), User Datagram Protocol (UDP), and IP Unicast
Video protocols	H.264 (MPEG 4 Part 10)
Audio protocols	AAC-LD, AAC-LC, G.711, and G.722
Video resolution	CIF, 720p, and 1080
Session capacity	Up to 24 simultaneous 1080p recording or playback sessions
Storage capacity	Up to 300 hours of 1080p and CIF recordings
Streaming video	Support for HTTP streaming of recorded content using Adobe Flash

Security features	• Integration with Active Directory through Lightweight Directory Access Protocol (LDAP) for access • Secure management through HTTPS • Password-protected conferences
System Hardware Specifications	**Cisco MCS 7845 Media Convergence Server**
Hardware	Cisco MCS 7845 (Cisco MCS 7845-H2 for HP or Cisco MCS 7845-I2 for IBM) quad-core-processor server; Restriction of Hazardous Substances (RoHS)-compliant
Connectivity	Dual 1-Gb Ethernet network interfaces
Power	100 to 132 VAC (10A) and 200 to 240 VAC (6.1A); 50 to 60 Hz
Reliability	30,000 hours mean time between failure (MTBF) (estimated)
Dimensions (H x W x D)	3.38 x 17.54 x 26.01 in. (8.59 x 44.54 x 66.07 cm)
Weight	60 lb (27.22 kg)
OS software	Red Hat Linux AS 3
Origin	Manufactured in United States
Hardware data sheet	http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/product_data_sheet0900aecd80587390.html

Selected Part Numbers and Ordering Information

CTS-CTRS-1.6-K9	Cisco TelePresence Recording Server
LIC-CTS-CTRS-1.6	Cisco CTRS Software License/Application
MCS-7845-H2-CTRS	Cisco MCS 7845-H2 Media Convergence Server (HP)
MCS-7845-I2-CTRS	Cisco MCS 7845-I2 Media Convergence Server (IBM)

For More Information

http://www.cisco.com/go/telepresence

Cisco TelePresence Services

Critical to delivering the innovative Cisco TelePresence experience, are integrated services delivered by our certified partners and Cisco. Designed specifically for multi-site organizations, these services accelerate a successful deployment and deliver a high-quality, reliable, "in-person" Cisco TelePresence experience.

For more information on Cisco TelePresence Services, visit: http://www.cisco.com/go/telepresenceservices.

Infrastructure and Other

Cisco Unified Application Environment

Cisco Unified Application Environment offers an increasingly rich portfolio of ready-to-use packaged applications that deliver immediate out-of-box value and custom development tools that allow clients to transform their business by integrating unified communications into other business applications as well as build their own custom applications.

Key Features and Benefits

- A rich portfolio of packaged applications available today, with more being added each month. These applications span a wide variety of markets; some are designed for specific industries such as retail and healthcare, whereas others are applicable to all industries.
- These automated test tools perform functional, load, system, and regression tests to reduce test cycles and increase the success rate of project completion.
- This set of application lifecycle management tools standardizes, centralizes, and automates management of all unified communications applications.
- A standard applications container facilitates development, quality assurance, and operations to collaboratively manage scalability, performance, and reliability of all unified communications applications.
- The solution summarizes implementation differences across products and versions to minimize interoperability challenges, so customers can upgrade their unified communications infrastructure without breaking their applications.
- Increased support for integrated development environments including Eclipse and Microsoft Visual Studio, allows web and enterprise developers who lack telephony skills to easily and rapidly develop feature-rich applications.

Specifications

Components	Cisco Unified Application Environment
Cisco Unified Application Designer	The Cisco Unified Application Designer is a visual integrated development environment (IDE). Without learning the complex details of telephony protocols, developers with little or no Unified Communications development expertise can use the Cisco Unified Application Designer to easily and rapidly develop rich applications that converge voice and video with enterprise applications and data.
Cisco Unified Application Server	The Cisco Unified Application Server is an application server for converged voice, video and data applications. It abstracts the complexity of telephony protocols, protects the reliability of the IP call processing system from the applications, and provides a standard way to manage applications.
Cisco Unified Media Engine	The Cisco Unified Media Engine is a software-only media server. It provides ready-to-use and sophisticated media processing capabilities for all applications built using the Cisco Unified Application Designer.

Selected Part Number and Ordering Information

Configuration and ordering of Cisco Unified Application Environment products can be complicated because of the arbitrary and highly variable nature of the application developed. Please consult your Cisco account team or channel partner if you have any configuration, ordering and pricing questions.

For More Information

http://www.cisco.com/en/US/netsol/ns738/networking_solutions_package.html

Cisco UC Integration for Microsoft Office Communicator

Instantly access enhanced Cisco Unified Communications directly from Microsoft Office Communicator 2007 on your PC. With this easy-to-deploy desktop integration, extend proven Cisco unified communications services to your workspace and benefit from the investment protection and reduced complexity delivered by a single call control solution.

Ideal for Companies That Need these Features

Cisco UC Integration for Microsoft Office Communicator	· Existing or prospective Cisco Unified Communications Manager customers with existing investments in Microsoft Office Communications Server (OCS) seeking to enable real-time UC experience from existing Microsoft Office Communicator presence & IM client.

Key Features and Benefits

· Integrated Cisco IP softphone—Click to call directly from your desktop to have a business-class communication experience with embedded Cisco IP softphone.
· Cisco IP phone quality & rich mid-call control—Have a business-class desktop communications experience with the quality and reliability that you experience with your Cisco IP deskphone in the office.
· Deskphone control—Simply click to make or answer business calls through your desk phone using its calling features & resources to have a rich communications experience.
· Phone presence—Adds telephony presence to your contact list - providing additional information on when the contact might be available.
· One click voice messages & communications history access—With a mouse click, access your corporate voice messages and communications history and rapidly respond to voice messages or missed calls.
· Impromptu multiparty conferencing—If you need to initiate an impromptu collaboration session with multiple contacts on your contact list, you can also initiate multiparty conference calls from your desktop and quickly add additional participants.

Select Product Parts and Ordering Information

UCIMOC-7.1-K9	Cisco Unified Communications Integration™ for Microsoft Office Communicator
UCIMOC-7.1-LIC	Cisco Unified Communications Integration™ for Microsoft Office Communicator License

For More Information

http://www.cisco.com/go/ucintegrationmicrosoft

Cisco Unified Communications 500 Series

The Cisco Unified Communications 500 Series for Small Business is an affordable unified communications appliance that provides voice, data, voicemail, automated attendant, video, security, and wireless capabilities while integrating with existing desktop applications such as calendar, email, and CRM programs. This easy-to-manage platform supports up to 104 IP phones and voice mailboxes and provides flexible deployment options based on your needs, with a wide array of IP phones, PSTN interfaces, and Internet connectivity options.

Key Features and Benefits

· Robust legacy telephony features, including directory, paging, intercom, call coverage, call park, music on hold (MoH), night bell, hunt groups, direct inward dialing, and ad hoc and meet-me conferencing

- Support for Cisco Smart Business Productivity Applications (Cisco TimeCardView, Cisco WebEx® PhoneConnect, and Single Number Reach)
- Support for multisite deployments
- System monitoring through third-party partner monitoring software and services
- Support for the Cisco Unified IP Phones 7900 Series and Cisco SPA 500 Series IP Phones
- Cisco MonitorView, enabling employees to speak to and see someone in an unattended lobby from a Cisco SPA 525G phone

Specifications

Cisco Unified Communications 520						
Part Number	IP Phones	IP Phones Upgradable to	FXO/FXS	T1/E1 Support	BRI Support	Integrated Wireless
UC520-8U-4FXO-K9	8	16	4/4	No	No	No
UC520W-8U-4FXO-K9	8	16	4/4	No	No	Yes
UC520-8U-2BRI-K9	8	16	0/4	No	2	No
UC520W-8U-2BRI-K9	8	16	0/4	No	2	Yes
UC520-16U-4FXO-K9	16	24	4/4	No	No	No
UC520W-16U-4FXO-K9	16	24	4/4	No	No	Yes
UC520-16U-2BRI-K9	16	24	0/4	No	2	No
UC520W-16U-2BRI-K9	16	24	0/4	No	2	Yes
UC520-24U-8FXO-K9	24	32/48	8/4	No	No	No
UC520-24U-4BRI-K9	24	32/48	0/4	No	4	No
UC520-32U-8FXO-K9	32	48	8/4	No	No	No
UC520-32U-4BRI-K9	32	48	0/4	No	4	No
UC520-48U-8FXO-K9	48	64	12/4	No	No	No
UC520-48U-6BRI-K9	48	64	0/4	No	6	No
UC520-48U-T/E/F-K9	48	64	4/4	1	No	No
UC520-48U-T/E/B-K9	48	64	0/4	1	2	No
Cisco Unified Communications 540 and 560						
UC560-FXO-K9	16	104	4/4	No	No	No
UC560-BRI-K9	16	104	0/4	No	2	No
UC560-T1E1-K9	16	104	4/4	1	No	No
UC540W-FXO-K9	8	32	4/4	No	No	Yes
UC540W-BRI-K9	8	32	0/4	No	2	Yes

Selected Part Numbers and Ordering Information

UC520-8U-FXO/BRI or UC520W-8U-FXO/BRI	Unified Communications (UC) 500 Series Model 520 with 8 User Licenses for UC and integrated messaging, 4 Foreign Exchange Office (FXO) or 2 Basic Rate Interface (BRI) ports, 8 Power over Ethernet (PoE) 10/100 Ethernet ports, 1 VIC slot. Optional integrated wireless.
UC520-16U-FXO/BRI or UC520W-16U-FXO/BRI	UC 500 Series Model 520 with 16 User Licenses for UC and integrated messaging, 4 FXO or 2 BRI ports, 8 PoE 10/100 Ethernet ports, 1 VIC slot. Optional integrated wireless. Up to 16 employees.
UC520-24U-FXO or UC520-24U-BRI	UC 500 Series Model 520 with 24 User Licenses for UC and integrated messaging, 8 FXO or 4 BRI ports, 8 PoE 10/100 Ethernet ports, 1 VIC slot. Up to 64 employees.
UC520-32U-FXO or UC520-32U-BRI	UC 500 Series Model 520 with 32 User Licenses for UC and integrated messaging, 8 FXO or 4 BRI ports, 8 PoE 10/100 Ethernet ports, 1 VIC slot. Up to 64 employees.
UC520-48U-FXO or UC520-48U-BRI	UC 500 Series Model 520 with 32 User Licenses for UC and integrated messaging, 12 FXO or 6 BRI ports, 8 PoE 10/100 Ethernet ports, 1 VIC slot. Up to 64 employees.
UC520-48U-T/E/F or UC520-48U-T/E/B	UC 500 Series Model 520 with 32 User Licenses for UC and integrated messaging, T1, 8 PoE 10/100 ports, 1 VIC slot. Up to 64 employees.
UC540W-FXO-K9	UC 500 Series Model 540 with 8 User Licenses for UC and integrated messaging, 4 FXO ports, 8 PoE 10/100 Ethernet ports, integrated wireless, and 1 voice interface card (VIC) slot. Up to 32 employees.

UC540W-BRI-K9	UC 500 Series Model 540 with 8 User Licenses for UC and integrated messaging, 2 BRI ports, 8 PoE 10/100 Ethernet ports, integrated wireless, and 1 VIC slot. Up to 32 employees.
UC560-FXO-K9	UC 500 Series Model 560 with 4 FXO, 4 Foreign Exchange Service (FXS), and 2 VIC expansion slots. Up to 104 employees.
UC560-BRI-K9	UC 500 Series Model 560 with 2 BRI, 4 FXS, and 2 VIC expansion slots. Up to 104 employees.
UC560-T1E1-K9	UC 500 Series Model 560 system with 4 FXO, 4 FXS, 1 T1/E1 and 1 VIC expansion slot. Up to 104 employees.

For More Information

http://www.cisco.com/go/uc500

Cisco Unified Communications on the Cisco Unified Computing System

The Cisco Unified Computing System is our next-generation integrated data center system designed to streamline data center operations. Optimized to run on the Cisco Unified Computing System, Cisco Unified Communications can provide new levels of performance, lower cost of ownership, and increased operational productivity. Cisco Unified Communications on the Cisco Unified Computing System is composed of Cisco Unified Communications applications running in a virtualized environment, consisting of VMware software, Cisco Unified Computing System servers, and Fibre Channel storage-area-network (SAN) storage.

Primary capabilities include:

· Deployment flexibility for easy adaptation to your business, improving productivity and resource use
· Improved total cost of ownership, with fewer infrastructure components to purchase and fewer elements to manage
· Scalability so that you can add more software and services without increasing cooling, power, space, or cabling costs
· Management tool consolidation, so administrators can use familiar single tools or sets of tools, reducing operating costs
· Simpler installation and upgrades through service profiles, virtual machines, and centralized management

For More Information

http://www.cisco.com/go/uconucs

Cisco Unified Border Element

The Cisco Unified Border Element (Cisco UBE) is an intelligent unified communications network element. The Cisco Unified Border Element, in addition to other Cisco IOS Software features, includes session border controller (SBC) functions that enable end-to-end IP-based transport of voice and video traffic between independent unified communications networks in a secure and manageable manner. SBCs are critical components for scaling unified communications networks from being "IP islands" within a single customer network to becoming an end-to-end IP community. One of the most significant uses of the Cisco Unified Border Element is to allow call control elements such as Cisco Unified Communications Manager to connect to service providers for public-switched-telephone-network (PSTN) access offerings over Session Initiation Protocol (SIP) trunks. Today, the Cisco UBE is used as an IP-to-IP gateway by service provider, enterprise, and commercial customers to interconnect SIP and H.323 voice, video and TelePresence networks.

Ideal for Companies That Need These Features

Cisco Unified Border Element	· Session management—Counts and manages the number of sessions flowing through a router · Interworking—Interconnects different signaling methods and variants · Demarcation—Acts as a distinct demarcation point between the two networks · Security—Acts as a Layer 7 device that intelligently allows or disallows traffic between networks

Key Features and Benefits

The Cisco Unified Border Element delivers the following features and benefits:

· Essential voice and video network border security features
· Privacy features for hiding internal network address structure from other administrative domains
· Layer 7 application layer gateway features
· Interworking features for interconnecting different voice-over-IP (VoIP) network types, such as H.323-to-SIP
· Dual tone multifrequency (DTMF) interworking and conversion
· Transcoding from one codec to another to allow interoperability between endpoints without a common codec
· Call admission control to protect the enterprise network from being overwhelmed by external call volume
· Codec negotiation and filtering by restricting codecs advertised on outbound call legs
· Billing and call detail records

- Simultaneous operation with TDM gateways on Cisco integrated service routers, permitting graceful migration from TDM to IP trunking
- Offering protocol conversion between H.323 and SIP
- Providing SIP trunk toll fraud protection
- Secure enterprise interconnect demarcation for a Service Provider SIP trunk
- Simultaneous operation with Survivable Remote Site Telephony to provide failover PSTN access
- Support for Lawful Intercept capabilities
- Configurable Session Initiation Protocol (SIP) trunk header manipulation features
- Available in various licensing configurations to match customer capacity and price-point needs

Selected Part Numbers and Ordering Information

FL-CUBE-25(=)	Feature license applicable to any Cisco 2800 or 3800 IOS platforms for 25 simultaneous calls
FL-CUBEE-1000(=)	Feature license applicable to any Cisco IOS 2900 or 3900 platforms for1000 simultaneous calls
FLASR1-CUBEE-4KP	Feature license applicable to any Cisco IOS ASR 1000 platforms for4000 simultaneous calls
FL-INTVVSRV-5X(=)	Cisco AS5350XM & AS5400XM Integrated Voice Video License: IP-to-IP Gateway

For More Information

http://www.cisco.com/en/US/products/sw/voicesw/ps5640/index.html

Cisco Voice Gateways

Cisco voice gateways support traditional analog devices (analog phones, fax machines, and so on) while taking advantage of the new capabilities of unified communications.

Cisco VG200 Series Gateways provide:
- High-density gateways for centralized deployments of analog phones, fax machines, modems, voicemail systems, and speakerphones
- Low-density gateways for distributed deployments of analog phones, fax machines, modems, and speakerphones
- A broad range of features for enterprise voice systems based on Cisco Unified Communications Manager or Cisco Unified Communications Manager Express

Cisco offers the Cisco VG202 and VG204 (low density), and the Cisco VG224, VG248, and 112-FXS Bundle (high density) dedicated analog voice gateways. The full line of Cisco access and integrated routers can also add analog and digital voice gateway functions through the use of network modules and voice interface cards.

Ideal for Companies That Need These Features

Cisco VG202 2-Port Analog Phone Gateway	· Skinny Client Control Protocol (SCCP), Media Gateway Control Protocol (MGCP), Session Initiation Protocol (SIP), or H.323 support for analog ports · Cost-effective, desktop form factor with a fanless design, FXS interfaces for Cisco Unified Communications Manager Express (CME) or Cisco Unified Communications Manager applications
Cisco VG224 24-Port Analog Phone Gateway	· SCCP, MGCP, SIP, or H.323 support for analog ports · Cost-effective, 1-rack unit (1RU), FXS interfaces for Cisco Unified CME or Cisco Unified Communications Manager applications · High concentration of analog voice ports for basic calls, with supplementary services such as transfer, hold, park, and pickup
Cisco 112-FXS Bundle— 112-port Analog Phone Gateway Bundle	· 112 FXS ports, out of which 80 ports have DID capability · Each port supports 5 REN, for a total of 192 REN per chassis · Comprises of 4 EVM analog modules, 4 VIC3 analog interface cards, and one PVDM3-256 DSP card · SCCP, MGCP, H.323 or SIP support for analog ports · 3-rack unit (3RU), FXS interfaces for Cisco Unified CME or Cisco Unified Communications Manager applications · High concentration of analog voice ports for basic calls, with supplementary services such as transfer, hold, park, and pickup · Higher default on-hook voltage · Cisco Configuration Professional (GUI based tool) Support

Key Features and Benefits

- Cisco VG202 and VG204 Analog Phone Gateways
  - 2 and 4 full-featured analog phone lines, respectively, for use as extensions to Cisco Unified Communications Manager or Cisco Unified Communications Manager Express systems in a desktop form factor with a fanless design.
  - Based on a Cisco IOS Software platform, the Cisco VG204 and Cisco VG202 offer identical functions and support similar network topologies as the Cisco VG224.
- Cisco VG224 Analog Phone Gateway

- High-density, 24-port Cisco IOS Software gateway for analog phones, fax machines, modems, and speakerphones within an enterprise voice system based on Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.
- Integration with the IP-based phone system increases manageability, scalability, and cost-effectiveness.
- Commercial businesses can use the Cisco VG224 in conjunction with Cisco Unified Communications Manager Express to effectively augment an integrated services router environment.
- With Cisco Unified Communications Manager or Cisco Unified Communications Manager Express, the Cisco VG224 can provide supplementary analog services while using the Cisco IOS Software gateway for reliable fax and modem delivery.

- Cisco VG248 48-Port Analog Phone Gateway
  - 1-unit-high, rack-mountable device allowing 48 analog devices (phones, fax machines, and modems) to be used with Cisco Unified Communications Manager.
  - Organizations with large numbers of analog phones can deploy IP telephony while maintaining the investment in traditional handsets. The analog lines are full-featured, with caller ID, message waiting lights, and feature codes. The price per port is competitive with a traditional private branch exchange (PBX).
  - Supports the traditional voicemail Simple Message Desk Interface (SMDI) voicemail interface that allows the connection of a Cisco Unified Communications Manager network to a traditional voicemail system. It also allows the sharing of existing SMDI-based voicemail systems between the Cisco Unified Communications Manager and the traditional PBX.

- Cisco 112-FXS Bundle—112-Port Analog Phone Gateway Bundle
  - High-density, 112-port Cisco voice gateway for analog phones, fax machines, modems, and speakerphones within an enterprise voice system based on Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.
  - Any 80 ports can be used as Direct Inward Dialing (DID) facility.
  - Organizations with large numbers of analog phones can deploy IP telephony while maintaining the investment in traditional handsets. The analog lines are full-featured, with caller ID, message waiting lights, and feature codes.
  - Cisco 112-FXS Bundle is built on Cisco Integrated Services Routers Generation 2 (ISR G2) platform powered by high-performance multicore processors.
  - Power redundancy is available by installing an optional integrated RPS, thereby decreasing network downtime and protecting the network from power-supply failures.
  - It supports new generation high-capacity digital signal processors (DSPs).

Selected Part Numbers and Ordering Information

VG202	Cisco VG202 analog phone gateway
VG204	Cisco VG204 analog phone gateway
VG224	Cisco VG224 analog phone gateway
C3945-112FXS/K9	Cisco 112-FXS Bundle

For More Information

http://www.cisco.com/go/vg

Cisco AS5350XM Universal Gateway

The Cisco AS5350XM Universal Gateway is a 1-rack-unit (1RU) gateway supporting 2- to 16-port T1/E1 or 1 CT3 configurations. The Cisco AS5350XM provides voice, fax, data, and session-border-control (SBC) services on any port at any time. This cost-effective platform is ideally suited for service provider and enterprise environments.

Ideal for Companies That Need These Features

Cisco AS5350XM Universal Gateway
- High density in a small footprint (up to 16 CT12/CE1 or 1 CT3, any codec type, fax protocol or modem type)
- High-performance voice, fax, data, and session-border-control (SBC) services
- Concurrent voice gateway and SBC
- High call rates (up to 20 calls per second)
- Enhanced performance for processor-intensive Tool Command Language (TCL) or VoiceXML scripting for complex voice services
- T.38 real-time fax relay, T.37 fax store and forward, fax detection, and unified communications

Key Features and Benefits

- The Cisco AS5350XM Universal Gateway is ideally suited for service provider and enterprise environments that require innovative voice, fax, and data services.
- This universal gateway has a 1-rack unit (1RU), CT3-capable universal gateway with hot-swappable cards and internal redundant power supply.
- This universal gateway offers best-in-class voice, fax, remote access, and session-border-control (SBC) services.
- The gateway provides concurrent gateway and SBC operation.

- This gateway includes the following feature cards: 4 or 8 T1/E1/Primary Rate Interface (PRI) feature cards (ISDN calls terminated on the card); CT3 feature card; 60- or 108-channel universal port feature card; and 384-channel voice feature card.
- This gateway has two 10/100/1000 autosensing Gigabit Ethernet LAN ports.
- This gateway has redundant 8-Mbps serial backhaul ports for Frame Relay, High-Level Data Link Control (HDLC) or Point-to-Point Protocol (PPP) WAN backhaul.
- The gateway provides one fast console port for local administrative access and one auxiliary port for remote administrative access, as well as redundant LAN and WAN backhaul ports.
- The gateway is European Telecommunications Standards Institute/Network Equipment Building Standards (ETSI/NEBS) Level 3 compliant, and has a redundant AC or DC power supply with dual fans.
- The gateway is interoperable with the Cisco Signaling System 7 (SS7) Interconnect for Voice Gateway (signaling gateway).

Specifications

Feature	Cisco AS5350XM
Processor	750 MHz RISC processor
SDRAM	512 MB (default), 1 GB (maximum)
System Flash	128 MB (default), 1 GB (maximum)
Feature Card Slots	3 slots
Trunk Feature Cards	2 T1/E1/PRI, 4 T1/E1/PRI, 8 T1/E1/PRI, 1 CT3
DSP Feature Cards	60 Universal port card, 108 Universal port card 384 port voice/fax card
Egress Ports	2 10/100/1000 autosensing Gigabit Ethernet LAN ports 2 8-Mbps serial ports T1/E1 DS1 and CT3 trunk feature cards
LAN Protocols	IP, IPX, AppleTalk, DECnet, ARA, NetBEUI, bridging, HSRP, 802.1Q
WAN Protocols	Frame Relay, PPP, HDLC (leased line)
Routing Protocols	Routing Information Protocol (RIP), RIPv2, OSPF, IGRP, EIGRP, BGPv4, IS-IS, AY-EIGRP, IPX-EIGRP, Next Hop Resolution Protocol (NHRP), AppleTalk Update-based Routing Protocol (AURP)
QoS Protocols	IP Precedence, Resource Reservation Protocol (RSVP), Weighted Fair Queuing (WFQ), Weighted Random Early Detection (WRED), Multichassis Multilink PPP (MMP), fragmentation and interleaving, 802.1P
Access Protocols	PPP, Serial Line Internet Protocol (SLIP), TCP Clear, IPXCP, ATCP, ARA, NBFCP, NetBIOS over TCP/IP, NetBEUI over PPP, protocol translation (PPP, SLIP, ARA, X.25, TCP, local-area transport [LAT], Telnet), and Xremote
Bandwidth Optimization	Multilink PPP (MLPPP), TCP/IP header compression, Bandwidth Allocation Control Protocol (BACP)
Voice Compression	G.711, G.723.1 (5.3K and 6.3K), G.726, G.729ab, G. Clear, GSM-FR, AMR-NB, iLBC
DSP Voice Features	Echo cancellation, programmable up to 128 MB; Voice activity detection, silence suppression, comfort noise generation; Fixed and adaptive jitter buffering; Call progress tone detection and generation—Dial tone, busy, ring-back, congestion, and re-order tones with local country variants; DTMF, Multifrequency (MF); Continuity Testing (COT)
Voice and Fax Signaling Protocols	H.323v2, H.323v3, H.323v4, SIP, MGCP 1.0, TGCP 1.0, Voice XML, Real-Time Streaming Protocol (RTSP), Extended Simple Mail Transfer Protocol (ESMTP); T.38 real-time fax relay; T.37 fax store and forward; Fax detection; Fax and modem passthrough; Open Settlements Protocol (OSP); Media Recording Control Protocol (MRCP); TTS Servers; ASR Servers
SS7	Integrated Signaling Link Terminal (ISLT), MTP1, MTP2, IUA, RUDP backhaul
Network Security	RADIUS or TACACS+, PAP, CHAP, and MSCHAP authentication, local user/password database DNIS, CLID, call-type pre-authentication Inbound/outbound traffic filtering (including IP, IPX, AppleTalk, bridged traffic) Network Address Translation (NAT) and dynamic access lists (ACLs) SNMPv2, SNMPv3, SSHv2 H.235
Virtual Private Networking	IP Security (IPSec) and policy enforcement (RADIUS or TACACS+) L2TP, Layer 2 Forwarding (L2F), and generic routing encapsulation (GRE) tunnels Firewall security and intrusion detection QoS features (committed access rate [CIR], Random Early Detection [RED], IP Precedence, policy-based routing)
Session Border Control	H.323 to H.323 (including Cisco Unified Communications Manager); H.323 to SIP (including Cisco Unified Communications Manager); SIP to SIP (including Cisco Unified Communications Manager); 1000 concurrent calls with 2000 sessions in flow-through mode
Channelized T1	Robbed-bit signaling; Loop Start; Immediate Start, and Wink Start Protocols

Channelized E1	CAS, PR1, E1 R2, leased line, Frame Relay, G.703, G.704
ISDN Protocols Supported	Sync mode PPP, V.110 at rates up to 38400 bps; Network- and user-side ISDN; NFAS with backup D-channel; QSIG, Feature Group B, Feature Group D; DoVBS
Modem Protocols Supported	V.90 or V.92 standard supporting rates of 56000 to 28000 in 1333 bps increments; V.92 Modem on Hold and Quick Connect; V.44 Compression supporting increased throughput by more than 100 percent for Internet browsing; K56Flex at 56000 to 32000 in 2000-bps increments ITU-T V.34 Annex 12 at 33600 and 31200 bps; ITU-T V.34 at 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, or 2400 bps; V.32bis 14400, 12000, 9600, 7200, 4800; V.32 9600, 4800; V.22bis 2400, 1200; V.21 300; Bell 103, 300; V.22 1200; V.23 1200/75; ITU-T V.42 (including Microcom Networking Protocol [MNP] 2-4 and Link Access Procedure for Modems [LAPM] error correction; ITU-T V.42bis (1000 nodes) and MNP 5 data compression; Async-mode PPP
Full Cisco IOS Software Support	IP Plus and Enterprise Plus feature sets including 3DES and Lawful Intercept images
Console and Auxiliary Ports	Asynchronous serial (RJ-45)
Chassis	Dimensions (H x W x D): 1.75 x 17.5 x 20.5 in.; Weight (fully loaded): 22 lbs. (10 kg)
Memory Information	· Main SDRAM—2 slots, 512 MB default memory, 1 GB max memory · System Flash—1 slot, 128 MB default memory, 1 GB max memory

For More Information

http://www.cisco.com/en/US/products/hw/iad/index.html.

Cisco AS5400XM Universal Gateway

The Cisco AS5400XM Universal Gateway offers exceptional capacity in only two rack units (2RU) and provides voice, fax, and data services on any port at any time. High-density (up to one CT3 of voice over IP [VoIP] and two CT3 of time-division multiplexing [TDM] switching), low-power consumption (as low as 3.5A at 48 VDC per CT3 of G.711), and universal port digital signal processors (DSPs) make the Cisco AS5400XM Universal Gateways ideal for many network deployment architectures, especially co-location environments and mega points of presence (POPs).

Ideal for Companies That Need These Features

Cisco AS5400XM Universal Gateway
- High density in a small footprint (up to 24 CT1/20CE1 or 1 CT3, any codec type, fax protocol or modem type)
- High-performance voice, fax, data, and SBC services
- Concurrent voice gateway and SBC
- High call rates (up to 20 calls per second)
- Enhanced performance for processor-intensive TCL or VoiceXML scripting for complex voice services
- T.38 real-time fax relay, T.37 fax store and forward, fax detection, and unified communications

Key Features and Benefits

- The Cisco AS5400XM Universal Gateway is ideally suited for service provider and enterprise environments that require innovative voice, fax, and data services.
- This universal gateway has a 2-rack unit (2RU), CT3-capable universal gateway with hot-swappable cards and internal redundant power supply.
- This universal gateway offers best-in-class voice, fax, remote access, and session-border-control (SBC) services.
- The gateway provides concurrent gateway and SBC operation.
- This gateway includes the following feature cards: 2, 4, or 8 T1/E1/Primary Rate Interface (PRI) feature cards (ISDN calls terminated on the card); CT3 feature card; 60- or 108-channel universal port feature card; and 384-channel voice feature card.
- This gateway has two 10/100/1000 autosensing Gigabit Ethernet LAN ports.
- This gateway has redundant 8-Mbps serial backhaul ports for Frame Relay, High-Level Data Link Control (HDLC) or Point-to-Point Protocol (PPP) WAN backhaul.
- The gateway provides one fast console port for local administrative access and one auxiliary port for remote administrative access, as well as redundant LAN and WAN backhaul ports.
- The gateway is European Telecommunications Standards Institute/Network Equipment Building Standards (ETSI/NEBS) Level 3 compliant, and has a redundant AC or DC power supply with dual fans.
- The gateway is interoperable with the Cisco Signaling System 7 (SS7) Interconnect for Voice Gateway (signaling gateway).

Specifications

Feature	Cisco AS5400XM
Processor	750 MHz RISC processor
Calls Supported	Voice, fax, and remote access services to 648 concurrent calls (to 1CT3/16E1s)

SDRAM	512 MB (default), 1 GB (maximum)
Boot Flash	N/A
System Flash	128 MB (default), 1 GB (maximum)
Feature Card Slots	7
Trunk Feature Cards	4 T1/E1/PRI, 8 T1/E1/PRI, 1 CT3
DSP Feature Cards	60 Universal port card, 108 Universal port card 384 low complexity, 192 medium complexity or 144 high complexity port voice/fax card
Egress Ports	2 10/100/1000 autosensing Gigabit Ethernet LAN ports 2 8-Mbps serial ports; T1/E1 DS1 and CT3 trunk feature cards
LAN Protocols	IP, IPX, AppleTalk, DECnet, ARA, NetBEUI, bridging, HSRP, 802.1Q
WAN Protocols	Frame Relay, PPP, HDLC (leased line)
Routing Protocols	Routing Information Protocol (RIP), RIPv2, OSPF, IGRP, EIGRP, BGPv4, IS-IS, AY-EIGRP, IPX-EIGRP, Next Hop Resolution Protocol (NHRP), AppleTalk Update-based Routing Protocol (AURP)
QoS Protocols	IP Precedence, Resource Reservation Protocol (RSVP), Weighted Fair Queuing (WFQ), Weighted Random Early Detection (WRED), Multichassis Multilink PPP (MMP), fragmentation and interleaving, 802.1P
Access Protocols	PPP, Serial Line Internet Protocol (SLIP), TCP Clear, IPXCP, ATCP, ARA, NBFCP, NetBIOS over TCP/IP, NetBEUI over PPP, protocol translation (PPP, SLIP, ARA, X.25, TCP, local-area transport [LAT], Telnet), and Xremote
Bandwidth Optimization	Multilink PPP (MLPPP), TCP/IP header compression, Bandwidth Allocation Control Protocol (BACP)
Voice Compression	G.711, G.723.1 (5.3K and 6.3K), G.726, G.729ab, G. Clear, GSM-FR, AMR-NB, iLBC
DSP Voice Features	Echo cancellation, programmable up to 128 MB; Voice activity detection, silence suppression, comfort noise generation; Fixed and adaptive jitter buffering; Call progress tone detection and generation—Dial tone, busy, ring-back, congestion, and re-order tones with local country variants; DTMF, Multifrequency (MF); Continuity Testing (COT)
Virtual Private Networking	IP Security (IPSec) and policy enforcement (RADIUS or TACACS+) L2TP, Layer 2 Forwarding (L2F), and generic routing encapsulation (GRE) tunnels Firewall security and intrusion detection QoS features (committed access rate [CIR], Random Early Detection [RED], IP Precedence, policy-based routing)
Session Border Control	H.323 to H.323 (including Cisco Unified Communications Manager); H.323 to SIP (including Cisco Unified Communications Manager); SIP to SIP (including Cisco Unified Communications Manager) 1000 concurrent calls with 2000 sessions in flow-through mode
Voice and Fax Signaling Protocols	H.323v2, H.323v3, H.323v4, SIP, MGCP 1.0, TGCP 1.0, Voice XML, Real-Time Streaming Protocol (RTSP), Extended Simple Mail Transfer Protocol (ESMTP); T.38 real-time fax relay; T.37 fax store and forward; Fax out (transmission) Group 3, standards EIA 2388 Class 2 and EIA 592 Class 2.0 at modulations V.33, V.17, V.29, V.27ter, V.21; ITU-T T.30, T4; Fax detection; Fax and modem passthrough; Open Settlements Protocol (OSP), Media Recording Control Protocol (MRCP); TTS Servers; ASR Servers
Channelized T1	Robbed-bit signaling; Loop Start; Immediate Start, and Wink Start Protocols
Channelized E1	CAS, PR1, E1 R2, leased line, Frame Relay, G.703, G.704
ISDN Protocols Supported	Sync mode PPP, V.110 at rates up to 38400 bps; Network- and user-side ISDN; NFAS with backup D-channel; QSIG, Feature Group B, Feature Group D; DoVBS
Modem Protocols Supported	V.90 or V.92 standard supporting rates of 56000 to 28000 in 1333-bps increments; V.92 Modem on Hold and Quick Connect; V.44 Compression supporting increased throughput by more than 100 percent for Internet browsing; K56Flex at 56000 to 32000 in 2000-bps increments; ITU-T V34 Annex 12 at 33600 and 31200 bps; ITU-T V.34 at 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, or 2400 bps; V.32bis 14400, 12000, 9600, 7200, 4800; V.32 9600, 4800; V.22bis 2400, 1200; V.21 300; Bell 103, 300; V.22 1200; V.23 1200/75; ITU-T V.42 (including Microcom Networking Protocol [MNP] 2-4 and Link Access Procedure for Modems [LAPM] error correction; ITU-T V.42bis (1000 nodes) and MNP 5 data compression; Async-mode PPP
Full Cisco IOS Software Support	IP Plus and Enterprise Plus feature sets including 3DES and Lawful Intercept images
Console and Auxiliary Ports	Asynchronous serial (RJ-45)
Chassis	Dimensions (H x W x D): 3.5 x 17.5 x 18.25 in.; Weight (fully loaded): 35 lbs. maximum (15.8 kg)
Memory Information	· Main SDRAM—2 slots, 512 MB default memory, 1 GB max memory · System Flash—1 slot, 128 MB default memory, 1 GB max memory

Cisco ATA 187 Analog Telephone Adaptor

The Cisco ATA 187 Analog Telephone Adaptor brings analog telephones into the networked world. The Cisco ATA 187 addresses enterprise, business local services, small-office environments, and the emerging managed hosted services market by enabling analog devices, such as phones and fax machines, to support voice-over-IP (VoIP) services. It is an ideal solution to complement large IP Phone deployments or installation environments where cabling can be difficult (such as in retail and manufacturing facilities) or where customers seek a cost-effective solution to interoperate with Cisco Unified Communications Manager but do not require a high-degree of functionality.

The Cisco ATA 187 Analog Telephone Adaptor will support line-side Session Initiation Protocol (SIP) based on Unified Communications Manager 7.1x. It will not support Cisco Skinny Protocol (SCCP).

Ideal for Companies That Need These Features

Cisco ATA 187 Analog Telephone Adaptor	· Analog devices such as phones and fax machines enabled to support VoIP services by converting the analog signal into an IP signal · Continuing use of existing analog phones with IP network

Key Features and Benefits

· Autoprovisioning with Trivial File Transfer Protocol (TFTP) provisioning servers
· Automatic assignment of IP address, network route IP, and subnet mask through Dynamic Host Configuration Protocol (DHCP)
· Configuration as per Cisco endpoint devices
· Touch-tone telephone keypad configuration with voice prompt
· Administrative password to protect configuration and access
· Remote upgrades through network
· Advanced pre-processing to optimize full duplex voice compression
· High performance line-echo cancellation eliminates noise and echo
· Voice Activity Detection (VAD) and Comfort Noise Generation (CNG) save bandwidth delivering voice, not silence
· Dynamic network buffering to reduce packet loss
· Session Initiation Protocol Line Side for interoperability with Cisco Unified Communications Manager SIP-based systems (7.1x and later)
· T.38 fax support
· sRTP/TLS over SIP for secure media and signaling paths

Specifications

Feature	Cisco ATA 187 Analog Terminal Adapter
Telephone and network interfaces	2 RJ-11 FXS ports 1 Fast Ethernet (FE) LAN port
Dimensions (H x W x D)	1.5 x 6.5 x 5.75 in. (3.8 x 16.5 x 14.6 cm)
Weights	15 oz. (425 gm)
VoIP Protocols	Session Initiation Protocol (SIP) line side based on Unified Communications Manager 7.1x. Cisco Skinny Protocol (SCCP) is not supported.

Selected Part Numbers and Ordering Information

ATA187-I1-A	Cisco ATA 187 Analog Terminal Adaptor

A power supply cable for the ATA 187 Analog Terminal Adaptor is required and is regionally dependent. See the Cisco Unified IP Phone Ordering Guide for additional details.

For More Information

http://www.cisco.com/en/US/products/hw/gatecont/ps514/index.html

Cisco Unified Workspace Licensing

Cisco Unified Workspace Licensing allows organizations to cost-effectively access a wide range of Cisco Unified Communications applications and services in a cost effective, simple package. It includes client and server software, licensing, service and support, and software subscription on a per-user basis.

Cisco Unified Workspace Licensing is available in four versions to meet a variety of customer needs:

- Business Edition— Built on the Cisco Unified Communications Manager Business Edition platform, this edition offers call control, voice messaging, unified clients, mobility, and presence in a package optimized to the need of medium-sized businesses.
- Entry Edition—This edition provides basic dial tone and mobility features.
- Standard Edition—This edition provides the same benefits as Business Edition, but is optimized for larger businesses.
- Professional Edition—This edition includes all features in Standard Edition plus mobile communicator client, audio, video and web conferencing, and other advanced capabilities.

Ideal for Companies That Need these Features

Cisco Unified Workspace Licensing
- Complete, media-rich collaboration experience for all their users across their workspace
- Flexibly deploy collaboration applications as their evolving business needs dictate
- Timely access to Cisco's latest software updates for major, minor, and maintenance releases, as well as online tools and communities that help solve issues quickly.
- Offer workspace applications at a more affordable initial cost of acquisition
- A simplified way to purchase and manage licensing, service and support

Specifications

Function	Included in Cisco Unified Workspace Licensing	Business Edition	Entry Edition	Standard Edition	Professional Edition
Video conferencing	Cisco Unified MeetingPlace (7.0 and higher)	No	No	No	Yes
Web conferencing	Cisco WebEx Meeting Center or Cisco Unified MeetingPlace	No	No	No	Yes
Audio conferencing	Cisco Unified MeetingPlace	No	No	No	Yes
Mobile phone client	Cisco Unified Mobile Communicator Client	No	No	No	Yes
Contact Center	Cisco Unified Contact Center Express	No	No	No	Yes
Presence	Cisco Unified Presence Profile	Yes	No	Yes	Yes
Mobility (with Sim ring services)	Cisco Unified Mobility Profile	Yes	Yes	Yes	Yes
Soft client	Cisco Unified Personal Communicator, Cisco Unified IP Communicator, or Cisco Unified Communications Integration for Cisco WebEx Connect or Microsoft Office Communicator; Cisco Unified Video Advantage may also be added	Yes	Yes, Cisco IP Communicator only	Yes	Yes
Messaging	Cisco Unity or Cisco Unity Connection	Cisco Unity Connection only	No	Yes	Yes
Phone and call control	License for one or unlimited number of Cisco IP phones per user	One	One	One	Unlimited

Call control	Starting platform	Cisco Unified Communications Manager Business Edition	Cisco Unified Communications Manager	Cisco Unified Communications Manager	Cisco Unified Communications Manager
	Cisco Intercompany Media Engine	Yes	Yes	Yes	Yes
Session Management	Cisco Unified Communications Manager Session Management Edition	No	No	No	Yes
User count	Supported user counts	50–500	100+	100+	100+

Selected Part Numbers and Ordering Information

Product Number	Description	UCSS Product Number	Product Number
LIC-UWL-ENTRY	Unified Workspace Licensing Entry, 1 User	UCSS-UWL-ENTRY	CON-ESW-UWLET1 CON-ESW-UWLET1K CON-ESW-UWLET10K
LIC-UWL-PRO	Unified Workspace Licensing PRO, 1 User	UCSS-UWL-PRO	CON-ESW-PRO1 CON-ESW-PRO1K CON-ESW-PRO10K
LIC-UWL-STD	Unified Workspace Licensing STD, 1 User	UCSS-UWL-STD	CON-ESW-UWLST1 CON-ESW-UWLST1K CON-ESW-UWLST10K

For More Information

http://www.cisco.com/go/cuwl

Cisco Unified Communications Software Subscription

Cisco Unified Communications Software Subscription increases business value by providing an economical and timely approach to upgrading to new Cisco technology, thereby optimizing return on investment (ROI) and reducing total cost of ownership (TCO) for Cisco Unified Communications Solutions. You are able to:

- Stay up-to-date—Get the latest product enhancements whenever there is a Cisco Unified Communications major software release, at no additional charge.
- Stay protected—During the term of your subscription agreement, you have guaranteed access to new software upgrades.
- Stay cost-effective—Whether you purchase a 1-, 2-, 3-, or 5-year subscription plan, Cisco Unified Communications Software Subscription can help you plan for the future while saving you money compared to repeat purchases of new software or individual upgrades.
- Stay productive—The process of planning, buying, deploying, and maintaining your Cisco Unified Communications upgrades is much easier and faster.

When combined with Cisco Unified Communications Essential Operate Service, you have timely access to Cisco's latest software updates for major, minor, and maintenance releases, as well as online tools and communities that help solve issues quickly.

Ideal for Companies That Need these Features

Cisco Unified Communications Software Subscription	· Maximizing return on investment and lower total ownership costs · Keeping pace with technology advancements and enhance productivity · Protecting Cisco Unified Communications investment in the future, regardless of what happens · Predicting and planning IP communications budgets over multiple years or budget only once

Selected Part Numbers and Ordering Information

CUWL-LIC, CUWLLIC-ADDON, L-CUWL-LICADDON, L-CUWL-MISC	Cisco Unified Communications Software Subscription for Cisco Unified Workspace Licensing
UCSS-UCM	Cisco Unified Communications Software Subscription for Cisco Unified Communications Manager
UCSS-CMBE	Cisco Unified Communications Software Subscription for Cisco Unified Communications Manager Business Edition
UCSS-SME	Cisco Unified Communications Software Subscription for Cisco Unified Communications Manager Session Management Edition
UCSS-ER	Cisco Unified Communications Software Subscription for Emergency Responder

UCSS-MSG	Cisco Unified Communications Software Subscription for Cisco Unity and Cisco Unity Connection
UCSS-MTNGPLACE	Cisco Unified Communications Software Subscription for Cisco Unified MeetingPlace
UCSS-VOIP	Cisco Unified Communications Software Subscription for Cisco Mobile Voice
UCSS-CUP	Cisco Unified Communications Software Subscription for Cisco Unified Presence
UCSS-UPC	Cisco Unified Communications Software Subscription for Cisco Unified Personal Communicator
UCSS-CCE	Cisco Unified Communications Software Subscription for Cisco Unified Contact Center Enterprise
UCSS-CCX	Cisco Unified Communications Software Subscription for Cisco Unified Contact Center Express
UCSS-CCH	Cisco Unified Communications Software Subscription for Cisco Unified Contact Center Hosted
UCSS-ICME	Cisco Unified Communications Software Subscription for Intelligent Contact Management Enterprise
UCSS-IPIVR	Cisco Unified Communications Software Subscription for IP Interactive Voice Response
UCSS-CVP	Cisco Unified Communications Software Subscription for Cisco Customer Voice Portal
UCSS-UAE	Cisco Unified Communications Software Subscription for Cisco Unified Application Environment

For More Information

http://www.cisco.com/go/ucss

Chapter 5: Security

This chapter provides only a subset of Cisco products and part numbers.

Security At-a-Glance		
Product	**Features**	**Page**
NETWORK SECURITY		
Cisco IOS Security	· Delivers a sophisticated set of security capabilities for a comprehensive, layered security approach throughout the network infrastructure · Technologies help to defend critical business processes against attack and disruption, protect privacy, and support policy and regulatory compliance controls	5–3
Cisco ASA 5500 Series Adaptive Security Appliances	· Easy-to-deploy solutions that integrate world-class firewall, unified communications (voice and video) security SSL and IPSec VPN, intrusion prevention systems (IPSs), content security services, and secure unified communications in a flexible, modular product family	5–4
Cisco Intrusion Prevention Systems (IPS)	· Accurately identify, classify, and stop malicious traffic, including worms, spyware, adware, network viruses, and application abuse, before they affect business resiliency	5–9
Cisco Catalyst 6500 Series Firewall Services Module	· High-speed, integrated firewall module for Cisco Catalyst 6500 Switches and Cisco 7600 Series Routers · Provides the fastest firewall data rates in the industry: 5-Gbps throughput, 100,000 cells per second (CPS), and 1 million concurrent connections · Up to four FWSMs can be installed in a single chassis, providing scalability to 20 Gbps per chassis · Based on Cisco PIX Firewall technology, the Cisco Catalyst 6500 FWSM offers large enterprises and service providers unmatched security, reliability, and performance	5–12
SECURE ACCESS CONTROL		
Cisco TrustSec Solution ***NEW SOLUTION***	· Builds security and intelligence into the network with policy-based access control, identity-aware networking, and data confidentiality and integrity · Helps you secure borderless networks with confidence, consistency, and efficiency	5–13
Cisco NAC Appliance (Clean Access) ***NEW UPDATES***	· Cisco NAC Appliance (formerly Cisco Clean Access) is an easily deployed Network Admission Control (NAC) product that uses the network infrastructure to enforce security policy compliance on all devices seeking to access network computing resources · Network administrators can authenticate, authorize, evaluate, and remediate wired, wireless, and remote users and their machines prior to network access	5–14
Cisco Secure Access Control System ***NEW UPDATES***	· Controls network access based on dynamic conditions and attributes · Next-generation platform for centralized network identity and access control · Simple yet powerful, rule-based policy model and a new, intuitive management interface designed for optimum control and visibility	5–15
E-MAIL AND WEB SECURITY		
Cisco IronPort E-mail Security Solutions	· Provides a multi-layer approach to stopping e-mail-based threats	5–18
Cisco IronPort Secure Web Gateway Security Appliances	· S-Series web security appliance combines traditional URL filtering, reputation filtering, malware filtering, and data security on a single platform to address the growing challenges of both securing and controlling web traffic	5–19
Cisco IronPort M-Series Security Management Appliance	· M-Series security management appliance complements all of the Cisco IronPort e-mail and web security appliances · Provides one location for you to monitor all corporate policy settings and audit information	5–21
Cisco ACE Web Application Firewall	· Combines deep Web application analysis with high-performance Extensible Markup Language (XML) inspection and management to address the full range of these threats · Secures and protects Web applications from common attacks such as identity theft, data theft, application disruption, fraud, and targeted attacks	5–23
Cisco IOS Content Filtering	· Web security solution that helps organizations protect against known and new Internet threats, improve employee productivity, and enforce business policies for regulatory compliance	5–24
Cisco Spam and Virus Blocker ***NEW PRODUCT***	· Dedicated antispam, antivirus, and antiphishing security appliance designed specifically for small businesses which virtually eliminates e-mail threats right out of the box · Helps blocks spam, requires minimal administration, and connects to one of the largest databases of e-mail security threats to bolster its accuracy	5–25
Cisco ScanSafe Web Security ***NEW PRODUCT***	· Enhances security while enabling cost savings of up to 40% by eliminating the need to purchase, deploy and maintain hardware required for on-premise solutions	5–26

Cisco ScanSafe Web Filtering ***NEW PRODUCT***	· Offers granular control over all Web content, including SSL encrypted communications, using multiple techniques including real-time dynamic Web content classification, an industry-leading URL filtering database, file type filters and early warning filtering and real-time scanning of search results with SearchAhead	5–27
Cisco ScanSafe Anywhere+ ***NEW PRODUCT***	· Extends the real-time protection and policy enforcement of ScanSafe Web Security to roaming employees · Protects roaming employees wherever they are working and however they access the Internet.	5–27
SECURE MOBILITY		
Cisco AnyConnect Secure Mobility Solution ***NEW SOLUTION***	· Combines Cisco's web security and next-generation remote access technology to deliver a robust and secure enterprise mobility solution · Helps your organization easily manage the security risks of borderless networks	5–27
Cisco 3350 Mobility Services Engine	· Provides a new approach for the delivery of mobility services to enable mobile business applications · A combination of hardware and software, the Mobility Services Engine is an appliance-based solution that supports a suite of software services to provide centralized and scalable service delivery	5–29
Cisco Catalyst 6500 Series/ 7600 Series WebVPN Services Module	· High-speed, integrated Secure Sockets Layer (SSL) VPN services module for Cisco Catalyst 6500 Series switches and Cisco 7600 Series routers that addresses the scalability, performance, application support, and security required for large-scale, remote-access SSL VPN deployments	5–30
Cisco Security Agent	· Protects endpoints from all types of malware and confidential data loss with a lower total cost of ownership	5–31
Cisco Virtual Office Solutions	· Boost flexibility and productivity and extend the enterprise by delivering secure, rich, and manageable network services to teleworkers and employees working outside the traditional office environment	5–32
SECURITY MANAGEMENT		
Cisco Security Manager	· Enterprise-class management application that provides insight into and control of Cisco security and network devices	5–33
Cisco Security Monitoring, Analysis, and Response System (MARS)	· Centralized monitoring, event-correlation, and attack-mitigation system	5–33
PHYSICAL SECURITY		
Cisco Physical Access Gateway	· Primary means for the Cisco Physical Access Control solution to connect door hardware, such as locks and readers, to your IP network · One gateway can control up to two doors and can scale to thousands of doors at a fixed cost per door	5–35
Cisco Physical Access Manager	· Management application for the Cisco Physical Access Control solution · Easy-to-use interface lets you configure Cisco Physical Access gateways and modules, monitor activity, enroll users, and integrate with IT applications and data stores	5–36
Cisco Video Surveillance 2500 Series IP Cameras— Standard Definition	· Feature-rich, professional digital cameras designed for superior performance in a wide variety of environments · Enhanced, progressive scan imager for excellent video and color, even in the most demanding lighting conditions · MPEG-4 compression produces DVD-quality video · Automatic day/night mode, dual streams, bidirectional audio, motion detection, alarm inputs and outputs, and an analog BNC for ease of installation	5–37
Cisco Video Surveillance 4000 Series IP Cameras— High Definition ***NEW UPDATES***	· True high-definition (HD) video surveillance IP digital cameras designed for superior performance in a wide variety of video surveillance applications · Provide efficient network usage with the highest-quality video · Contact closures and two-way audio allow integration with microphones, speakers, and access control systems · Open, standards-based design provides an ideal platform for integration and operation as independent devices or as part of a Cisco Video Surveillance network	5–38
Cisco Video Surveillance 2000 Series IP Domes ***NEW UPDATES***	· High-resolution, feature-rich digital IP camera that delivers superior performance in a wide variety of environments · MPEG-4 compression of up to 30 frames per second (fps) at D1 NTSC resolution (720 x 480) or 25 fps at D1 PAL resolution (720 x 576) offers efficient network usage while providing high-quality video · Supports MJPEG compression	5–40
Cisco Video Surveillance Stream Manager Software	· Switching and recording software used in Cisco Video Surveillance IP Gateways, Convergence Chassis, Service Nodes, and Integrated Gateways · Provides virtual matrix switching to connect cameras, keyboards, and monitors, plus video storage and recall for display on analog monitors or PCs · Provides powerful features for the operation and management of a video surveillance solution	5–40
Cisco Video Surveillance Media Server Software	· Manages, replicates, distributes, and archives video streams · Core component of the Cisco network-centric video surveillance software portfolio offers the power and flexibility to meet a diverse range of video surveillance requirements	5–41

Cisco Video Surveillance Operations Manager Software	• In conjunction with the Cisco Video Surveillance Media Server, authenticates and manages access to video feeds • Centralized administration tool for management of media servers, cameras, encoders, and viewers • Meets the diverse needs of administrators, systems integrators, and operators	5–42
Cisco Physical Security Multiservices Platform ***NEW PRODUCT***	• Offers innovative choices for deploying and managing physical security services, including video surveillance, access control, and flexible incident response communications • Compact, 1-rack-unit (RU) appliance includes a wide array of features in a single, easy-to-use, and easy-to-deploy component	5–43
Cisco IPICS Server Software	• Security-enhanced, Linux-based platform installed on select Cisco 7800 Series Media Convergence Servers • Other Cisco IPICS system components include the Cisco IPICS Push-to-Talk Management Center (PMC), Cisco IPICS Phone Client, Cisco IPICS Operational Views (Ops Views), Cisco Land Mobile Radio (LMR) gateways, Router Media Service (RMS), and Session Initiation Protocol (SIP) telephony gateways	5–44
Cisco IPICS Dispatch Console ***NEW PRODUCT***	• End-to-end radio dispatching solution designed for mission-critical radio communications. It is the vital link between dispatchers and field personnel, helping to coordinate field response and ensure personnel safety • Designed and built to take advantage of the newest IP communications technologies, making it easier to dispatch responders and provide them with information that improves their situational awareness • Running on a standard PC platform, it extends existing push-to-talk (PTT) radio channels so that users with a variety of communication devices can participate	5–45
Cisco IPICS Mobile Client ***NEW PRODUCT***	• Smartphone application that allows responders to interact with other incident participants • In conjunction with the Cisco IPICS Dispatch Console, provides an on-demand solution for physical security and emergency first responders who are mobile, enabling them to begin reviewing incident information and addressing an incident even while on the way to the scene	5–46

SERVICES

Cisco Security Services | 5–47
Enable the innovative, secure, network edge using intelligent, personalized services from Cisco and our partners. Through a discovery process that begins with understanding your business objectives, we help you integrate end-to-end solutions into your architecture and incorporate network services onto that platform. Sharing knowledge and leading practices, we support your success every step of the way as you deploy, absorb, manage, and scale new technology. Choose from a flexible suite of support services designed to meet your business needs and help you maintain high-quality network performance while controlling operational costs.

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco IOS Security

Cisco IOS Software routers ship with the industry's most comprehensive security services, intelligently embedding data, security, voice, and wireless in the platform portfolio for fast, scalable delivery of mission-critical business applications. The Cisco 800 Series Routers and Cisco 1800, 2800, and 3800 Series Integrated Services Routers are ideal for small businesses and enterprise branch offices, delivering a rich, integrated solution for connecting remote offices, mobile users, and partner extranets or service provider–managed customer premises equipment (CPE). The Cisco 7200 Series and 7301 Routers and the Cisco ASR 1000 Series Aggregation Services Routers are ideal for aggregation of WAN security services in campus and enterprise environments.

Cisco IOS Software routers include security services that address customer concerns regarding threat management, VPN and secure communications, integrated network solutions, and security management. With the convergence of features such as advanced firewall, VPN services, intrusion prevention system (IPS), Cisco Network Access Control (NAC), and content filtering, the Cisco IOS Security routers give customers flexibility to choose a solution that meets their bandwidth, LAN and WAN density, and multiservice requirements while benefiting from advanced security.

Ideal for Companies That Need These Features

Cisco IOS Software
- An integrated security solution that includes firewall, VPN, remote access, IPS, and content-filtering technologies
- Low total cost of ownership by taking advantage of the existing infrastructure for modular and flexible deployment options
- An integrated stateful inspection firewall with powerful security and multiprotocol routing all on the same routing platform
- Scalability options from the Cisco 800 Series up to the Cisco 7200 Series, the Cisco 7301, and the Cisco ASR 1000 Series Aggregation Services Routers
- Integrated, secure network solutions including secure unified communications and secure mobility
- Secure extranet and intranet perimeters and Internet connectivity for secure branch and remote offices
- Ability to meet compliance regulations such Payment Card Industry (PCI), Health Insurance Portability and Accountability Act (HIPAA), or Sarbanes-Oxley Act of 2002 (SOX) that require firewall or data-encryption services

Key Features and Benefits

- Cisco IOS Security offers an advanced firewall that includes zone-based firewall, which provides secure, stateful, application-based packet inspection to support the latest protocols and advanced applications.
- Cisco IOS Firewall offers a threat--management foundation to deploy secure access policies at all network interfaces.
- Cisco IOS Intrusion Prevention System (IPS) is an inline, deep-packet inspection feature that effectively mitigates a wide range of network attacks. Supporting thousands of attack signatures, it provides the network intelligence to accurately identify, classify, and stop or block malicious traffic in real time.
- Cisco IOS Content Filtering helps your organization protect itself from known and new Internet threats, improve employee productivity, and enforce business policies for regulatory compliance.
- Cisco IOS IP Security (IPsec) and Secure Sockets Layer (SSL) VPN offer services for site-to-site VPN and unified remote-access security. These services include standards-based IPsec VPN, Cisco Group Encrypted Transport VPN, Dynamic Multipoint VPN (DMVPN), Easy VPN, and SSL VPN.
- Dynamic, per-user authentication and authorization for LAN, WAN, and VPN clients.
- Cisco Network Admission Control (NAC) support extends the ability of the network to enforce organizational security policies on devices seeking network access by delivering NAC services on an integrated services module.

Selected Part Numbers and Ordering Information

The Cisco IOS Security router bundles are based on the Cisco 800 Series Routers, Cisco 1800, 2800, and 3800 Series Integrated Services Routers, and Cisco 7200 Series and 7301 routers providing a full range of security features. These bundles include entry security bundles, enhanced security bundles for added performance and scale, and entry voice (Voice Security [VSEC]) and premier voice (H-VSEC) bundles for combined security and unified communications. These bundles are orderable through a single part number at a reduced price compared to ordering each component separately.

Cisco 7600 Series security bundles are based on the Cisco 7600 Series E chassis and the IP Security (IPsec) VPN SPA.

Cisco ASR 1000 Series Aggregation Services Router security bundles are available for the Cisco ASR 1002, ASR 1004, and ASR 1006 chassis and include the respective Cisco IOS XE feature licenses without the need for additional hardware support in the form of security blades or modules.

For More Information

http://www.cisco.com/go/routersecurity

Cisco ASA 5500 Series Adaptive Security Appliances

Cisco ASA 5500 Series Adaptive Security Appliances are purpose-built solutions that combine best-in-class security and VPN services with an innovative, extensible services architecture. Designed as a core component of the Cisco Secure Borderless Network, the Cisco ASA 5500 Series provides proactive threat defense that stops attacks before they spread through the network, controls network activity and application traffic, and delivers flexible VPN connectivity. The result is a powerful multifunction network security appliance family that provides the security breadth and depth for protecting home-office, branch-office, small and medium-sized business, enterprise, and data center networks while reducing the overall deployment and operations costs and complexities associated with providing this new level of security.

Ideal for Companies That Need These Features

Cisco ASA 5500 Series Firewall Edition
- Ability to deploy new applications securely while protecting valuable assets from unauthorized access
- Transparent firewall, virtualization, and intelligent network integration;
- Comprehensive management solutions to lower operational costs:
- Flexible centralized management solutions

Cisco ASA 5500 Series IPS Edition
- Customers that need to meet compliance mandates, existing Cisco ASA customers looking to enhance their security with intrusion prevention, growing customers that require their security solution to scale as they grow
- Accurate inline prevention technologies
- Multivector threat identification
- Efficient traffic capture techniques, load-balancing capabilities, and visibility into encrypted traffic
- Powerful management, event correlation, and support services

Cisco ASA 5500 Content Security Edition	· Market-leading content security capabilities, including antivirus and antispyware, URL and content filtering, antiphishing, and antispam. · Threat-protected VPN · Easy deployment and management	
Cisco ASA 5500 Series SSL/IPsec VPN Edition	· SSL and IPsec VPN for any deployment environment · Clientless and full network VPN access · Flexible/shared licensing for different deployment needs · Cost-effective option for organizations needing only basic remote access capabilities	

Key Features and Benefits

- Market-proven security and VPN capabilities—Full-featured, high-performance firewall, intrusion prevention system (IPS), content security, and SSL/IPsec VPN technologies deliver robust application security, user- and application-based access control, worm and virus mitigation, malware protection, content filtering, and remote user-site connectivity.
- Extensible services architecture—Taking advantage of a modular services processing and policy framework offered by the Cisco ASA 5500 Series Adaptive Security Appliances, businesses can apply specific security and network services on a per-traffic flow basis, delivering highly granular policy controls and a wide range of protective services with streamlined traffic processing. The efficiencies of this policy framework, as well as software and hardware extensibility through user-installable security services modules (SSMs) and security services cards (SSCs), advance the evolution of existing services and the deployment of new services without requiring a platform replacement or performance compromise. With these capabilities, the Cisco ASA 5500 Series provides the foundation for highly customizable security policies and exceptional services extensibility to help protect against the fast-evolving threat environment.
- Reduced deployment and operations costs—The multifunction Cisco ASA 5500 Series allows for platform configuration and management standardization, helping to decrease the costs of deployment and ongoing operations.

Specifications

Feature	Cisco ASA 5505	Cisco ASA 5510	Cisco ASA 5520	Cisco ASA 5540	Cisco ASA 5550	Cisco ASA 5580-20	Cisco ASA 5580-40
Network location	Small Business, Branch Office, Enterprise Teleworker	Internet Edge	Internet Edge	Internet Edge	Internet Edge, Campus	Data Center, Campus	Data Center, Campus
Performance Summary							
Maximum firewall (Mbps)	150 Mbps	300 Mbps	450 Mbps	650 Mbps	1.2 Gbps	5 Gbps (real-world HTTP), 10 Gbps (jumbo frames)	10 Gbps (real-world HTTP), 20 Gbps (jumbo frames)
Maximum firewall connections	10000 / 25,000	50,000 / 130,000	280,000	400,000	650,000	1,000,000	2,000,000
Maximum firewall connections/second	4000	9000	12,000	25,000	36,000	90,000	150,000
Packets per second (64 byte)	85,000	190,000	320,000	500,000	600,000	2,500,000	4,000,000
Maximum 3DES/AES VPN throughput	100 Mbps	170 Mbps	225 Mbps	325 Mbps	425 Mbps	1 Gbps	1 Gbps
Maximum site-to-site and remote access VPN sessions	10 / 25	250	750	5000	5000	10,000	10,000
Maximum SSL VPN user sessions[1]	25	250	750	2500	5000	10,000	10,000
Bundled SSL VPN user session[1]	2	2	2	2	2	2	2
Technical Summary							
Memory	256 MB	256 MB	512 MB	1 GB	4 GB	8 GB	12 GB
Minimum system flash	64 MB	64 MB	64 MB	64 MB	64 MB	1 GB	1 GB
Maximum virtual interfaces (VLANs)	3 (trunking disabled) / 20 (trunking enabled)	50 / 100	150	200	250	100 (250[2])	100 (250[5])
Expansion Capabilities							

SSC/SSM/ICs supported	AIP SSC	CSC SSM, AIP SSM, 4GE SSM	CSC SSM, AIP SSM, 4GE SSM	CSC SSM, AIP SSM, 4GE SSM	Not Available	4-10/100/1000, 4-GE SR LC, 2-10GE SR LC	4-10/100/1000, 4-GE SR LC, 2-10GE SR LC
	Cisco ASA 5505	**Cisco ASA 5510**	**Cisco ASA 5520**	**Cisco ASA 5540**	**Cisco ASA 5550**	**Cisco ASA 5580-20**	**Cisco ASA 5580-40**
SSC/SSM/IC Expansion	1-SSC	1-SSM	1-SSM	1-SSM	Not Available	6-IC	6-IC
Intrusion Prevention	Yes (with AIP SSC)	Yes (with AIP SSM)	Yes (with AIP SSM)	Yes (with AIP SSM)	Not Available	Not Available	Not Available
Concurrent threat mitigation throughput (Mbps) (firewall + IPS services)	75 (with AIP SSC)	150 (with AIP SSM-10) 300 (with AIP SSM-20)	225 (with AIP SSM-10) 375 (with AIP SSM-20) 450 (with AIP SSM-40)	500 (with AIP SSM-20) 650 (with AIP SSM-40)	Not available	Not available	Not available
Content Security (anti-virus, anti-spyware, file blocking)	Not available	Yes (with CSC SSM)	Yes (with CSC SSM)	Yes (with CSC SSM)	Not available	Not available	Not available
Maximum number of users for anti-virus, anti-spyware, file blocking (CSC SSM only)	Not available	500 (CSC-SSM-10) 1000 (CSC-SSM-20)	500 (CSC-SSM-10) 1000 (CSC-SSM-20)	500 (CSC-SSM-10) 1000 (CSC-SSM-20)	Not available	Not available	Not available
Content Security Plus License features	Not available	Anti-spam, anti-phishing, URL filtering	Anti-spam, anti-phishing, URL filtering	Anti-spam, anti-phishing, URL filtering	Not available	Not available	Not available
Cisco Adaptive Security Appliance Software Version (latest)	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Application-layer firewall services	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Layer 2 transparent firewalling	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security contexts (included/maximum)[3]	0/0	0/0 / 2/5	2/20	2/50	2/50	2/50	2/50
GTP/GPRS inspection[4]	Not available	Not available	Yes	Yes	Yes	Yes	Yes
High availability support[4]	Not supported Stateless A/S	Not supported A/A and A/S	A/A and A/S	A/A and A/S	A/A and A/S	A/A and A/S	A/A and A/S
SSL and IPsec VPN services	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VPN clustering and load balancing	Not available	Not available / Yes	Yes	Yes	Yes	Yes	Yes
Advanced endpoint assessment[4]	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. Beginning with Cisco ASA Software v7.1, SSL VPN (Web VPN) capability requires a license. Systems include 2 SSL VPN users by default for evaluation and remote management purposes.
2. Supported in a future ASA software release
3. Licensed feature
4. A/S = Active/Standby; A/A = Active/Active

Selected Part Numbers and Ordering Information

Cisco ASA 5500 Series Firewall Edition Bundles	
ASA5505-BUN-K9	Cisco ASA 5505 10-User Bundle includes 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, Triple Data Encryption Standard/Advanced Encryption Standard (3DES/AES) license
ASA5505-K8	Cisco ASA 5505 10-User Bundle includes 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, Data Encryption Standard (DES) license

ASA5505-50-BUN-K9	Cisco ASA 5505 50-User Bundle includes 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5505-UL-BUN-K9	Cisco ASA 5505 Unlimited-User Bundle includes 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5505-SEC-BUN-K9	Cisco ASA 5505 Unlimited-User Security Plus Bundle includes 8-port Fast Ethernet switch, 25 IPsec VPN peers, 2 SSL VPN peers, DMZ, stateless Active/Standby high availability, 3DES/AES license
ASA5510-BUN-K9	Cisco ASA 5510 Firewall Edition includes 3 Fast Ethernet interfaces, 250 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5510-K8	Cisco ASA 5510 Firewall Edition includes 3 Fast Ethernet interfaces, 250 IPsec VPN peers, 2 SSL VPN peers, DES license
ASA5510-SEC-BUN-K9	Cisco ASA 5510 Security Plus Firewall Edition includes 2 Gigabit Ethernet + 3 Fast Ethernet interfaces, 250 IPsec VPN peers, 2 SSL VPN peers, Active/Standby high availability, 3DES/AES license
ASA5520-BUN-K9	Cisco ASA 5520 Firewall Edition includes 4 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 750 IPsec VPN peers, 2 SSL VPN peers, Active/Active and Active/Standby high availability, 3DES/AES license
ASA5520-K8	Cisco ASA 5520 Firewall Edition includes 4 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 750 IPsec VPN peers, 2 SSL VPN peers, Active/Active and Active/Standby high availability, DES license
ASA5540-BUN-K9	Cisco ASA 5540 Firewall Edition includes 4 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 5000 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5540-K8	Cisco ASA 5540 Firewall Edition includes 4 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 5000 IPsec VPN peers, 2 SSL VPN peers, DES license
ASA5550-BUN-K9	Cisco ASA 5550 Firewall Edition includes 8 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 4 Gigabit SFP interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5550-K8	Cisco ASA 5550 Firewall Edition includes 8 Gigabit Ethernet interfaces + 1 Fast Ethernet interface, 4 Gigabit SFP interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, DES license
ASA5580-20-BUN-K8	Cisco ASA 5580-20 Firewall Edition includes 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, DES license
ASA5580-20-BUN-K9	Cisco ASA 5580-20 Firewall Edition includes 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5580-20-4GE-K9	Cisco ASA 5580-20 Firewall Edition 4 Gigabit Ethernet Bundle includes 4 Gigabit Ethernet interfaces, 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, Dual AC power, 3DES/AES license
ASA5580-20-8GE-K9	Cisco ASA 5580-20 Firewall Edition 8 Gigabit Ethernet Bundle includes 8 Gigabit Ethernet interfaces, 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, Dual AC power, 3DES/AES license
ASA5580-40-BUN-K8	Cisco ASA 5580-40 Firewall Edition includes 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, DES license
ASA5580-40-BUN-K9	Cisco ASA 5580-40 Firewall Edition includes 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5580-40-8GE-K9	Cisco ASA 5580-40 Firewall Edition 8 Gigabit Ethernet Bundle includes 8 Gigabit Ethernet interfaces, 2 management interfaces, 5000 IPsec VPN peers, 2 SSL VPN peers, Dual AC power, 3DES/AES license
ASA5580-40-10GE-K9	Cisco ASA 5580-40 Firewall Edition 4 10Gigabit Ethernet Bundle includes 4 10Gigabit Ethernet interfaces; 2 management interfaces; 5000 IPsec VPN peers; 2 SSL VPN peers, Dual AC power, 3DES/AES license
Cisco ASA 5500 Series IPS Edition Bundles	
ASA5505-50-AIP5-K9	Cisco ASA 5505 50-User IPS Edition includes AIP-SSC-5, 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5505-U-AIP5P-K9	Cisco ASA 5505 Unlimited-User IPS Edition includes AIP-SSC-5, DMZ support, high availability, 8-port Fast Ethernet switch, 10 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5510-AIP10-K9	Cisco ASA 5510 IPS Edition includes AIP-SSM-10, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 5 Fast Ethernet interfaces
ASA5510-AIP10SP-K9	Cisco ASA 5510 IPS Edition includes AIP-SSM-10, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 2 Gigabit Ethernet interfaces, 3 Fast Ethernet interfaces, and high availability

ASA5510-AIP20SP-K9	Cisco ASA 5510 IPS Edition includes AIP-SSM-20, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 2 Gigabit Ethernet interfaces, 3 Fast Ethernet interfaces, and high availability
ASA5520-AIP10-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-10, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5520-AIP20-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-20, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5520-AIP40-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-40, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-AIP20-K9	Cisco ASA 5540 IPS Edition includes AIP-SSM-20, firewall services, 5000 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-AIP40-K9	Cisco ASA 5540 IPS Edition includes AIP-SSM-40, firewall services, 5000 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
Cisco ASA 5500 Series Content Security Edition Bundles	
ASA5510-CSC10-K9	Cisco ASA 5510 Content Security Edition includes CSC-SSM-10, 50-user antivirus/anti-spyware with 1-year subscription, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 3 Fast Ethernet interfaces
ASA5510-CSC20-K9	Cisco ASA 5510 Content Security Edition includes CSC-SSM-20, 500-user antivirus/anti-spyware with 1-year subscription, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 3 Fast Ethernet interfaces
ASA5520-CSC10-K9	Cisco ASA 5520 Content Security Edition includes CSC-SSM-10, 50-user antivirus/anti-spyware with 1-year subscription, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5520-CSC20-K9	Cisco ASA 5520 Content Security Edition includes CSC-SSM-20, 500-user antivirus/anti-spyware with 1-year subscription, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
Cisco ASA 5500 Series SSL/IPsec VPN Edition Bundles	
ASA5505-SSL10-K9	Cisco ASA 5505 SSL/IPsec VPN Edition includes 10 IPsec VPN peers, 10 SSL VPN peers, 50 firewall users, 8-port Fast Ethernet switch
ASA5505-SSL25-K9	Cisco ASA 5505 SSL/IPsec VPN Edition includes 25 IPsec VPN peers, 25 SSL VPN peers, 50 firewall users, 8-port Fast Ethernet switch
ASA5510-SSL50-K9	Cisco ASA 5510 SSL/IPsec VPN Edition includes 250 IPsec VPN peers, 50 SSL VPN peers, firewall services, 3 Fast Ethernet interfaces
ASA5510-SSL100-K9	Cisco ASA 5510 SSL/IPsec VPN Edition includes 250 IPsec VPN peers, 100 SSL VPN 100 peers, firewall services, 3 Fast Ethernet interfaces
ASA5510-SSL250-K9	Cisco ASA 5510 SSL/IPsec VPN Edition includes 250 IPsec VPN peers, 250 SSL VPN peers, firewall services, 3 Fast Ethernet interfaces
ASA5520-SSL500-K9	Cisco ASA 5520 SSL/IPsec VPN Edition includes 750 IPsec VPN peers, 500 SSL VPN peers, firewall services, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-SSL1000-K9	Cisco ASA 5540 SSL/IPsec VPN Edition includes 5000 IPsec VPN peers, 1000 SSL VPN peers, firewall services, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-SSL2500-K9	Cisco ASA 5540 SSL/IPsec VPN Edition includes 5000 IPsec VPN peers, 2500 SSL VPN peers, firewall services, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5550-SSL2500-K9	Cisco ASA 5550 SSL/IPsec VPN Edition includes 5000 IPsec VPN peers, 2500 SSL VPN peers, firewall services, 8 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5550-SSL5000-K9	Cisco ASA 5550 SSL/IPsec VPN Edition includes 5000 IPsec VPN peers, 5000 SSL VPN peers, firewall services, 8 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5580-20-10K-K9	Cisco ASA 5580 SSL/IPsec VPN Edition includes 10,000 IPsec VPN peers, 10,000 SSL VPN peers, firewall services, 4 Gigabit Ethernet interfaces, 2 management interfaces, Dual AC power, 3DES/AES license
Security Services Modules	
ASA-SSM-AIP-5-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 5
ASA-SSM-AIP-10-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 10
ASA-SSM-AIP-20-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 20
ASA-AIP-40-INC-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 40
ASA-SSM-CSC-10-K9=	Cisco ASA Content Security and Control Security Services Module 10 with 50-user antivirus/anti-spyware, 1-year subscription
ASA-SSM-CSC-20-K9=	Cisco ASA Content Security and Control Security Services Module 20 with 500-user antivirus/anti-spyware, 1-year subscription

SSM-4GE=	Cisco ASA 4-Port Gigabit Ethernet Security Services Module
Cisco ASA 5520 Adaptive Security Appliance for Unified Communications Security	
ASA5520-UC-BUN-K9	Cisco ASA 5520 Adaptive Security Appliance UC Security Edition; includes 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface, 1000 UC proxy sessions, 750 IPsec VPN peers, 2 SSL VPN peers, Active/Active and Active/Standby high availability, Triple Data Encryption Standard/Advanced Encryption Standard (3DES/AES) license
ASA5520-UC-BUN-K8	Cisco ASA 5520 Adaptive Security Appliance UC Security Edition; includes 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface, 1000 UC proxy license, 750 IPsec VPN peers, 2 SSL VPN peers, Active/Active and Active/Standby high availability, DES license
Cisco ASA 5540 Adaptive Security Appliance for Unified Communications Security	
ASA5540-UC-BUN-K9	Cisco ASA 5540 Adaptive Security Appliance UC Security Edition; includes 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface, 2000 UC proxy sessions, 5000 IPsec VPN peers, 2 SSL VPN peers, 3DES/AES license
ASA5540-UC-BUN-K8	Cisco ASA 5540 Adaptive Security Appliance UC Security Edition includes 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface, 2000 UC proxy sessions, 5000 IPsec VPN peers, 2 SSL VPN peers, DES license
Cisco ASA 5550 Adaptive Security Appliance for Unified Communications Security	
ASA5580-20-UC-K9	Cisco ASA 5580 Adaptive Security Appliance UC Security Edition; includes 4 Gigabit Ethernet interfaces, 5000 UC proxy sessions, 10,000 IPSec VPN peers, 2 SSL VPN peers, 3DES/AES license,
ASA5580-20-UC-K8	Cisco ASA 5580 Adaptive Security Appliance UC Security Edition; includes 4 Gigabit Ethernet interfaces, 5000 UC proxy sessions, 10,000 IPSec VPN peers, 2 SSL VPN peers, DES license
Cisco ASA 5580 Series Interface Expansion Cards	
ASA5580-4GE-CU=	Cisco ASA 5580 4-port 10/100/1000 Ethernet interface card, RJ45
ASA5580-4GE-FI=	Cisco ASA 5580 4-port Gigabit Ethernet fiber interface card, SR, LC
ASA5580-2X10GE-SR=	Cisco ASA 5580 2-port 10 Gigabit Ethernet fiber interface card, SR, LC
Cisco ASA 5500 Series Software	
ASA-SW-UPGRADE=	Cisco ASA Software one-time upgrade for nonsupport customers

For More Information

http://www.cisco.com/go/asa

Cisco Intrusion Prevention System

Business networks of all sizes now face increasingly sophisticated attacks that can impede productivity, obstruct access to applications and resources, and cause significant communications disruption. In addition, because of compliance regulations and consumer privacy laws, business priorities now include minimizing legal liability, protecting brand reputation, and safeguarding intellectual property.

A core component of Cisco Secure Borderless Network, Cisco IPS collaborates with other key network components for end-to-end network-wide protection. Threat information is shared between Cisco IPS and host-based IPS Cisco Security Agent and Cisco wireless controller. Available as a dedicated appliance, Cisco IPS is also integrated into Cisco firewall, switch, and router platforms for maximum protection and deployment flexibility.

This inline, network-based defense can identify, classify, and stop known and unknown threats, including worms, network viruses, application threats, system intrusion attempts, and application misuse.

Cisco IPS Sensors and Cisco IPS Sensor Software deliver high-performance, intelligent threat detection and protection. Cisco IPS with Global Correlation uses global threat information that has been turned into actionable intelligence, such as reputation scores, and pushed out to all enabled technologies. Reputation filtering and global inspection give Cisco IPS 7.0 several advantages:

- Twice the effectiveness of signature-only intrusion prevention systems
- More accurate with fewer false-positives using reputation
- 100 times faster than traditional signature-only methods

This technology provides metrics in both multimedia and transactional environments, so organizations can anticipate true IPS performance tailored to their business. The sensors can be deployed widely and incrementally on servers and endpoints, as dedicated appliances and as service modules on routers, switches, and firewalls. They collaborate and adapt in real time to emerging threats.

In addition, with Cisco Services for IPS, organizations easily manage their IPS deployment with near-real time updates to the most recent threats.

Ideal for Companies That Need These Features

Cisco IPS 4200 Series Sensors	· Dedicated hardware appliance platform with performance levels from 300 Mbps to 4 Gbps
Cisco Advanced Inspection and Prevention Security Services Module (AIP-SSM)	· IPS security module or card for the Cisco ASA 5500 Series for companies that want to manage IPS with their firewall in one appliance
Cisco IPS Advanced Integration Module (AIM)	· IPS AIM for the Cisco 1841, 2800, and 3800 Series Integrated Services Routers with performance level of up to 45 Mbps
Cisco IDS Services Module (NME)	· IPS NME for the Cisco 2800 and 3800 Series Integrated Services Routers with performance level of up to 75 Mbps
Cisco IDS Services Module 2 (ISDM-2)	· IPS security module for Cisco Catalyst 6500 Series Switches with up to 500 Mbps performance
Cisco IOS IPS	· Focused set of IPS capabilities using Cisco IOS Software on the router with varying performance levels

Key Features and Benefits

- Pervasive network integration—Cisco Intrusion Prevention System (IPS) solutions defeat threats from multiple vectors, including network, server, and desktop endpoints. The solutions extend across Cisco platforms, from purpose-built appliances to services modules integrated into firewall and routers and switches. A Cisco IPS solution protects the network from policy violations, vulnerability exploitations, and anomalous activity through detailed inspection of traffic at Layers 2 through 7, across the entire network.
- Collaborative threat prevention—A Cisco IPS solution employs a unique, system-wide security ecosystem that assesses and reacts to threats, delivering exceptional network scalability and resiliency. This ubiquitous alliance includes cross-solution feedback linkages, common policy management, multivendor event correlation, attack-path identification, passive-active fingerprinting, and host-based (Cisco Security Agent) IPS collaboration.
- Proactive posture adaptation—As an organization's network threat posture changes, a Cisco IPS solution evolves and adapts to stay ahead of the security landscape, mitigating threats by both known and unknown attacks. Extensive behavioral analysis, anomaly detection, policy adjustments, and rapid threat-response techniques save time, resources, and most importantly, the organization's assets and productivity.

NOTE: IPS technology strategically deployed throughout the network provides excellent end-to-end, zero-day protection. A Cisco IPS solution protects an organization's infrastructure and business.

Specifications

Feature	Cisco IPS-4240	Cisco IPS-4255	Cisco IPS-4260	Cisco IPS-4270	Cisco IPS Module (IDSM-2)	Cisco IPS Network Module (AIM)	Cisco IPS Network Module (NM-CIDS)
Performance	250 Mbps	500 Mbps	1 Gbps	2 Gbps	500 Mbps	45 Mbps	45 Mbps
Monitoring Interface	Four 10/100/1000 Base-TX	Four 10/100/1000 Base-TX	Autosensing 10/100/1000 Base-TX	Four 10/100/1000 Base-TX or Four 10-00Base-SX	PCI	Internal 10/100 Mbps Ethernet	Internal 10-100-Mbps Ethernet and external 10-100-Mbps Ethernet
Optional Interface			4x 10/100/1000 Base-TX 2x1000SX	· Four 10/100/1000 Base-TX · Two 1000Base-SX (fiber) (up to 16 total monitoring interfaces)			
Command and Control Interface	10/100 Base-TX	10/100 Base-TX	10/100 Base-TX	Two onboard 10/100/1000 Base-TX	PCI	10/100 Base-TX (on host ISR)	10/1010/100 Base-TX

Selected Part Numbers and Ordering Information

Cisco IPS 4200 Appliances	
IPS-4240-K9	Cisco IPS 4240 Sensor (chassis, software, SSH, four 10/100/1000BASE-TX interfaces with RJ-45 connector)

IPS4240-DC-K9	Cisco IPS 4240 NEBS-Compliant Sensor with DC power (chassis, software, SSH, four 10/100/1000BASE-TX interfaces with RJ-45 connector)
IPS-4255-K9	Cisco IPS 4255 Sensor (chassis, software, SSH, four 10/100/1000BASE-TX interfaces with RJ-45 connector)
IPS-4260-K9	Cisco IPS 4260 Sensor (chassis, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector)
IPS-4260-4GE-BP-K9	Cisco IPS 4260 Sensor with an included 4-GE copper NIC with hardware bypass (chassis, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector, and four 10/100/1000BASE-TX interfaces with built-in bypass)
IPS-4260-2SX-K9	Cisco IPS 4260 Sensor with an included NIC card (chassis, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector, and two fiber interfaces)
IPS4270-20-K9	Cisco IPS 4270 Sensor (chassis, redundant power, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector)
IPS4270-20-4GE-K9	Cisco IPS 4270 Sensor (chassis, redundant power, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector, and four 10/100/1000BASE-TX interfaces)
IPS4270-20-4SX-K9	Cisco IPS 4270 Sensor (chassis, redundant power, software, SSH, two onboard 10/100/1000BASE-TX interfaces with RJ-45 connector, and four fiber interfaces)
IPS-4GE-BP-INT=	Spare 4-port copper interface card with built-in hardware bypass for the Cisco IPS 4260 and 4270
IPS-2SX-INT=	Spare 2-port fiber interface card for the Cisco IPS 4260 and 4270
IPS Modules on ISR	
AIM-IPS-K9	Cisco Intrusion Prevention System Advanced Integrated Module for Cisco 1841, 2800, 3800
NME-IPS-K9	Cisco Intrusion Prevention System Advanced Integrated Module for Cisco 2800, 3800
Security Services Modules	
ASA-SSC-AIP-5-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Card 5
ASA-SSM-AIP-10-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 10
ASA-SSM-AIP-20-K9=	Cisco ASA Advanced Inspection and Prevention Security Services Module 20
ASA-AIP-40-INC-K9 =	Cisco ASA Advanced Inspection and Prevention Security Services Module 40
Select Bundles	
ASA5510-AIP10-K9	Cisco ASA 5510 IPS Edition includes AIP-SSM-10, firewall services, 250 IPsec VPN peers, 2 SSL VPN peers, 5 Fast Ethernet interfaces
ASA5520-AIP10-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-10, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5520-AIP20-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-20, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5520-AIP40-K9	Cisco ASA 5520 IPS Edition includes AIP-SSM-40, firewall services, 750 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-AIP20-K9	Cisco ASA 5540 IPS Edition includes AIP-SSM-20, firewall services, 5000 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
ASA5540-AIP40-K9	Cisco ASA 5540 IPS Edition includes AIP-SSM-40, firewall services, 5000 IPsec VPN peers, 2 SSL VPN peers, 4 Gigabit Ethernet interfaces, 1 Fast Ethernet interface
WS-C6506E-IPSC-K9	Cisco Catalyst 6506-E Switch, Supervisor Engine 32 with 8 x 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP) plus 1 x 10/100/1000 uplink port, 8 copper SFP interfaces, 4 IDSM-2s, and 1 Power-Supply 3000W
WS-C6506E-IPSF-K9	Cisco Catalyst 6506-E Switch, Supervisor Engine 32 with 8 x 1 Gigabit Ethernet SFP plus 1 x 10/100/1000 uplink port, 8 multimode fiber SFP interfaces, 4 IDSM-2s, and 1 Power-Supply 3000W
WS-C6506E-IPS10GK9	Cisco Catalyst 6506-E Switch, Supervisor Engine 32 with 2 x 10 Gigabit Ethernet XENPAK plus 1 x 10/100/1000 uplink port, 2 short-range 10 Gigabit XENPAK interfaces, 4 IDSM-2s, and 1 Power-Supply 3000W

For More Information

http://www.cisco.com/go/ips

Cisco Catalyst 6500 Series Firewall Services Module

The Cisco Catalyst 6500 Series Firewall Services Module (FWSM) is a high-speed, integrated firewall module for Cisco Catalyst 6500 Switches and Cisco 7600 Series Routers. It provides the fastest firewall data rates in the industry: 5-Gbps throughput, 100,000 cells per second (CPS), and 1 million concurrent connections. Up to four FWSMs can be installed in a single chassis, providing scalability to 20 Gbps per chassis. Based on Cisco PIX Firewall technology, the Cisco FWSM offers large enterprises and service providers unmatched security, reliability, and performance.

The Cisco FWSM includes a number of advanced features that help reduce costs and operational complexity while allowing organizations to manage multiple firewalls from the same management platform. Features such as resource manager helps organizations limit the resources allocated to any security context at any time, thus helping ensure that one security context does not interfere with another. The transparent firewall feature configures the FWSM to act as a Layer 2 bridging firewall, resulting in minimal changes to network topology.

Ideal for Companies That Need These Features

Cisco Catalyst 6500 Series Firewall Services Module	· Ability to add an integrated firewall module for Cisco Catalyst 6500 Switches and Cisco 7600 Series routers

Key Features and Benefits

- An integrated module—Installed inside a Cisco Catalyst 6500 Series Switch or Cisco 7600 Internet Router, the Cisco Catalyst 6500 Series Firewall Services Module (FWSM) allows any port on the device to operate as a firewall port and integrates firewall security inside the network infrastructure.
- Compatibility with future versions—The FWSM can handle up to 5 Gbps of traffic, providing exceptional performance to meet future requirements without requiring a system overhaul. Up to three additional FWSMs can be added to the Cisco Catalyst 6500 to achieve better than 10-Gigabit Ethernet scalability.
- Enhanced reliability—The FWSM is based on Cisco PIX technology and uses the same time-tested Cisco PIX Operating System, a secure, real-time operating system.
- Lower cost of ownership—The FWSM offers among the best price-to-performance ratios of any firewall. Because FWSM is based on the Cisco PIX Firewall, the cost of training and management is lower, and because it is integrated in the chassis, there are fewer boxes to manage.
- Ease of use—The intuitive GUI of the Cisco PIX Device Manager can be used to manage and configure the features within the FWSM. The FWSM can now be managed using the Cisco ASA 5500 Series Adaptive Security Device Manager (ASDM) v5.2 as well.
- Efficiency and productivity gains—Virtualized FWSM delivers multiple firewalls on one physical hardware platform. Network administrators can configure, deploy, and manage these functions as if they were separate devices. Using virtualization to reduce the number of physical devices in a network significantly reduces the cost and complexity of managing network infrastructure.

Specifications

Feature	Cisco Catalyst 6500 Series Firewall Services Module
Leading scalability and performance	5.5 Gbps throughput per service module; Up to four FWSMs (20 Gbps) per Catalyst 6500 chassis with static VLAN or IOS Policy-based Routing; 2.8 Mpps; 1 million concurrent connections; 100,000 connection setups and teardowns per second; 256,000 concurrent NAT or PAT translations; Jumbo Ethernet packets (8500 bytes) supported
VLAN Interfaces	1000 total per service module; 256 VLANs per security context in routed mode; 8 VLAN pairs per security context in transparent mode
Access Lists	Up to 80,000 access control entries in single context mode NOTE: The FWSM implements Layer 3 and 4 access control security checks in hardware with virtually no performance impact using non-upgradeable high-speed memory
Virtual Firewalls (Security Contexts)	20, 50, 100, 250 Virtual Firewall licenses; Virtual Firewalls and 1 administrative context are provided for testing purposes.
Every port within the chassis becomes a security port	Every FWSM works in tandem with other modules in the chassis to deliver robust security throughout the entire chassis
New services can be deployed with minimal operational complexity	The integrated approach of the Cisco FWSM integrates virtualization and high availability. Solutions are enhanced through complementary functions. This integrated approach maximizes return on network investment by: · Building on the existing network: All FWSMs take advantage of the infrastructure to deliver new services · Simplifying maintenance and management: Integration of services modules into one chassis allows for ease of use and support for network administrators · Reducing environmental costs: Lower overall power and cabling costs

Selected Part Numbers and Ordering Information

Hardware	
WS-SVC-FWM-1-K9	Cisco Firewall Services Module for Cisco Catalyst 6500 and 7600 Series

WS-SVC-FWM-1-K9=	Cisco Firewall Services Module for Cisco Catalyst 6500 and 7600 Series (spare)
Security Bundles	
WS-C6506-E-FWM-K9	Cisco Catalyst 6506 Firewall Security System with Enhanced Chassis and Supervisor 720 3B
WS-C6509-E-FWM-K9	Cisco Catalyst 6509 Firewall Security System with Enhanced Chassis and Supervisor 720 3B
WS-C6513-FWM-K9	Cisco Catalyst 6513 Firewall Security System with Supervisor 720 3B
WS-6509EXL-2FWM-K9	Cisco Catalyst 6509 Firewall Security System with Enhanced Chassis, Supervisor 720 3BXL and two Firewall Service Modules
WS-6513XL-2FWM-K9	Cisco Catalyst 6513 Firewall Security System with Supervisor 720 3BXL and two Firewall Service Modules
WS-6506-EXL-FWM-K9	Cisco Catalyst 6506 Firewall Security System with Enhanced Chassis, Supervisor 720 3BXL and one Firewall Service Module
WS-6509-EXL-FWM-K9	Cisco Catalyst 6506 Firewall Security System with Enhanced Chassis, Supervisor 720 3BXL and one Firewall Service Module
WS-C6513-XL-FWM-K9	Cisco Catalyst 6513 Firewall Security System with Enhanced Chassis, Supervisor 720 3BXL and one Firewall Service Module
Software	
SC-SVC-FWM-1.1-K9	Firewall Services Module Software Release 1.1 for Cisco Catalyst 6500 and 7600 Series
SC-SVC-FWM-2.2-K9	Firewall Services Module Software Release 2.2 for Cisco Catalyst 6500 and 7600 Series
SC-SVC-FWM-2.3-K9	Firewall Services Module Software Release 2.3 for Cisco Catalyst 6500 and 7600 Series
SC-SVC-FWM-3.1-K9	Firewall Services Module Software Release 3.1 for Cisco Catalyst 6500 and 7600 Series
SC-SVC-FWM-3.2-K9	Firewall Services Module Software Release 3.2 for Cisco Catalyst 6500 and 7600 Series

NOTE: Cisco Firewall Services Module Software 1.1 has reached end-of-sale status. Customers are encouraged to upgrade or purchase FWSM Software 2.3 or 3.1, 3.2.

For More Information

http://www.cisco.com/en/US/products/hw/modules/ps2706/ps4452/index.html

Cisco TrustSec

Cisco TrustSec Solution helps customers secure their networks, data, and resources using their organization's security policy, user and device identity information, pervasive access control mechanisms, and data protection for network traffic. Cisco TrustSec is a foundational component of Cisco Secure Borderless Networks. The three key Cisco TrustSec functional areas are:

- Policy-based access control
- Identity-aware networking
- Data integrity and confidentiality

Policy-Based Access Control

Cisco TrustSec provides network access controls based on a consistent policy for users, endpoint devices, and networking devices (such as routers and switches). Cisco TrustSec has the ability to control how a user or a device can be granted access, what security policies endpoint devices must meet, such as posture compliance, and what network resources a user is authorized to use in the network.

Identity-Aware Networking

Cisco TrustSec uses end-user and device identity and other information (such as time and location) to provide precise security policy controls. These policy controls can be implemented not only at the network edge where users first connect to the network, but also throughout the entire network. Cisco TrustSec also delivers further role-based networking services, including support for Cisco Medianet and quality of service for business-critical applications.

Data Integrity and Confidentiality

Cisco TrustSec secures data paths in the switching environment with IEEE 802.1AE standard encryption. Cisco switching infrastructure maintains controls so that critical security applications such as firewalls, intrusion prevention, and content inspection can retain visibility into data streams.

Key Features and Benefits

- Enables highly secure collaboration—TrustSec dynamically assigns access and services for users and devices to support a mobile workforce. Having a consistent set of security policies in place helps support a more secure and collaborative business environment and offers a smooth, reliable user experience as well.
- Strengthens security—TrustSec helps secure access to your network and resources whether your connection is wired, wireless, or over VPN. It also helps ensures that endpoint devices are authorized and healthy with consistent, network-wide security policy enforcement.
- Addresses compliance—TrustSec helps address compliance requirements by providing access control to sensitive and valuable information and assets, collecting user activity and history data, as well as providing

end-to-end monitoring and reporting capabilities. You can use these capabilities for controls, auditing, and reporting as part your effort to meet compliance requirements.

For More Information

http://www.cisco.com/go/trustsec

Cisco NAC Appliance (Clean Access)

Cisco NAC Appliance (formerly Cisco Clean Access) is an easily deployed Network Admission Control (NAC) product that uses the network infrastructure to enforce security policy compliance on all devices seeking to access network computing resources. With NAC Appliance, network administrators can authenticate, authorize, evaluate, and remediate wired, wireless, and remote users and their machines prior to network access. It identifies whether networked devices such as laptops, IP phones, or game consoles are compliant with your network's security policies and repairs any vulnerabilities before permitting access to the network.

Cisco NAC has several core components, with additional optional components for enhanced capabilities.

- Cisco NAC Server—This device initiates assessment and enforces access privileges based on endpoint compliance. Users are blocked at the port layer and restricted from accessing the trusted network until they successfully pass inspection. The Cisco NAC Server is available in seven sizes based on the number of online, concurrent users: 100, 250, 500, 1500, 2500, 3500, and 5000 users. A single company can have several servers of differing sizes; for example, a headquarters building would require a 1500-user Cisco NAC Server, while a branch office for the same company might only require a 100-user server.
- Cisco NAC Manager—A centralized, web-based console for establishing roles, checks, rules, and policies. The Cisco NAC Manager is available in three sizes: the Cisco NAC Lite Manager manages up to three Cisco NAC Servers; the Cisco NAC Standard Manager manages up to 20 Cisco NAC Servers; and the Cisco NAC Super Manager manages up to 40 Cisco NAC Servers or 80 Cisco NAC Network Modules.
- Cisco NAC Agent—A thin, read-only agent that enhances posture assessment functions and streamlines remediation. Cisco NAC Agents are optional and are distributed free of charge.

Ideal for Companies That Need These Features

Cisco NAC Appliance (Clean Access)
- Minimized network outages
- Enforcement of security policies
- Significant cost savings with automated device repairs and updates

Key Features and Benefits

- Authentication integration with single sign-on—Cisco NAC serves as an authentication proxy for most forms of authentication, natively integrating with Kerberos, Lightweight Directory Access Protocol (LDAP), RADIUS, Active Directory, S/Ident, and others. Cisco NAC supports single sign-on for VPN clients, wireless clients, and Windows Active Directory domains.
- Vulnerability assessment—Cisco NAC supports scanning of all Windows, Mac OS, and Linux-based operating systems and machines, as well as non-PC networked devices such as game consoles, PDAs, printers, and IP phones. It conducts network-based scans or can use custom-built scans as required. Cisco NAC can check for any application as identified by registry key settings, services running, or system files.
- Device quarantine—Cisco NAC can place noncompliant machines into quarantine. Quarantine can be accomplished by using subnets as small as /30, or by using a quarantine VLAN.
- Automatic security policy updates—Automatic security policy updates that are part of Cisco's standard software maintenance package provide predefined policies for the most common network access criteria, including policies that check for critical operating system updates, common antivirus software virus definition updates, and common antispyware definition updates.
- Centralized Management—The Cisco NAC web-based management console allows administrators to define the types of scans required for each role, as well as the related remediation packages necessary for recovery. One management console can manage multiple servers.
- Remediation and Repair—Quarantining gives devices access to remediation servers that can provide operating system patches and updates, virus definition files, or endpoint security solutions such as Cisco Security Agent. Administrators can enable automated remediation through the optional agent, or specify a series of remediation instructions. In addition, Cisco NAC delivers user-friendly features, such as the monitoring mode and silent remediation, to minimize user impact.
- Flexible Deployment Modes—Cisco NAC offers the broadest array of deployment modes to fit into any customer network. Customers can deploy the product as a virtual or real IP gateway, at the edge or centrally, with Layer 2 or Layer 3 client access, and in-band or out-of-band with network traffic.

Specifications

	Cisco NAC Appliance 3315	Cisco NAC Appliance 3355	Cisco NAC Appliance 3395
Products	· Cisco NAC Server for 100, 250, and 500 users · Cisco NAC Lite Manager	· Cisco NAC Server for 1500, 2500, 3500, and 5000 users · Cisco NAC Standard Manager	· Cisco NAC Super Manager
Processor	Quad-core Intel Xeon (Core 2 Quad)	Quad-core Intel Xeon (Nehalem)	2 x Quad-core Intel Xeon (Nehalem)
Memory	4 GB	6 GB	8 GB
Hard disk	250-GB SATA drive	2 x 300-GB SAS RAID drives	4 x 300-GB SFF SAS RAID drives
Removable media	CD/DVD-ROM drive	CD/DVD-ROM drive	CD/DVD-ROM drive

Network Connectivity			
Ethernet network interface cards (NICs)	· 2 x Integrated NICs · 2 x Gigabit NICs (PCI-X)	· 2 x Integrated NICs · 2 x Gigabit NICs (PCI-X)	· 2 x Integrated NICs · 2 x Gigabit NICs (PCI-X)
10BASE-T cable support	Category (Cat) 3, 4, or 5 unshielded twisted pair (UTP) up to 328 ft (100 m)	Cat 3, 4, or 5 UTP up to 328 ft (100 m)	Cat 3, 4, or 5 UTP up to 328 ft (100 m)
10/100/1000BASE-TX cable support	Cat 5 UTP up to 328 ft (100 m)	Cat 5 UTP up to 328 ft (100 m)	Cat 5 UTP up to 328 ft (100 m)
Secure Sockets Layer (SSL) accelerator card	None	Cavium CN1120-NHB-E	Cavium CN1120-NHB-E
Interfaces			
Serial ports	1	1	1
USB 2.0 ports	4 (two front, two rear)	4 (one front, one internal, two rear)	4 (one front, one internal, two rear)
Keyboard ports	1	1	1
Video ports	1	1	1
Mouse ports	1	1	1
External SCSI ports	None	None	None
System Unit			
Form factor	Rack-mount 1 RU	Rack-mount 1 RU	Rack-mount 1 RU
Weight	35 lb (15.87 kg) fully configured	35 lb (15.87 kg) fully configured	35 lb (15.87 kg) fully configured
Dimensions	1.70 x 16.78 x 27.75 in. (4.32 x 42.62 x 70.49 cm)	1.70 x 16.78 x 27.75 in. (4.32 x 42.62 x 70.49 cm)	1.70 x 16.78 x 27.75 in. (4.32 x 42.62 x 70.49 cm)
Power supply	350W	Dual 675W (redundant)	Dual 675W (redundant)
Cooling fans	6; non-hot plug, nonredundant	9; redundant	9; redundant
BTU rating	2661 BTU/Hr (at 120V)	2661 BTU/Hr (at 120V)	2661 BTU/Hr (at 120V)
Regulatory and Standards Compliance			
Industry certifications	FIPS 140-2 Level 2 Common Criteria EAL2	FIPS 140-2 Level 2 Common Criteria EAL2	FIPS 140-2 Level 2 Common Criteria EAL2

Selected Part Numbers and Ordering Information

NACMGR-3-K9	Cisco NAC Appliance 3310 Manager—Max 3 servers
NACMGR-3FB-K9	Cisco NAC Appliance 3310 Manager Failover Bundle—Max 3 servers
NACMGR-20-K9	Cisco NAC Appliance 3350 Manager—Max 20 servers
NACMGR-20FB-K9	Cisco NAC Appliance 3350 Manager Failover Bundle—Max 20 servers
NACMGR-40-K9	Cisco NAC Appliance 3390 Manager—Max 40 servers
NACMGR-40FB-K9	Cisco NAC Appliance 3390 Manager Failover Bundle—Max 40 servers

For More Information
http://www.cisco.com/en/US/products/ps6128/index.html

Cisco Secure Access Control System (ACS)

Cisco Secure Access Control System (ACS) is a highly scalable, high-performance access policy system that centralizes device administration, authentication, and user access policy and reduces the management and support burden for these functions.

Cisco Secure ACS 5.1 is the second release of this next-generation network identity and access solution. This release establishes Cisco Secure ACS as a Policy Administration Point (PAP) and Policy Decision Point (PDP) for policy-based access control. Release 5.1 offers additional capabilities, including:

· A powerful, attribute-driven rules-based policy model that addresses complex policy needs in a flexible manner
· A lightweight, web-based graphical user interface (GUI) with intuitive navigation and workflow
· Integrated advanced monitoring, reporting, and troubleshooting capabilities for maximum control and visibility

- Improved integration with external identity and policy databases, including Windows Active Directory and Lightweight Directory Access Protocol (LDAP)-accessible databases, simplifying policy configuration and maintenance
- A distributed deployment model that enables large-scale deployments and provides a highly available solution

The Cisco Secure ACS 5.1 rules-based policy model supports the application of different authorization rules under different conditions, and thus policy is contextual and not limited to authorization determined by a single group membership. New integration capabilities allow information in external databases to be directly referenced in access policy rules, and attributes can be used both in policy conditions and authorization rules.

Cisco Secure ACS 5.1 features centralized collection and reporting for activity and system health information for full manageability of distributed deployments. It supports proactive operations such as monitoring and diagnostics, and reactive operations such as reporting and troubleshooting. Advanced features include a deployment-wide session monitor, threshold-based notifications, entitlement reports, and diagnostic tools.

Key Features and Benefits

- Complete access control and confidentiality solution—Can be deployed with other Cisco TrustSec components-including policy components, infrastructure enforcement components, endpoint components, and professional services-for a comprehensive access control and confidentiality solution.
- AAA protocols—Cisco Secure ACS 5.1 supports two distinct protocols for authentication, authorization, and accounting (AAA). Cisco Secure ACS 5.1 supports RADIUS for network access control and TACACS+ for network device access control. Cisco Secure ACS is a single system for enforcing access policy across the network.
- Database options—Cisco Secure ACS 5.1 supports an integrated user repository in addition to supporting integration with existing external identity repositories such as Windows Active Directory and LDAP. Multiple databases can be used concurrently for maximum flexibility in enforcing access policy.
- Authentication protocols—Cisco Secure ACS 5.1 supports a wide range of authentication protocols including PAP, MS-CHAP, Extensible Authentication Protocol (EAP)-MD5, Protected EAP (PEAP), EAP-Flexible Authentication via Secure Tunneling (FAST), and EAP-Transport Layer Security (TLS) to support your authentication requirements.
- Access policies—Cisco Secure ACS 5.1 supports a rules-based, attribute-driven policy model that provides greatly increased power and flexibility for access control policies that may include authentication protocol requirements, device restrictions, time of day restrictions, posture validation, and other access requirements. Cisco Secure ACS may apply downloadable access control lists (dACLs), VLAN assignments, and other authorization parameters.
- Centralized management—Cisco Secure ACS 5.1 supports a completely redesigned lightweight, web-based GUI that is easy to use. An efficient, incremental replication scheme quickly propagates changes from primary to secondary systems providing centralized control over distributed deployments. Software upgrades are also managed through the GUI and can be distributed by the primary system to secondary instances.
- Monitoring and troubleshooting—Cisco Secure ACS 5.1 includes an integrated monitoring, reporting, and troubleshooting component that is accessible through the web-based GUI. This tool provides maximum visibility into configured policies and authentication and authorization activities across the network. Logs are viewable and exportable for use in other systems as well.
- Platform options—Cisco Secure ACS 5.1 is available as a closed and hardened Linux-based appliance or as a software operating system image for VMware ESX.

Cisco Secure Access Control Server (ACS) Express

Cisco Secure Access Control Server (ACS) Express is an entry-level RADIUS and TACACS+ authentication, authorization, and accounting (AAA) server for retail branch locations, enterprise branch offices, and small and medium-sized businesses (SMBs) that have fewer than 350 users and 50 devices.

Cisco Secure ACS Express provides a centralized identity networking solution that:

- Offers a simple user and access policy management interface
- Gives administrators greater access to and control of users and machines in various networks including wireless, wired, and virtual private networks
- Controls administrative access to network devices using RADIUS and TACACS+

This product is intended to serve small to medium-sized businesses, retail sites and enterprise branch offices where customers need an easy-to-use GUI yet require a comprehensive but simple feature set and a lower price point to address their specific deployment needs.

Cisco Policy Administration Point (PAP)

Cisco Policy Administration Point (PAP) provides centralized administration, management and monitoring of entitlement policies, and delegation and integration with enterprise information repositories such as Active Directory and Lightweight Directory Access Protocol (LDAP).

Cisco Secure Access Control Server (ACS) Solution Engine

The Cisco Secure Access Control Server (ACS) Solution Engine is a dedicated, rack-mountable appliance for network access policy control. It helps companies comply with growing regulatory and corporate requirements, improve productivity, and contain costs. It supports multiple scenarios simultaneously, including:

- Device administration: Authenticates administrators, authorizes commands, and provides an audit trail
- Remote Access: Works with VPN and other remote network access devices to enforce access policies
- Wireless: Authenticates and authorizes wireless users and hosts and enforces wireless-specific policies
- Network admission control: Communicates with posture and audit servers to enforce admission control policies

Cisco Secure Access Control System (ACS) View

Cisco Secure Access Control System (ACS) View provides the highest level of reporting, alerting, and troubleshooting functions for Cisco Secure ACS deployments. Providing maximum visibility into configured

policies and authentication and authorization activities across the network, Cisco Secure ACS View is the ideal solution for organizations that require the greatest levels of reporting and control.

Specifications

Component Specifications	Cisco ACS 5.1
CPU	Intel Xeon 2.66-GHz Q9400 (Quad Core)
System memory	4 GB DDR II ECC
Hard disk drive	2 x 250 GB 7.2K RPM 3.5" SATA
Optical storage	DVD-ROM
Network connectivity	4 10/100/1000, RJ-45 interfaces
I/O ports	1 serial port, 4 USB 2.0 (2 front, 2 rear), SVGA Video
Rack-mounting	4-post (kit included)
Physical dimensions (1RU)	17.3 (W) x 22.0 (D) x 1.75 (H) in.; 44.0 (W) x 55.9 (D) x 4.45 (H) cm
Weight	24.25 (minimum) to 28.0 lb (maximum); 11.0-12.7 kg
Power Specifications	
Number of Power Supplies	1
Power Supply Size	351W universal, autoswitching
Environmental Specifications	
Operating temperature range	50 to 95°F; 10 to 35°C (up to 3000 ft / 914.4m)
Heat emitted	341 (minimum) to 1024 (maximum) BTUs; 100-300W
Maximum altitude	7000 ft; 2133 m
Component Specifications	
VMware Version	ESX 3.5 or ESX 4.0
CPU	Intel Core 2 (2.13 GHz)
System memory	4 GB
Hard disk requirement	Minimum 512 GB
Cisco Secure Access Control Server (ACS) Express	
Processor	Intel 352 Celeron D
Memory	1 GB RAM
Hard drive	250 GB
Optical Drive	DVD-ROM
Interfaces	Two onboard 10/100/1000 Ethernet NIC ports
Cisco Secure Access Control Server (ACS) 4.2	
Hardware Requirements	· IBM PC compatible with Pentium IV processor, 1.8 GHz or faster · 1GB RAM minimum · Color monitor with minimum graphics resolution of 256 colors at 800 x 600 resolution · CD-ROM drive · 100BaseT or faster network connection
OS Requirements	Windows Server 2003, R2, Service Pack 2
Cisco ACS Secure Solution Engine	
Processor	Pentium IV, 3.4 GHz
Memory	1 GB RAM
Hard drive	120 GB SATA
Optical Drive	CD/DVD combo
Interfaces	Two integrated 10/100/1000 Ethernet ports

Selected Part Numbers and Ordering Information

For the most up to date part numbers, please visit http://www.cisco.com/go/acs

For More Information

Cisco IronPort E-mail Security Solutions

The Cisco IronPort E-mail Security Solutions are easy-to-deploy solutions that defend your e-mail system against spam, viruses, phishing, and a wide variety of other threats. In use at eight of the ten largest Internet service providers (ISPs) and more than 40 percent of the world's largest enterprises, these systems have a demonstrated record of unparalleled security and reliability. Cisco IronPort e-mail security appliances protect enterprises of all sizes—the same code base that power our most sophisticated customers is used in the entire product family. By reducing the downtime associated with e-mail-borne malware, these products simplify the administration of corporate mail systems and reduce the burden on technical staff while offering insight into mail system operations.

Ideal for Companies That Need These Features

Cisco IronPort E-mail Security Services	· Anti-spam and anti-virus solution · Data loss prevention (DLP) · Regulatory compliance · E-mail encryption
Cisco IronPort Cloud E-mail Security	Delivers leadership with choice, providing superior protection and control with the cost-effective convenience of a cloud deployment model. It stops spam and viruses with a fully-supported infrastructure in Cisco data centers. Maximum data protection eliminates data contamination, reduces overhead, increases the speed of deployment and provides capacity assurance for future growth.
Cisco IronPort Hybrid E-mail Security	Offers that maximizes flexibility by dividing control between the customer site and Cisco cloud-based, software as a service (SaaS) infrastructure. With a divided control model, whereby appliances reside on the customer premises and in the Cisco data center, this model secures an organization's e-mail infrastructure by stopping spam and viruses. It also provides maximum flexibility and optimal design with additional outbound controls including DLP, encryption and onsite LDAP integration.
Cisco IronPort Managed E-mail Security	Secures an organization's e-mail infrastructure by stopping spam and viruses, allowing IT managers to focus on other strategic initiatives. This service eliminates the need to continuously train personnel and budget for more hardware due to increasing spam volumes. Customers benefit from the highest levels of data security provided by an on-site e-mail security appliance, while taking advantage of the flexibility to delegate some or all of the management and maintenance responsibilities.

NOTE: Please contact IronPort for sizing of specific appliances.

Key Features and Benefits

- IronPort AsyncOS—IronPort AsyncOS is a unique, high-performance software architecture engineered from the ground up to address concurrency-based communications bottlenecks and the limitations of file-based queuing.
- IronPort Reputation Filters—IronPort Reputation Filters perform a real-time e-mail threat assessment and then identify suspicious e-mail senders. Suspicious senders are rate-limited or blocked, preventing malicious traffic from entering the network. As the first line of defense on the IronPort e-mail security appliances, Reputation Filters dispose of up to 90 percent of incoming spam at the connection level -- saving bandwidth, conserving system resources, and yielding the very highest levels of security for critical messaging systems. A proven preventive solution, IronPort Reputation Filters defend the largest Internet service provider (ISP) and enterprise networks, as well as small and medium-sized businesses (SMBs), in production environments around the world.
- IronPort Anti-Spam—The catch rate of IronPort Anti-Spam is 97 to 99 percent. Its false positive rate is less than 1 in 1 million. To eliminate the broadest range of known and emerging e-mail threats, IronPort Anti-Spam combines best-of-class conventional techniques with breakthrough context-sensitive detection technology.
- IronPort Virus Outbreak Filters—IronPort Virus Outbreak Filters detect new virus outbreaks in real time, and then quarantine suspicious messages -- offering protection up to 42 hours before traditional anti-virus solutions.
- IronPort E-mail Encryption—IronPort E-mail Encryption technology revolutionizes e-mail encryption, meeting compliance requirements while delivering powerful new business-class e-mail features.
- IronPort Data Loss Prevention (DLP)—IronPort delivers high-performance, comprehensive data loss prevention for data in motion, helping organizations both large and small prevent leaks, enforce compliance, and protect their brand and reputation.
- The IronPort SenderBase Network—SenderBase collects data from more than ten times the networks of competing monitoring systems, with data on more than 30 percent of the world's e-mail and Web traffic. This volume provides a very statistically significant sample size, resulting in immediate and accurate detection of even low-volume mail senders. A highly diverse group of more than 100,000 organizations, including some of the largest networks in the world, contribute information to IronPort's SenderBase on a remarkable 5 billion messages per day. SenderBase gives mail administrators excellent real-time visibility into security threats from around the world.
- The Threat Operations Center—The 24-hour Threat Operations Center (TOC) provides a view into global traffic activity, enabling IronPort to analyze anomalies, uncover new threats, and track traffic trends.

For More Information

http://www.cisco.com/web/products/ironport

Cisco IronPort Secure Web Security Appliances

The Cisco IronPort S-Series Web Security Appliance provides multiple layers of defense against these risks, both horizontally (at the application layer) and vertically (up the protocol stack). Cisco IronPort Web Usage Controls enforce acceptable-use policy (AUP), while Cisco Security Intelligence Operations, Cisco IronPort Web Reputation Filters, and the Cisco IronPort Anti-Malware System—with simultaneous scanning by Sophos, Webroot, and McAfee for greater efficacy—provide protection against web-based malware.

The Cisco IronPort S-Series also offers comprehensive coverage for the three most common protocols carrying business information across the boundary and over the Internet: HTTP, HTTPS, and FTP. Finally, the Layer 4 Traffic Monitor detects and blocks phone-home malware activity that attempts to circumvent port 80 security features. With threats becoming more complex and sophisticated, Cisco IronPort S-Series appliances offer one of the industry's most comprehensive Web security protection and enterprise-class performance.

Ideal for Companies That Need These Features

Cisco IronPort S-Series Secure Web Security Appliance

- A secure web gateway, with multiple layers of defense against malware
- High security and high performance
- Consolidated security, Acceptable Use Policy (AUP), application control, and content caching features, all on a single, integrated appliance
- HTTPS decryption and scanning
- Data security and off-box DLP support

Key Features and Benefits

- Single appliance security and control—The Cisco IronPort S-Series offers a single appliance solution to secure and control the three greatest web traffic risks facing enterprise networks: security risks, resource risks, and compliance risks.
- Mitigation of malware risks and costs—With malware infecting approximately 75 percent of corporate desktops, overhead for managing infected desktops, ensuring minimal downtime to employees, and minimizing the risk of information leakage is considerable.
- Reduced administrative costs—By stopping these threats at the network perimeter with Cisco IronPort Web Security Appliances, enterprises can significantly reduce the administrative costs, prevent attacker phone-home activity on networks, reduce support calls, enhance worker productivity, and also eliminate the business exposure that accompanies these threats.
- Complete, accurate protection—Cisco IronPort S-Series appliances are designed from the beginning to address the broadest range of web-based malware threats, including those from the use of FTP and dynamic Web 2.0 sites. A multilayered defense that includes Cisco Security Intelligence Operations, Cisco IronPort Web Usage Controls, Cisco IronPort Web Reputation Filters, and Cisco IronPort DVS technology (with multiple antimalware scanning engines running simultaneously) helps ensure industry-leading accuracy.

This multilayered protection is based on a comprehensive content application layer inspection, as well as network layer pattern detection, checking both inbound and outbound activities. These innovations make the Cisco IronPort S-Series one of the industry's most secure web gateways.

- Enforcement of acceptable use policies—By implementing acceptable use web policies, enterprises can both conserve resources for work-related web usage and inform employees to help shape web access behavior over time. Enterprises can increase the amount of time that employees spend on business-oriented activities, reducing misuse of enterprise networks and bandwidth.
- Simplified data security—The data-loss problem extends well beyond malware. Employees can easily use webmail to send a message including proprietary information, post confidential data on social networks and blogs, or transfer financial documents over FTP to a server outside the corporate network. Making sure that sensitive data does not leave the corporate boundary-while allowing employees to take advantage of the full power of the Internet-is an important and challenging problem to solve.

Cisco IronPort Web Security Appliances enable organizations to take quick, easy steps to enforce common-sense data security policies for outbound traffic on HTTP, HTTPS, and FTP, as well as enabling simple interoperability with major dedicated DLP solutions.

- Mobile security across borderless networks—The Cisco AnyConnect Secure Mobility solution supports a wide range of desktops and mobile devices, helping ensure that web security continues to be enforced as employees change which devices they use. By using a standardized security solution for employees whether they are in the office or mobile, IT can also streamline security operations for a compelling TCO.
- SaaS access controls—The Cisco IronPort solution uses a standards-based authentication mechanism to bring sign-on under the control of your enterprise. Taking advantage of the employee credentials and access rights stored in the local directory, either Active Directory or LDAP, administrators retain control over access rights, and employees get a transparent experience using their corporate username and password for accessing all applications.
- Reporting visibility—The Cisco IronPort S-Series appliances deliver real-time and historical security information, allowing administrators to quickly understand web traffic activity. Real-time reports let administrators identify and track factors such as policy and security violations as they occur. Historical reports allow administrators to identify trends and report on efficacy and return on investment (ROI).
- Enterprise-scale performance—Cisco IronPort Web Security Appliances scale to meet the unique scanning needs of web traffic, thereby helping ensure that the employee's experience is maintained. Cisco offers industry-leading performance through its proprietary Cisco IronPort AsyncOS platform, an enterprise-grade web proxy and cache file system as well as an intelligent, multicore engine for rapid content scanning.

Consequently, the Cisco IronPort S-Series is a platform that can address the capacity requirements of even the largest of enterprises.

- Low TCO—Traditional solutions typically require multiple appliances or servers to protect against security, resource, and compliance risks. Unlike other solutions, the Cisco IronPort S-Series provides a single platform that contains a complete, in-depth defense-along with all the necessary management tools-significantly reducing initial and ongoing TCO.

- Reduced administrative overhead—Designed to minimize administrative overhead, Cisco IronPort Web Security Appliances offer easy setup and management with an intuitive GUI, support for automated updates, and comprehensive monitoring and alerting. The solution is also easy to deploy and configure to match corporate-specific policies.

Specifications

	S660	S360	S160
User Targets	10000+	1000-10000	< 1000
Chassis			
Form Factor	2RU	2RU	1RU
Dimensions	3.5" (h) x 17.5" (w) x 29.5" (d)	3.5" (h) x 17.5" (w) x 29.5" (d)	1.75" (h) x 17.5" (w) x 21.5" (d)
Power Supply	750 watts, 100/240 volts	750 watts, 100/240 volts	345 watts, 100/240 volts
Redundant Power Supply	Yes	Yes	No
Processor, Memory, and Disks			
CPUs	2x4 (2 Quad Cores) XEONs	1x4 (1 Quad Core) XEONs	2x2 (1 Dual Core) Pentium
Memory	8 GB	4 GB	4 GB
Disk Space	1.6 TB	1.2 TB	500 GB
Hot Swappable Hard Drives	Yes	Yes	No
RAID	RAID 10, battery-backed 256MB cache	RAID 10, battery-backed 256MB cache	RAID 1, battery-backed 256MB cache
Interfaces			
Ethernet	6xGigabit NICs, RJ-45	6xGigabit NICs, RJ-45	2xGigabit NICs, RJ-45
Serial	1xRS-232 (DB-9) Serial	1xRS-232 (DB-9) Serial	1xRS-232 (DB-9) Serial
Fiber	Optional	No	No
Configuration, Logging, and Monitoring			
Web Interface	GUI-based (HTTP or HTTPS)	GUI-based (HTTP or HTTPS)	GUI-based (HTTP or HTTPS)
Command Line Interface	SSH or Telnet (Configuration Wizard or command-based)	SSH or Telnet (Configuration Wizard or command-based)	SSH or Telnet (Configuration Wizard or command-based)
Logging	Squid, Apache, syslog	Squid, Apache, syslog	Squid, Apache, syslog
Centralized Reporting	Supported	Supported	Supported
File Transfer	SCP, FTP	SCP, FTP	SCP, FTP
Configuration Files	XML-based	XML-based	XML-based
Centralized Configuration	Supported	Supported	Supported
Monitoring	SNMPv1-3, e-mail alerts	SNMPv1-3, e-mail alerts	SNMPv1-3, e-mail alerts

Selected Part Numbers and Ordering Information

The following information pertains to Cisco IronPort bundle offerings. For a-la-carte, government, or educational pricing please contact a Cisco IronPort sales representative at sales@ironport.com.

Note: All bundles include Platinum Support, Rails (4-Post Square), and Sawmill Software for Cisco IronPort URL Filtering, Web Reputation Filters, and Anti-Malware System; the Cisco IronPort Anti-Malware System includes signatures from Webroot and McAfee.

Note the following abbreviations:

URL = URL Filtering; ASPY = Antispyware; WEBREP = Cisco IronPort Web Reputation Filters; AV = Antivirus and antimalware

Single Appliance Bundles (1 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-1A-EN-A-1Y	WBUN-1A-EN-AB-1Y	WBUN-1A-EN-ABC-1Y
Single Appliance Bundles (3 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-1A-EN-A-3Y	WBUN-1A-EN-AB-3Y	WBUN-1A-EN-ABC-3Y

Single Appliance Bundles (5 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-1A-EN-A-5Y	WBUN-1A-EN-AB-5Y	WBUN-1A-EN-ABC-5Y
Dual Appliance Bundles (1 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-2A-EN-A-1Y	WBUN-2A-EN-AB-1Y	WBUN-2A-EN-ABC-1Y
Dual Appliance Bundles (3 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-2A-EN-A-3Y	WBUN-2A-EN-AB-3Y	WBUN-2A-EN-ABC-3Y
Dual Appliance Bundles (5 Year)		
URL	**URL+WREP**	**URL+WREP+ASPY+AV**
WBUN-2A-EN-A-5Y	WBUN-2A-EN-AB-5Y	WBUN-2A-EN-ABC-5Y

For More Information

http://www.cisco.com/web/products/ironport

Cisco IronPort M-Series Security Management Appliance

The Cisco IronPort M-Series Security Management Appliance complements all of the Cisco IronPort e-mail and web security appliances. By helping ensure top performance for all of your application security gateways, the Cisco IronPort M-Series provides one location for you to monitor all corporate policy settings and audit information. Designed and built as a flexible management tool to centralize and consolidate policy and runtime data, this product can provide a single management interface for all of your organization's Cisco IronPort security appliances. Optional features allow you to run all your security operations from a single appliance, or to spread the load across multiple appliances.

Ideal for Companies That Need These Features

Cisco IronPort M-Series Security Management Appliance

- Top performance from Cisco IronPort e-mail and web security appliances
- A central platform for managing all reporting and auditing information
- Comprehensive visibility into all e-mail traffic
- Flexible management and complete security control at the network gateway
- Deployment flexibility and management to protect corporate network integrity

Key Features and Benefits

- Each Cisco IronPort M-Series appliance can host one or more of the innovative security management features available from the Cisco IronPort appliance to ease administrator workload.
- The end-user quarantine is a self-service solution, with an easy-to-use web or e-mail-based interface and simple integration into existing directory and mail systems. All operations are automatic and self-managing, so there is no risk of a capacity overload. Most importantly, the Cisco IronPort Spam Quarantine requires no maintenance by the administrator or the end user.
- End users can be authenticated either through a corporate Lightweight Directory Access Protocol (LDAP) directory or with their regular e-mail password for any standards-based Internet Message Access Protocol (IMAP) or point-of-presence (POP) server. Message distribution lists can be managed through one-click authentication from the quarantine message digests.
- Centralized reporting allows for consolidation of traffic data from multiple e-mail security appliances to provide fully integrated security reporting.
- Cisco IronPort third-generation reporting technology provides comprehensive insight into even the highest-volume networks in the world. Detailed and accurate information is coalesced into clear and informative reports, suitable for all levels of your organization.
- Cross-application reporting provides insight into the threats being blocked from inside and outside your network, internal user behavior, and critical content security policy infractions [[is this what you mean? Otherwise, you're saying the reporting provides insight into ... policy]]. You can see which users are sending the most mail, and track policy infractions across any department, site, or communication medium.
- End-to-end communications auditing enables administrators to know where and when a communication took place. They can search message telemetry for multiple e-mail security appliances or request-response data from the web and report the full scanning and delivery details.
- The Cisco IronPort M-Series is a centralized policy and device management system that provides fine-grained role-based and hierarchical access to security and policy settings across hundreds of Cisco IronPort S-Series devices, improving security and reducing management overhead by allowing for delegation of critical policy decisions.
- You can use the Cisco IronPort M-Series appliance to manage quarantines, reporting data, and message tracking information—letting you dedicate your other appliances to mitigating e-mail and web security threats.
- All upgrades and new features are delivered directly from the Cisco IronPort appliance for your approval, and then automatically installed and managed.

Specifications

Chassis	IronPort M1060	IronPort M660	IronPort M160
Form Factor	19" rack-mountable 2RU rack height	19" rack-mountable 2RU rack height	19" rack-mountable 2RU rack height
Dimensions	3.5" (h) x 17.5" (w) x 29.5" (d)	3.5" (h) x 17.5" (w) x 29.5" (d)	1.75" (h) x 17.5" (w) x 21.5" (d)
Power Supply	750 watts, 100/240 volts	750 watts, 100/240 volts	345 watts, 100/240 volts
Processor, Memory, and Disks			
CPUs	2x4 (Quad Cores) Intel XEON	2x4 (Quad Core) Intel XEON	1x2 (Dual Core) Intel XEON
Disk Space	3 TB	1.8 TB	500 GB
RAID	RAID 10, battery-backed 256MB cache	RAID 10, battery-backed 256MB cache	RAID 1, battery-backed 256MB cache
Interfaces			
Ethernet	3xGigabit NICs, RJ-45	3xGigabit NICs, RJ-45	2xGigabit NICs, RJ-45
Fiber	Yes	No	No
Web Interface	GUI-based (HTTP or HTTPS)	GUI-based (HTTP or HTTPS)	GUI-based (HTTP or HTTPS)

Selected Part Numbers and Ordering Information

The following information pertains to Cisco IronPort bundle offerings. For a-la-carte, government, or educational pricing please contact a Cisco IronPort sales representative at sales@ironport.com.

Cisco IronPort Security Reporting Bundle
This bundle is for e-mail only.

- All new deals include a Cisco IronPort M160 Security Management Appliance
- All bundles include the following licenses for up to two E-mail Security Appliances
    - IronPort spam quarantine
    - Centralized e-mail reporting
    - Centralized message tracking
- All bundles include platinum support and rails (4-post square)
- For 5-year bundle contracts only—If IronPort, in its sole discretion, creates a new version or upgrade that is delivered to customer as part of the support and maintenance program and the software specifically licensed by the customer is incompatible with the IronPort hardware the customer uses to run the software, IronPort will upgrade the customer's incompatible hardware at no additional charge.

New Deals (1 Year)		
SKU	**ISQ + Reporting + Tracking**	**Users**
MBUN-1A-EN-ABC-1K-1Y	5000.00	100 to 999
MBUN-1A-EN-ABC-2K-1Y	11,675.00	1000 to 2000

New Deals (3 Years)		
SKU	**ISQ + Reporting + Tracking**	**Users**
MBUN-1A-EN-ABC-1K-3Y	9000.00	100 to 999
MBUN-1A-EN-ABC-2K-3Y	21,000.00	1000 to 2000

New Deals (3 Years)		
SKU	**ISQ + Reporting + Tracking**	**Users**
MBUN-1A-EN-ABC-1K-3Y	9000.00	100 to 999

Security Management Appliances	
M1050-BUN-R-NA	Cisco IronPort M1050, Standard Configuration
M650-BUN-R-NA	Cisco IronPort M650, Standard Configuration
M1060-BUN-R-NA	Cisco IronPort M1060, Standard Configuration
M660-BUN-R-NA	Cisco IronPort M660, Standard Configuration
M160-BUN-R-NA	Cisco IronPort M160, Standard Configuration
M1050-BUN-S-NA	Cisco IronPort M1050, Spare Unit (production unit required)
M650-BUN-S-NA	Cisco IronPort M650, Spare Unit (production unit required)
M1060-BUN-S-NA	Cisco IronPort M1060, Spare Unit (production unit required)
M660-BUN-S-NA	Cisco IronPort M660, Spare Unit (production unit required)

M160-BUN-S-NA	Cisco IronPort M160, Spare Unit (production unit required)
M1050-BUN-U-NA	Cisco IronPort M1050, Refurbished Unit
M650-BUN-U-NA	Cisco IronPort M650, Refurbished Unit

For More Information

http://www.cisco.com/en/US/products/ps10155/index.html

http://www.ironport.com/management

Cisco ACE Web Application Firewall

Many organizations are looking to increase efficiency and profitably with the implementation of new Web 2.0 applications and services. These new Web-based services provide greater flexibility and interactivity to customers, employees, and partners. At the same time, criminals have seized on exploiting these new, and often poorly secured services.

The Cisco ACE Web Application Firewall combines deep Web application analysis with high-performance Extensible Markup Language (XML) inspection and management to address the full range of threats. It secures and protects Web applications from common attacks such as identity theft, data theft, application disruption, fraud, and targeted attacks.

The Cisco ACE Web Application Firewall is especially designed to help organizations that store, process, and transmit credit card data comply with the current Payment Card Industry (PCI) Data Security Standard (DSS), requirements. Because of its unique blend of HTML and XML security, the Cisco ACE Web Application Firewall provides a full compliance solution for the PCI DSS sections 6.5 and 6.6, which mandate the implementation of a Web application firewall by June 30, 2008.

Key Features and Benefits

- PCI DSS regulation compliance
- Full-proxy security for both traditional HTML-based web applications and modern XML-enabled Web services applications
- Authentication and authorization enforcement to block unauthorized access
- Best-in-industry scalability and throughput for managing XML application traffic
- Positive and negative security enforcement to keep bad traffic patterns out and identify and allow only good traffic through
- Ability to deploy security policies and profiles in monitoring mode to prevent application downtime due to false positives typical in an automated learning environment
- Policy-based provisioning to increase developer productivity and improve deployment flexibility

Specifications

Feature	Cisco ACE Web Application Firewall
Transport Security	Full SSL v2/3 support with configurable cipher suites; FIPS 140-2 Level 3 platforms available
Cryptographic Support	Cryptographic algorithms including—Advanced Encryption Standard (AES); Data Encryption Standard (DES); Triple DES (3DES); Blowfish; RSA; Diffie-Helman; Digital Signature Algorithm (DSA); Secure Hash Algorithm 1 (SHA-1) and Message-Digest 5 (MD5)
Web Application Security	Full reverse proxy; Monitor mode deployment; Buffer overflow; HTTP parameter manipulation, Protocol compliance; Null byte blocking; Input encoding normalization; Response filtering and rewriting; Flexible firewall actions; Cookie and session tampering; Cross-site scripting (XSS); Command injection, SQL injection; Privacy enforcement by preventing information leak; Cryptography enforcement; Application and server error message cloaking; Referrer enforcement; Positive and negative security models; Custom rules and signatures; PCI compliance profiles
Administration	Web user interface; Command-line interface; SSH; Simple Network Management Protocol (SNMP); Roles-based access control (RBAC); Delegated administration; Central policy management and distributed enforcement; Import and export of configuration, statistics, and logs
Logging, Monitoring, and Auditing	Syslog and message and event logs; Traffic and service-level agreement (SLA) monitoring and reporting; Statistics for monitoring and various alerts and triggers; Audit trail of administrative operations

Selected Part Numbers and Ordering Information

Part Number	Product Name	Product Options	Support and Services
ACE-XML-K9 or ACE-XML-NF-K9	Cisco ACE Web Application Firewall Appliance	Chassis	CON-SNT-ACEXK9 or CON-SNT-ACEXNK9
ACE-XML-SW-6.0	Cisco ACE Web Application Firewall Software	Software	[Part: ACE-XML-SW-6.0]

ACE-XML-FIPS or ACE-XML-NONFIPS	FIPS-compliant SSL acceleration or Non-FIPS-compliant SSL acceleration	Cryptography	CON-SNT-ACEXFIPS or CON-SNT-ACEXNFIP
ACE-WAF-GAT-LICFX or ACE-WAF-MGT-LICFX	Cisco ACE Web Application Firewall license or Cisco ACE Web Application Firewall Manager license	Licensing	CON-SAU-ACEWGW or CON-SAU-ACEWMG

For More Information

http://www.cisco.com/go/waf

Cisco IOS Content Filtering

Cisco IOS Content Filtering is a Web security solution that helps organizations protect against known and new Internet threats, improve employee productivity, and enforce business policies for regulatory compliance.

Cisco IOS Content Filtering is ideally suited for small medium businesses and enterprise branch offices that need a scalable, low-maintenance solution.

As employees surf the internet, they expose themselves to websites that are known to give out malware, adware, spyware, and phishing. This not only causes downtime, but also revenue losses. According to an Infonetics Research (2006), nearly 2 percent of revenue losses and 51 percent of downtime costs are due to security costs.

Deployed on Cisco integrated services routers, Cisco IOS Content Filtering offers category-based productivity and security ratings. Content-aware security ratings protect against malware, malicious code, phishing attacks, and spyware. URL and keyword blocking help to ensure that employees are productive when accessing the Internet. This is a subscription-based hosted solution that leverages Trend Micro's global TrendLabs threat database, and is closely integrated with Cisco IOS.

Ideal for Companies That Need These Features

Cisco IOS Content Filtering
- Improved employee productivity—Restrict Internet use that exposes your organization to Internet risks and prevent employees from surfing Websites that lead to productivity loss or legal liability
- Conserve network resources—Set security policies that limit Internet access to prevent download of bandwidth-intensive applications and malware that would consume network resources
- Ease of Use—Simplify registration, configuration, and category management

Key Features and Benefits

- Subscription-Based—Easy-to-renew 1-, 2-, or 3-year subscription-based service is associated to the router platform; no individual user licenses are required. Subscription provides access to Trend Micro's database, with content filtering policies set on the router.
- Reputation Security-Ratings—Protection against a variety of web-based threats, including zero-day attacks. Assesses the security risk posed by a Web site based on our risk analysis. Helps combat phishing and guards against spyware that may send confidential information to hackers and cybercriminals. The reputation security Rating for a given URL based on a combination of past behavior and current exposure to malware, adware, phishing, spyware, and hacking provides the utmost level of web security for your network.
- Category-Based URL Classification (Over 70+ Categories Available)—Content-based classification of URLs helps restrict access to objectionable or productivity-affecting Websites (sites focusing on gambling or weapons, for example). Categories for reputation-based blocking (spyware and keylogging, for example) are also available.
- Keyword Blocking—Cisco IOS Content Filtering allows blocking of Websites based on selected keywords that occur in the URL.
- Black and White List Support—Cisco IOS Content Filtering supports 100 black and 1000 white URLs. For example, trusted Websites can be added to a white list.
- Management Provisioning—Cisco IOS Content Filtering is easy to use and deploy. It is managed through Cisco Configuration Professional, a Web-based router management tool, and through CSM (Cisco Security Manager)
- Caching—The caching feature stores URL categories and their policy decisions (permit or deny) locally on the router, ensuring quick response time to access the Internet. Administrators can configure the cache duration on the router.

Selected Part Numbers and Ordering Information

SL-CNFIL-87x-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 871, 876, 878, 878 Routers (URL/Phishing)
SL-CNFIL-88x-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 881, 886, 887,888 Routers (URL/Phishing)
SL-CNFIL-89x-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 891, 892 Routers (URL/Phishing)
SL-CNFIL-8xx-TRI	30-day free trial license for Cisco 800 Series
SL-CNFIL-180X-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 1801,1802,1803 Routers (URL/Phishing)

SL-CNFIL-181X-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 1811,1812 Routers (URL/Phishing)
SL-CNFIL-184-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 1841 Routers (URL/Phishing)
SL-CNFIL-186-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 1861 Routers (URL/Phishing)
SL-CNFIL-1xxx-TRI	30-day free trial license for Cisco 1800/1900 Series
SL-CNFIL-280-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 2801 Routers (URL/Phishing)
SL-CNFIL-281-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 2811 Routers (URL/Phishing)
SL-CNFIL-282-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 2821 Routers (URL/Phishing)
SL-CNFIL-285-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 2851 Routers (URL/Phishing)
SL-CNFIL-2xxx-TRI	30-day free trial license for Cisco 2800/2900 Series
SL-CNFIL-382-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 3825 Routers (URL/Phishing)
SL-CNFIL-384-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 3845 Routers (URL/Phishing)
FL-19-CNFIL-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 1900 Routers (URL/Phishing)
FL-29-CNFIL-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 2900 Routers (URL/Phishing)
FL-39-CNFIL-1Y	1-year Cisco IOS Content Filtering subscription for Cisco 3900 Routers (URL/Phishing)
SL-CNFIL-3xxx-TRI	30-day free trial license for Cisco 3800/3900 Series

For More Information

http://www.cisco.com/go/IOSContentFiltering

Cisco Spam and Virus Blocker

The Cisco Spam and Virus Blocker is a dedicated antispam, antivirus, and antiphishing security appliance designed specifically for small businesses which virtually eliminates e-mail threats right out of the box. It helps blocks spam, requires minimal administration, and connects to one of the largest databases of e-mail security threats to bolster its accuracy.

Ideal for Companies That Need These Features

Cisco Spam and Virus Blocker	• Protect your business against dangerous e-mail threats
	• Improve the productivity of your employees by eliminating spam
	• Reduce the time spent managing spam and e-mail threat security
	• Increase the performance of your network, servers, and personal computers by getting rid of unwanted e-mail
	• Reduce your liability for a spam or virus attack that is unintentionally propagated through your network

Key Features and Benefits

- Precision accuracy—Helps ensure that e-mail threats and spam are caught, and business e-mail is delivered.
- Continuous automatic updates—Constant communication with SenderBase services, a network database of e-mail security threats, ensures that your Cisco Spam and Virus Blocker installs the latest updates to protect your business e-mail.
- Easy installation and use—Simple browser-based setup wizards allow you to install Cisco Spam and Virus Blocker in nearly any network within 15 minutes, providing protection for your business right out of the box.
- Effortless management—From the moment the appliance is installed, you get spam protection with no additional effort from you or your staff.

Specifications

Feature	Cisco Spam and Virus Blocker
Hard drive	2x 80 GB 2.5-in. 7.2k Serial ATA (SATA)
CPU	Intel Celeron 440
Connectivity	Ethernet; dual embedded Gigabit network interface cards (NICs)
Memory	2 GB
Reliability and availability	Mean time between failures (MTBF): 74,000 hours
Network management	Accessible via HTTP and HTTPS; command-line interface accessible via SSH and Telnet
Network (or programming or other) interfaces	Accessible via HTTP and HTTPS; command-line interface accessible via SSH and Telnet

Protocols	• DNS • SSL/Transport Layer Security (TLS) • Network Address Translation (NAT) port mapping • Simple Mail Transfer Protocol (SMTP) • HTTP, HTTPS • FTP • Simple Network Management Protocol (SNMP) • Network Time Protocol (NTP) • Secure Shell (SSH) • Lightweight Directory Access Protocol (LDAP) • Remote Procedure Call (RPC) • Telnet • TCP/IP
Language support	GUI: English, French, Italian, German, Spanish, Chinese (Simplified and Mandarin), Japanese, Korean, Portuguese, Russian
(HxWxD)	1U rack: 16.1-in. depth
Weight: 14.6 lb (without rails)	Power
345W	Temperature range
Operating temperature: 50° to 95°F (10° to 35°C)	Storage temperature: -40° to 149°F (-40° to 65°C)
Mail server compatibility	Integrates with all mail servers (Exchange, Notes, Domino, etc.)

Selected Part Numbers and Ordering Information

BLKR-SVB-50U-1Y	Cisco Spam & Virus Blocker-50 users, 1 year
BLKR-SVB-50U-3Y	Cisco Spam & Virus Blocker-50 users, 3 years
BLKR-SVB-100U-1Y	Cisco Spam & Virus Blocker-100 users, 1 year
BLKR-SVB-100U-3Y	Cisco Spam & Virus Blocker-100 users, 3 years
BLKR-SVB-250U-1Y	Cisco Spam & Virus Blocker-250 users, 1 year
BLKR-SVB-250U-3Y	Cisco Spam & Virus Blocker-250 users, 3 years

For More Information
http://www.cisco.com/go/blocker

Cisco ScanSafe Web Security

ScanSafe Web Security is powered by Outbreak Intelligence™ which is comprised of numerous correlated detection technologies, automated machine-learning heuristics, and multiple "scanlets". Outbreak Intelligence builds a detailed view of each Web request and the associated security risk to ensure that ScanSafe customers use the Web safely.

Outbreak Intelligence scans over 1 billion Web requests a day, in real-time, stopping millions of malware instances and protecting thousands of the most demanding organizations around the world. Outbreak Intelligence scanlets analyze all elements of a Web request including HTML, JavaScript, Flash and active scripts, among others, which when coupled with numerous Context scanlets, offers multiple indicators as to the security posture of each Web request.

Ideal for Companies That Need These Features

Cisco ScanSafe Web Security
- Proactive, in-the-cloud protection against zero-day threats
- Prevent malware that is attempting to steal confidential data
- Protect against malware communication leaving the network
- Easily identify infected machines on your network
- Reduce time and resources used to remediate infected machines

Key Features and Benefits
- In-depth security analysis of all Web content as it is requested by end users
- High performance, secure Web access enabled by a global, multi-tenant infrastructure
- Powered by Outbreak Intelligence that is proven to block over 20% more malware than traditional security techniques
- Granular reporting to determine and resolve users that are infected by malware or are at risk

For More Information
http://www.scansafe.com/security

Cisco ScanSafe Web Filtering

ScanSafe Web Filtering offers granular control over all Web content, including SSL encrypted communications, utilizing multiple techniques including real-time dynamic Web content classification, an industry-leading URL filtering database, file type filters and early warning filtering and real-time scanning of search results with Search*Ahead*.

Enabled in-the-cloud, ScanSafe Web Filtering enables businesses to implement granular control for both inbound and outbound communications while realizing cost savings of up to 40% by eliminating the need to purchase, deploy and maintain hardware required for on-premise solutions. ScanSafe Web Filtering allows businesses to be in complete control of how end users access content on the Internet by providing intuitive tools to create, monitor, and enforce effective inbound and outbound Web policy.

ScanSafe Web Filtering is managed through an intuitive Web-based interface, ScanCenter, which integrates all management and reporting capabilities. Through ScanCenter, a global Web usage policy can be created and enforced across the organization, even down the group or user level. Any edits to the policy are rolled out in real time without having to wait for policy changes to propagate throughout the network.

Ideal for Companies That Need These Features

Cisco ScanSafe Web Filtering

- Limit legal liability by controlling access to inappropriate Web content
- Optimize network resources by reducing bandwidth consumption
- Enhance productivity by limiting non-business related Web activity
- Limit exposure to financial and other penalties related to the loss of confidential data
- Understand and control how your network resources are being used

Key Features and Benefits

- Control all Web-based traffic including SSL encrypted communications
- Prevent confidential data from leaving the network
- Ensure safe search engine results
- Granular reporting on all aspects of Web usage

For More Information

http://www.scansafe.com/webfiltering

Cisco ScanSafe Anywhere+

Anywhere[+] extends the real-time protection and policy enforcement of ScanSafe Web Security to roaming employees. With Anywhere[+] it is finally possible to protect roaming employees wherever they are working and however they access the Internet.

Anywhere[+] is delivered as a service for complete security, reduced complexity and simplified user management. Anywhere[+] removes the performance issues and bandwidth congestion associated with backhauling Web traffic over the corporate VPN, so the security perimeter is now anywhere you want it to be.

Anywhere[+] is deployed through a lightweight, tamper-proof driver which forwards Web traffic to the ScanSafe security scanning infrastructure. ScanSafe data centers are located all over the world from San Francisco to Sydney ensuring that end-users always have optimized performance as well as award-winning security and filtering.

Ideal for Companies That Need These Features

Cisco ScanSafe Anywhere+

- Ensure consistent security policy for all end-users, including remote and roaming workers
- Eliminate cost and effort of backhauling traffic from small offices and remote workers
- Optimized, high performance service regardless of geographical location
- Avoid users circumventing control with a tamper-proof solution
- Enforce global policy changes in real time

Key Features and Benefits

- Complete integration into defined global security policy
- Automatically selects optimal ScanSafe data center
- "Last mile" encryption ensures security of data sent to ScanSafe data center
- Supports centralized, silent deployment

For More Information

http://www.scansafe.com/anywhereplus

Cisco AnyConnect Secure Mobility Solution

With Cisco AnyConnect Secure Mobility Solution, users can access the network with their mobile device of choice, including laptops and handhelds. At the same time, this solution helps your organization easily manage the security risks of borderless networks.

This mobile security solution provides:

- Security policy enforcement that is context-aware, comprehensive, and preemptive
- Connectivity that is intelligent, simple, and always on
- Highly secure mobility across the rapidly increasing number of managed and unmanaged mobile devices

The Cisco AnyConnect Secure Mobility solution consists of the following components:

- Cisco AnyConnect Secure Mobility Client for highly secure connectivity
- Cisco IronPort Web Security Appliance for security policy enforcement
- Cisco AnyConnect Secure Mobility Solution enables the connection to simply work and be persistently connected, without the user needing to juggle where and how to best connect and persist, even when roaming between networks.
- The Cisco IronPort S-Series Web Security Appliance applies context-aware policy, including enforcing acceptable use and protection from malware for all users. The Web Security Appliance also accepts user authentication information from the AnyConnect client, providing an automatic authentication step for the user to access their web content.
- Cisco ASA Series as the firewall and secure mobility headend Cisco AnyConnect Version 2.5, with Cisco ASA 5500 Series Adaptive Security Appliances at the headend, provides the remote-access connectivity portion of Cisco AnyConnect Secure Mobility.

Ideal for Companies That Need These Features

Cisco AnyConnect Secure Mobility Solution

For end users, Cisco AnyConnect Secure Mobility provides:
- A connectivity experience that is intelligent, seamless and always-on
- Secure mobility across today's proliferating managed and unmanaged mobile devices

For security administrators, Cisco AnyConnect Secure Mobility provides:
- Security policy enforcement that is context-aware, comprehensive and preemptive
- Reduced operating costs with a simplified IT operations for all end users
- Improved customer satisfaction by providing flexibility and choice for end users

For company executives, Cisco AnyConnect Secure Mobility provides:
- Ability to boost productivity by enabling mobile access from any device without compromising security
- Provide the end users choice of how, when, and where to access their information

Key Features and Benefits

- Security policy enforcement that is context-aware, comprehensive and preemptive
- A connectivity experience that is intelligent, seamless and always-on
- Secure mobility across today's proliferating managed and unmanaged mobile devices

Specifications

Specifications for the AnyConnect Secure Mobility Client. For the ASA and IronPort S-Series please see other sections

Pre-connection Posture Assessment (Premium license required)	• In conjunction with Cisco Secure Desktop, Host Scan verification checking seeks to detect the presence of antivirus software, personal firewall software, and Windows service packs on the endpoint system prior to granting network access. • Administrators also have the option of defining custom posture checks based on the presence of running processes. • Cisco Secure Desktop can detect the presence of a watermark on a remote system. The watermark can be used to identify assets that are corporate-owned and provide differentiated access as a result. The watermark checking capability includes system registry values, file existence matching a required CRC32 checksum, IP address range matching, and certificate issued by/to matching. • An advanced endpoint assessment option is available to automate the process of repairing out-of-compliance applications.
Advanced IP Network Connectivity	• Access to internal IPv4 and IPv6 network resources • Centralized split tunneling control for optimized network access IP address assignment mechanisms: • Static • Internal pool • Dynamic Host Configuration Protocol (DHCP) • RADIUS/LDAP
Client Firewall Policy	• New in AnyConnect 2.5 • Added protection for Split Tunneling configurations. • Used in conjunction with Cisco Secure Mobility to allow for local access exceptions (i.e. printing, tethered device support, etc). • Supports port-based rules for IPv4 and network/IP Access Control Lists (ACLs) for IPv6. • Available for Windows XP SP2, Vista, Windows 7 & Mac OS X
AnyConnect Profile Editor	• New in AnyConnect 2.5 & Adaptive Security Appliance 8.3 • AnyConnect policies may be customized directly from Cisco ASDM (Adaptive Security Device Manager).

For More Information

http://www.cisco.com/en/US/netsol/ns1049/index.html

Cisco 3350 Mobility Services Engine

The Cisco 3300 Series Mobility Services Engine is an open platform that provides a new approach for the delivery of mobility services to enable mobile business applications. A combination of hardware and software, the Mobility Services Engine is an appliance-based solution that supports a suite of software services to provide centralized and scalable service delivery. The Mobility Services Engine transforms the wireless LAN into a mobility network by abstracting the application layer from the network layer, effectively allowing for the delivery of mobile applications across different types of networks, including Wi-Fi, Ethernet, cellular, and RFID.

The Cisco 3300 Series Mobility Services Engine provides an open API that allows a broader ecosystem of partners to access network intelligence in developing industry-relevant mobility solutions. The Mobility Services Engine is an extension of the Cisco Unified Wireless Network, and integrates with Cisco Unified Communications and Cisco compatible devices to deliver a comprehensive approach to business mobility-an approach that extends applications to the right device at the right time, no matter which network is being used.

Key Features and Benefits

- Simplifies provisioning and management of mobility services
- Offers scalable and reliable multidevice, multinetwork application delivery
- Facilitates a broad partner ecosystem for mobile applications development
- As a component of the Cisco Unified Wireless Network, supports lightweight access points
- Integrates with the Cisco Unified Wireless Network, including the Cisco Wireless Control System, for a single mobility management solution

The Cisco 3350 Mobility Services Engine transforms existing WLANs into comprehensive mobility networks through a uniform method of mobility services delivery.

The Cisco 3350 Mobility Services Engine software suite includes:

- Cisco Context-Aware Software to track up to 18,000 devices
- Cisco Mobile Intelligent Roaming for up to 2000 simultaneous devices
- Cisco Adaptive Wireless Intrusion Prevention System (IPS) Software

Specifications

Feature	Cisco 3310	Cisco 3350
Supported Services	• Context-aware software to track up to 2000 devices • Adaptive Wireless Intrusion Prevention System software to support up to 2000 monitor mode access points	• Context-aware software to track up to 18,000 devices • Adaptive Wireless Intrusion Prevention System software to support up to 3000 monitor mode access points.
Evaluation Support	• Customers who purchase a mobility service have the option to trial other mobility services on their MSE at the following scale: • Context-aware client tracking: 100 Clients • Context-aware tag tracking: 100 Tags • Adaptive Wireless Intrusion Prevention: 20 monitor mode access points	
Processor	(1) Dual-Core Intel Processor 1.8 GHz	(2) Quad-Core Intel Xeon Processors 2.33 GHz
Memory	4-GB PC2-5300 (4 x 1 GB)	8-GB PC2-5300 (4 x 2 GB)
Hard Disk	(2) Fixed 247-GB Serial ATA-150 / SATA-300 MBps	(2) Hot-swappable 137-GB SAS-300 MBps drives
Connectivity	Network: Two embedded Multifunction Gigabit Network Adapters	Network: Two embedded Multifunction Gigabit Network Adapters with TCP/IP Offload Engine
Management	SNMP v1, v2c, and v3	SNMP v1, v2c, and v3
Management Interface	Cisco WCS Mobility Services v.5.2 or greater running Internet Explorer 6.0/Service Pack 1 or later	Cisco WCS Mobility Services v.5.2 or greater running Internet Explorer 6.0/Service Pack 1 or later
Network Devices	Cisco 2100, 4400 & 5500 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module, Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet® lightweight access points	Cisco 2100, 4400 & 5500 Series Wireless LAN Controllers; Cisco Catalyst 6500 Series Wireless Services Module, Cisco Catalyst 3750G Integrated Wireless LAN Controller, Cisco Wireless LAN Controller Module (WLCM and WLCM-E) for Integrated Services Routers; Cisco Aironet lightweight access points
Programming Interfaces	SOAP/XML APIs	SOAP/XML APIs
Form Factor	• 1.70 in. x 16.78 in. x 20 in. (4.32 cm x 42.62 cm x 50.8 cm) • 15 lbs (6.8 kg) maximum	• 1.70 in. x 16.78 in. x 27.25 in. (4.32 cm x 42.62 cm x 69.22 cm) • 39.5 lbs (17.92 kg) maximum

Power	· AC power supply wattage: 540W · AC power supply voltage: 100-120V at 50-60 Hz; 200-240V at 50-60 Hz	· AC power supply wattage: 852W · AC power supply voltage: 100-120V at 50-60 Hz; 200-240V at 50-60 Hz · Redundant Power Supplies
Software Compatibility	· Available with Cisco Mobility Services Engine (MSE) Software Release 5.2 or later · Requires WLC software version 4.2.130 or later and Wireless Control System (WCS) Version 5.2 or later · Multiple mobility services can run concurrently on the same MSE using WLC and MSE Software Release 6.0 or later · Supported services may have different software requirements	· Available with Cisco Mobility Services Engine (MSE) Software Release 5.1 or later · Requires WLC software Version 4.2.130 or later and WCS Version 5.1 or later · Multiple mobility services can run concurrently on the same MSE using WLC and MSE Software Release 6.0 or later · Supported services may have different software requirements

Selected Part Numbers and Ordering Information

AIR-MSE-3350-K9	Cisco 3350 Series Mobility Services Engine
AIR-MSE-3310-K9	Cisco 3310 Series Mobility Services Engine

For More Information

http://www.cisco.com/en/US/products/ps9777/index.html

Cisco Catalyst 6500 Series/7600 Series WebVPN Services Module

The Cisco WebVPN Services Module is a high-speed, integrated Secure Sockets Layer (SSL) VPN services module for Cisco Catalyst 6500 Series switches and Cisco 7600 Series routers that addresses the scalability, performance, application support, and security required for large-scale, remote-access SSL VPN deployments. Supporting up to 32,000 SSL VPN users and 128,000 connections per chassis, the Cisco WebVPN Services Module can cost-effectively meet the capacity requirements of large enterprises. The unique virtualization capabilities integrated into the module simplify the policy creation and enforcement for diverse enterprise user communities and make it an ideal solution for managed service providers. Taking advantage of the broad, industry-proven application support and endpoint security provided by Cisco VPN 3000 Series concentrators, the Cisco WebVPN Services Module is ideally suited to meet the secure connectivity demands of any organization.

Ideal for Companies That Need These Features

Cisco Catalyst 6500 Series/7600 Series WebVPN Services Module
· Ability to add a high-speed, integrated SSL VPN services module for Cisco Catalyst 6500 Series Switches and Cisco 7600 Series routers

Key Features and Benefits

· Integration with network infrastructure—Incorporating VPN into the Cisco Catalyst 6500 Series switches and Cisco 7600 Series Internet routers helps secure the network without the need for extra overlay equipment or network alterations.
· Virtualization and VRF awareness—Virtualization technology is a way to pool resources while masking the physical attributes and boundaries of the resources from the resource users. Up to 128 virtual routing and forwarding (VRF)-aware virtual contexts are supported per module.
· Advanced endpoint security—A primary component of the Cisco WebVPN Services Module, Cisco Secure Desktop offers preconnection security posture assessment and a consistent and reliable means of eliminating all traces of sensitive data.
· Scalability—A single module is capable of supporting up to 8000 simultaneous users and up to 32,000 concurrent connections. Up to four modules can be supported in a single chassis to support up to 32,000 simultaneous SSL VPN users and 128,000 connections.
· Ease of deployment—The Cisco WebVPN Services Module comes with integrated device manager support. This helps configure and provision the module without the need for an external element management system, providing a ready-to-deploy solution.

Specifications

Feature	Cisco Catalyst 6500 Series/7600 Series WebVPN Services Module
Scalability	· Up to 8000 users · Up to 300 Mbps · Up to 64 SSL VPN virtual contexts and 64 gateways · Up to 4 modules in a chassis
Virtualization	Ability to divide into multiple contexts, with each context as a complete logical representation of the WebVPN Services Module, complete with separate policies and configuration

VRF-Aware	· VRF mapping
	· Single-IP model (URL-based or login-name-based)
	· Multiple-IP model
	· Per-VRF AAA server
	· Per-VRF DNS server
	· Per-VRF gateway
	· Per-VRF number of users
User Authentication	· RADIUS
	· Windows NT, Active Directory, UNIX NIS
	· Group-based access control using Cisco Secure Access Control Server (ACS)
End-System Integrity (Cisco Secure Desktop integration)	· Antivirus check
	· Personal firewall check
	· Seeks to minimize risk of temporary and downloaded files and cookies from remaining on system
Redundancy and Load Sharing	· Stateless failover
	· Cisco IOS® Software server-load balancing (SLB) and Content Switching Module integration within the chassis
	· Active/Active failover
Application Support	Web access, file services, e-mail, Telnet, file transfer, legacy applications, specialized applications
Browser Support	Netscape, Internet Explorer, Firefox
Protocols	SSL 3.0 and 3.1; TLS 1.0
Configuration and Management	Console CLI, HTTP, HTTPS, Telnet, Secure Shell (SSH)
Syslog Support	Console display, external server, internal buffer
Cipher Suites	· SSL_RSA_WITH_RC4_128_MD5
	· SSL_RSA_WITH_RC4_128_SHA
	· SSL_RSA_WITH_DES_CSC_SHA
	· SSL_RSA_WITH_3DES_EDE_CBC_SHA
Network Access Control	IP address, Differentiated Services Code Point/Type of Service (DSCP/ToS), TCP/UDP port, per-user, per-group

Selected Part Numbers and Ordering Information

WS-SVC-WEBVPN-K9	WebVPN Services Module for Cisco Catalyst 6500 Series and Cisco 7600 Series
WS-SVC-WEBVPN-K9=	WebVPN Services Module (spare)
SC-SVC-WVPN-1.1-K9	WebVPN Services Module Software 1.1
SC-SVC-WVPN-1.1-K9=	WebVPN Services Module Software 1.1 (spare)
FR-SVC-WVPN-5000	Cisco Catalyst 6500 and Cisco 7600 WebVPN 5000 user license
FR-SVC-WVPN-8000	Cisco Catalyst 6500 and Cisco 7600 WebVPN 8000 user license

For More Information
http://www.cisco.com/en/US/products/ps6404/index.html

Cisco Security Agent

Businesses are under intense pressure to protect their IT assets from attacks that are increasing in frequency and sophistication. At the same time they need to address stringent compliance requirements and minimize expenses and complexity.

Cisco Security Agent 6.0.2 is the first endpoint security solution that combines zero update attack defense, policy driven data loss prevention, and signature based anti-virus detection into a single agent. This unique blend of capabilities defends servers and desktops against sophisticated zero-day attacks and enforces acceptable-use and compliance policies within a simplified management infrastructure.

Ideal for Companies That Need These Features

Cisco Security Agent	· Zero-update protection to prevent brand new exploits, targeted attacks
	· Continuously defends critical servers that cannot be taken offline to patch
	· Identification and control of sensitive data
	· Regulatory-compliance auditing and control
	· Enhanced visibility into threats in the network
	· Automatic, no-cost antivirus signature updates
	· Always-on protection, even when not connected to the corporate network
	· Lower total cost of ownership

Key Features and Benefits

- Provides industry-leading protection against day zero exploits for laptops, desktops, servers, and POS devices.
- Provides visibility and control of sensitive data across all endpoints; protecting against data loss from both end-user actions and targeted malware.
- Access to sensitive files is audited; policy controls can be implemented to stop malicious data transfers to removable media or through insecure network applications
- Imposes restrictions for wireless and remote users (i.e. cannot copy sensitive information to removable media while off the corporate network).
- Provides behavioral-based protection from known and unknown threats.
- Zero-update protection is critical when addressing brand new exploits or variants that take advantage of published/unpublished system and application vulnerabilities.
- Offers network collaboration that strengthens the security posture of the organization.
- Offers comprehensive management, visibility, and reporting.
- Critical endpoint component of the Cisco Secure Borderless Network architecture

For More Information

http://www.cisco.com/go/csa

Cisco Virtual Office

Remote worker solutions from Cisco boost flexibility and productivity and extend the enterprise by delivering secure, rich, and manageable network services to teleworkers and employees working outside the traditional office environment. By providing full IP phone, wireless, data, and video services, Cisco Virtual Office provides a smooth, office-caliber experience to staff, wherever they may be located.

The Cisco Virtual Office solution consists of the following components:

- A remote-site presence with a Cisco 800 Series Integrated Services Router and a Cisco Unified IP Phone 7900 Series phone.
- Headend presence remote-site aggregation includes a VPN router and centralized management software for policy, configuration, and identity controls. Cisco and approved partners provide deployment and ongoing services for successful deployment and integration as well as consultative guidance for automating the deployment.

Deployment Options

Cisco Virtual Office includes provisioning and management through numerous management tools that provide the ability to define network-wide policy, use identity for authorization, and actively update configurations at remote sites.

Cisco Virtual Office Express refers to a simplified architecture to address initial installation steps. It extends the same network services available through the Cisco Virtual Office solution but is distinct in its ability to quickly set up the secured connections between sites. Cisco Virtual Office Express has a reduced number of management and headend components to provide rich functions while keeping operating costs low.

Solution Benefits

The Cisco Virtual Office solution addresses many of the requirements associated with remote working for both end users and organizations alike. In doing so, it also provides benefits across three distinct organizational groups:

- For end users—Cisco Virtual Office allows schedule flexibility and improves work/life balance by providing the ability to work at home or on the road. The solution also provides integrated family support with multiple Service Set Identifiers (SSIDs) for wireless and separate VLANs for a secure "split-tunneling."
- For IT groups—Cisco Virtual Office simplifies the process of extending real-time, high-performance network services to remote locations. These services are delivered without any compromise to the overall security policy. Traffic is protected through VPN technologies, and authorization to access corporate resources is managed through strict identity controls. This solution also provides architecture for centralized, simplified management and operations, and contributes to improved scalability security and low total cost of ownership. For example, Cisco IT effectively supports more than 15,000 Cisco Virtual Office deployments with just a handful of resources. This support is particularly important because users at these locations have heightened expectations for the delivery of virtual office services, and these locations typically do not have IT staff for onsite support. For an even simpler deployment model, Cisco Virtual Office Express comprises a single, integrated device that results in initial cost savings as well as investment protection in the form of the scalability and modularity of the routers as business needs expand. With only one management solution to learn, training needs are minimized and ongoing operations are simplified.
- For businesses and organizations—This solution improves productivity of the workforce while saving costs associated with energy, facilities, and real estate. It also enables better business resiliency, allowing the workforce to stay secure and connected if employees cannot get to the office or are traveling.

A Differentiated Solution

Teleworkers and technology that enables teleworking has existed for many years, but the solutions in the past have typically lacked a critical component, creating a barrier to adoption. Perhaps the solution is not robust enough to handle communication and collaboration applications. Perhaps it lacks the proper security controls to comply with corporate standards. Or perhaps it does not use unified communications or wireless technologies, making it less convenient. Cisco Virtual Office delivers a truly comprehensive solution that addresses each of these concerns, providing mutual benefits to the end user, the IT department—and ultimately—the business.

For More Information

http://www.cisco.com/go/cvo

Cisco Security Manager

Cisco Security Manager is an enterprise-class management application that provides insight into and control of Cisco security and network devices. Cisco Security Manager offers comprehensive security management (configuration and event management) across a wide range of Cisco security appliances, including Cisco ASA Adaptive Security Appliances, Intrusion Prevention System (IPS) Sensor Appliances, Integrated Services Routers, Firewall Services Modules, and Cisco Catalyst 6000 Series Switches. Cisco Security Manager allows you to efficiently manage networks of all sizes-from small networks to large networks consisting of hundreds of devices.

Cisco Threat Defense

Cisco threat defense helps organizations secure and manage their borderless network environment. Organizations are protected from today's dynamic threat environment using proactive intelligence from Cisco Security Intelligence Operations (SIO), market-leading network security devices, and a single, integrated management platform.

Simplified Security Management

- Next-generation Cisco Security Manager enables organizations to gain insight and control of the entire security topology through a single, integrated user interface, including:
    - Global policies for Cisco ASA and IPS Appliances
    - Single console for configuration and device changes
- Next-generation Cisco Security Manager increases visibility into security environment so that you can better understand and respond to threat patterns and risk. Features include:
    - Single view of Cisco IPS with Cisco Global Threat Correlation engine and ASA-thwarted events
    - Single view of traffic statistics
    - Drill-down capabilities
    - Integration of reputation data into IPS events
    - Dynamic policy tuning based on actionable events
- Cisco IPS with the Cisco Global Threat Correlation engine reduces the time needed to manage IPS by providing more accurate detection and automated rule sets
- Support for event-to-policy linkages and cross-launching
- Integrated troubleshooting tools such as Cisco Packet Tracer and the traceroute command
- Detection of out-of-band changes and selective ASA policy management for heterogeneous operational IT environments
- Simplified policy definition paradigms for ASA appliances (providing Network Address Translation [NAT] services) and Global Access Rules for improved management efficiency
- Enhanced support for Cisco's latest intrusion protection system (IPS) and firewall features, such as Botnet Traffic Filter and the Global Threat Correlation engine, for an improved threat response experience

For More Information

http://www.cisco.com/go/csmanager

Cisco Security Monitoring, Analysis, and Response System (MARS)

Cisco Security Monitoring, Analysis and Response System (MARS) is a family of high-performance, scalable appliances for threat management, monitoring, and mitigation that enable customers to make more effective use of network and security devices by combining traditional security event monitoring with network intelligence, context correlation, vector analysis, anomaly detection, hotspot identification, and automated mitigation capabilities. By combining network intelligence, an understanding of network topology, and automated mitigation capabilities, Cisco Security MARS helps companies accurately identify and eliminate network attacks while maintaining network compliance.

Ideal for Companies That Need These Features

Cisco Security MARS 25; **Cisco Security MARS 25R**	· Low-end device to plot network topology and gain insight into network topology · Ideal for small offices, test labs, departments, small retail establishments, DMZs, and CPE
Cisco Security MARS 55	· Consolidation of firewall and intrusion detection system (IDS) with network events and network flows in a small network · Ideal for small to medium-sized offices, remote branch offices, retail establishments, small businesses, DMZs, and CPE
Cisco Security MARS 110	· Ideal for second-generation appliances for large offices and CPE
Cisco Security MARS 110R	· Ideal for large enterprises, central offices, and large firewalls
Cisco Security MARS 210	· Ideal for second-generation appliances for large enterprises, central offices, and large firewalls (FWSMs)
Cisco Security MARS GC; **Cisco Security MARS GC2**	· Ideal for large distributed environments and multiservice switching platforms (MSSPs). · Useful for autonomous business units that are rolling activities to global teams and for state and federal governments for consolidating activities from various agencies

Key Features and Benefits

- Centralized monitoring—Cisco Security MARS provides detailed information about the network infrastructure, including routers, switches, firewalls, VPN concentrators, and endpoint devices, through a variety of device logs, alerts, and NetFlow communication. It also provides process threat information down to the IP and MAC address, nearest attached switch port, as well as the attack path through the network.
- Central event repository—The central event repository serves as a central repository for all events generated by security devices, such as firewalls, authentication servers, network intrusion prevention systems (IPSs) and intrusion detection systems (IDSs) and proxy servers. All collected events are cross-correlated in real time.
- Data reduction—Cisco Security MARS can reduce millions of security events to a handful of actual reported network incidents.
- Timely attack mitigation—Built-in expertise recognizes and recommends mitigation for attacks before they can bring down an entire network.
- End-to-end network awareness—The application integrates Network Address Translation (NAT), Port Address Translation (PAT), and MAC address information to identify attackers, targets, and network hotspots in graphical form for quick action. It uses the full configurations of all types of network devices and end systems. Pre- and post-NAT addresses can be displayed.
- Integrated vulnerability assessment—This solution determines whether a possible network attack is genuine or a false positive, reducing the number of alarms and the time needed to take action.
- Reduced deployment and operation cost—Cisco Security MARS discovers and then maps the topology of a network and becomes operational in a very short period of time.
- Standard 802.1x support—The application facilitates authentication of a host connecting to the switch port before obtaining an IP address.
- Cisco Distributed Threat Mitigation (DTM) and CICS support—This collaborative solution proactively identifies the most active signatures from the IPS appliance deployed in the network and, based on the most active threats detected on the network, distributes the same IPS signatures to the user-defined Cisco IOS IPS devices.
- Case management—Administrators can escalate an incident by creating a case and forwarding the case with notes to other users and security administrators.
- NetFlow analysis—Cisco IOS NetFlow data is collected and analyzed by Cisco Security MARS, at speeds as high as 300,000 flows per second.

Specifications

Feature	CS-MARS-25R-K9	CS-MARS-25-K9	CS-MARS-55-K9	CS-MARS-110-K9
Storage	120 GB (non-RAID)	120 GB (non-RAID)	240 GB RAID 0	1500 GB RAID 10 Hot-swappable
Form Factor	1RU x 16	1RU x 16	1RU x 25.6	2RU x 27 3/4" (D); 3.44" (H); 19" (W)
Power Supply	300W, 120/240V autoswitch	300W, 120/240V autoswitch	300W, 120/240V autoswitch	2 x 750W dual-redundant 120/240V autoswitch
Performance				
Events/sec.	50	500	1000	7500
Netflows/ sec.	1500	15,000	30,000	150,000
Feature	CS-MARS-210-K9	CS-MAR-GC-K9	CS-MARS-GC2-K9	
Storage	2000 TB RAID 10 Hot-swappable	1 TB RAID 10 Hot-swappable	2 TB RAID 10 Hot-swappable	
Form Factor	2 RU x 27 3/4" (D); 3.44" (H); 19" (W)	4RU x 25.6	2 RU x 27 3/4" (D); 3.44" (H); 19" (W)	
Power Supply	2 x 750W dual-redundant 120/240V autoswitch	500W dual-redundant 120/240V autoswitch	2 x 750W dual-redundant 120/240V autoswitch	
Events/sec.	15,000			
Netflows/ sec.	300,000			
Maximum Connections		Not restricted	Not restricted	

Selected Part Numbers and Ordering Information

Cisco SMARTnet Service Part Number		
CS-MARS-25R-K9	CON-SNT-MARS25R	Cisco Security MARS 25R
CSMARS-25-K9	CON-SNT-MARS25	Cisco Security MARS 25
CSMARS-55-K9	CON-SNT-MARS55	Cisco Security MARS 55

CSMARS-110R-K9	CON-SNT-MARS110R	Cisco Security MARS 110R
CSMARS-110-K9	CON-SNT-MARS110	Cisco Security MARS 110
CSMARS-210-K9	CON-SNT-MARS210	Cisco Security MARS 210
CSMARS-GC2R-K9	CON-SNT-MARSGC2R	Cisco Security MARS GC2R
CSMARS-GC2-K9	CON-SNT-MARSGC2	Cisco Security MARS GC2

For More Information

http://www.cisco.com/go/mars

Cisco Physical Access Gateway

An integral component of the Cisco Physical Access Control solution, the Cisco Physical Access Gateway is the primary module used to connect door hardware (readers, locks, etc.) to the IP network. The gateway can connect to a maximum of two doors and associated inputs and outputs.

The Cisco Physical Access Gateway is a mandatory component of any access-control deployment. The following optional modules may be connected to the Cisco Physical Access Gateway to control additional doors, inputs, and outputs:

· Cisco Physical Access Gateway Reader Module
· Cisco Physical Access Gateway Input Module
· Cisco Physical Access Gateway Output Module

Key Features and Benefits

· Manage up to two doors
· Additional module support
· Reader and lock power
· Credential cache
· Event cache
· Encryption

Specifications

Feature	Cisco Physical Access Gateway			
Housing	Aluminum			
Dimensions (LxWxH)	5 x 7 x 2.14 in. 127 x 178 x 54.6 mm			
Weight	Without Plugs and Brackets	With Plugs	With Brackets	With Plugs and Brackets
	1.65 lb (749 g)	1.8 lb (817 g)	1.81 lb (823 g)	1.97 lb (891 g)
Certifications	FCC UL CE			
Operating Temperature	Indoors only 32 to 122ûF (0 to 50ûC)			
Humidity	5 to 95% relative, non-condensing			
Power	There are two options to power the device: 12 to 24 VDC (+/- 10%) through an external power supply 802.3AF-compliant Power over Ethernet (PoE) connected to the Ethernet 0 connector			

Selected Part Numbers and Ordering Information

The Cisco Physical Access Gateway is available through Cisco Authorized Technology Provider (ATP)

CIAC-GW-K9	Cisco Physical Access Gateway

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Physical Access Manager

Cisco Physical Access Manager (Version 1.2) is the management application for the Cisco Physical Access Control solution. It comes installed on hardware, and is sold as an appliance. This application is used to configure Cisco Physical Access Gateways and Modules, monitor activity, enroll users, and integrate with IT applications and data stores.

Key Features and Benefits

- Thin clients—Cisco Physical Access Manager supports a thin-client model. Clients from computers running the Windows operating system can contact Cisco Physical Access Manager and download and install an application that allows interaction with the Cisco Physical Access Manager for administrative purposes.
- Microsoft Active Directory integration—You can configure administrative users of Cisco Physical Access Manager to use Microsoft Active Directory for authentication.
- Badging and enrollment—An optional licensable module enables the creation of badge templates, badge printing, taking user photographs, and enrolling users into the Cisco Physical Access Manager user database.
- Device configuration—You can configure Cisco Physical Access Gateway hardware using Cisco Physical Access Manager. The access gateway contacts Cisco Physical Access Manager, to download pre-provisioned configuration information.
- Access policies—You can assign areas (comprising a group of doors) and users entry permission based on schedules.
- User rights —You can assign permissions to administrative users of the Cisco Physical Access Manager and you can tailor user profiles very specifically.
- Credential management—You can edit cardholder credentials, including system wide card formats.
- Alarm and event management—Cisco Physical Access Manager provides a view of events and alarms in the system. You can filter alarm and event views based on several criteria.
- Global I/O—You can associate events (contact closure inputs or card access denied, for example) to actions (activate output contact closures, send an e-mail message, etc.).
- Reporting—You can create standard and custom reports with Cisco Physical Access Manager.
- Audit trails—Cisco Physical Access Manager provides a log of all administrative uses of the system, arranged by user.
- Enterprise application integration—An optional licensable component allows Cisco Physical Access Manager to be synchronized with data from either external SQL databases or Microsoft Active Directory.
- Cisco Video Surveillance Manager integration—Cisco Physical Access Manager dynamically acquires camera inventory from Cisco Video Surveillance Manager and associates cameras to doors; you can view recorded or live video for every event from the door.
- License management—You can add license files (capacity upgrades or feature additions) to the application.
- Server administration—You can administer the Cisco Physical Access Manager appliance by performing tasks such as IP address assignment.
- Access gateway image management—You can upgrade Cisco Physical Access Gateway images using the Cisco Physical Access Manager.
- Configuration backup—You can back up the entire configuration to an external server.
- System restore—You can restore previously backed up configuration from an external server.
- High availability—You can configure two Cisco Physical Access Manager appliances as a pair to provide warm standby redundancy; you must install the secondary appliance with a high-availability license.
- URL Invocation—HPPT/S URLs can be invoked as a result of any event or alarm. Event data can be inserted in the URL to integrate with any external application that accepts URL invocations.
- Web Services API—A licensable option allows for external systems to use a Web Services API to integrate with CPAM. Both HTTP and SOAP/XML bindings are supported.

Specifications

The following table lists the hardware specifications of the Appliance on which Cisco Physical Access Manager Version 1.1 is installed.

CPU	Intel Core2 Duo 2.13-GHz processor with a 1066-MHz front side bus (FSB) and 2 MB of Level 2 cache
Memory	4 GB PC2-5300 DDR2 SDRAM ECC
Hard Drive	250 GB SATA 7200 RPM
Ethernet	2 X 10/100/1000 RJ-45, 10BASE-T, 100BASE-TX, 1000BASE-T
Weight	15.0 lb (6.8 kg), base chassis
Maximum Power Consumption	350W (maximum output, power supply rating) 540W (maximum input, power supply rating)

Selected Part Numbers and Ordering Information

The Cisco Physical Access Manager is available through Cisco Authorized Technology Provider (ATP) Partners.

CIAC-PAME-1125-K9	Appliance, bundled with Cisco Physical Access Manager Version 1.0 Software
CIAC-PAME-BD=	Cisco Physical Access Manager Badge Designer and Enroller
CIAC-PAME-HA=	Cisco Physical Access Manager High-Availability License
CIAC-PAME-M64=	Cisco Physical Access Manager 64-module capacity upgrade license
CIAC-PAME-M128=	Cisco Physical Access Manager 128-module capacity upgrade license
CIAC-PAME-M512=	Cisco Physical Access Manager 512-module capacity upgrade license
CIAC-PAME-M1024=	Cisco Physical Access Manager 1024-module capacity upgrade license
CIAC-PAME-EDI=	Cisco Physical Access Manager Enterprise Data Integration License
CIAC-PAME-WSAPI=	Cisco Physical Access Manager Web Services API License

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance 2500 Series IP Cameras

The Cisco Video Surveillance 2500 Series IP Cameras are high-resolution, feature-rich digital cameras designed for superior performance in a wide variety of video surveillance applications. The cameras employ MPEG-4 and MPEG compression to stream 30 frames per second (fps) at D1 NTSC resolution (720 x 480) or 25 fps at D1 PAL resolution (720 x 576), offering efficient network usage while providing high-quality video. Contact closures and two-way audio allow integration with microphones, speakers, and access control systems. (Note: Not all features are supported when using the camera with Cisco Video Surveillance Manager.) With their open, standards-based design, the cameras provide an ideal platform for integration and operation as independent devices or as part of a Cisco Video Surveillance network.

Key Features and Benefits

- Wide dynamic range—The cameras employ powerful digital imaging technology, allowing them to capture high-quality images in a wide variety lighting conditions. They use a progressive scan image sensor with global electronic shuttering to ensure natural color rendition, zero blooming and smear, and minimal motion blurring.
- Dual streaming—The camera can stream MPEG-4 and MJPEG video simultaneously. Each video stream can be configured with individual resolution, quality, and frame rate settings.
- Day/night operation—The camera provides true day/night functionality that includes an IR filter that automatically switches to night mode in low light scenes. This function can be set to manual or automatic control.
- Flexible power options—The cameras support Power over Ethernet (PoE) 802.3af or DC power through an optional external power supply.
- Wireless capabilities—The wireless IP camera model supports 1 x 2 multiple input multiple output (MIMO) communication, which provides better data throughput and higher link range than single-antenna designs. The wireless IP camera offers strong wireless security using Wi-Fi Protected Access (WPA)/WPA2 and supports various network protocols for 802.1x authentication.
- Embedded security and networking—The camera provides 802.1X authentication and hardware-based Advanced Encryption Standard (AES). For enhanced bandwidth management, the camera supports IP Multicast.
- Event notification—The camera can examine designated areas in the video for motion activity and then notify users or other applications when it detects activity that exceeds a predefined threshold. The camera also provides two digital inputs and two digital outputs that can be used to initiate specific actions when an alarm is detected.
- Mounting options—The camera can be installed with a fixed mount or with an optional external pan/tilt mount and motorized zoom lens.

Specifications

Feature	Cisco Video Surveillance 2500 Series IP Cameras
Imaging Device	1/3-in. progressive-scan CMOS with wide dynamic range
Image Control	Automatic white balance (AWB), automatic back lighting, automatic gain control (AGC), automatic exposure (AE), auto-manual iris
Dynamic Range	102 dB typical/120 dB maximum
Minimum Illumination	Color mode: F1.4 @ 0.65 lux Black and white mode: F1.4 @ 0.08 lux
Signal-to-Noise Ratio (SNR)	>48 dB
Lens Selection	Accepts manual or DC auto iris lens
Video Compression	MPEG-4 SP level 0 to 4, ASP level 0 to 5

Audio Compression*	G.711 A-Law, G.711 U-Law, G.726
Resolution and Frame Rate	NTSC/PAL 720 x 480/576 @ 30/25 fps (D1) 704 x 480/576 @ 30/25 fps (4CIF) 352 x 240/288 @ 30/25 fps (CIF)
Video Streaming	· Single-stream MPEG-4 up to D1 720 x 480/576 @ 30/25 fps · Single-stream MJPEG up to D1 720 x 480/576 @ 15 fps · Dual-stream: MPEG-4 and MJPEG · Primary stream MPEG-4 programmable up to 704 x 480/576 @ 25/20 fps · Secondary stream MPEG-4/MJPEG (selectable) programmable up to 352 x 240/288 @ up to 15 fps
Protocols	Dynamic Host Control Protocol (DHCP), File Transfer Protocol (FTP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), Transmission Control Protocol/Internet Protocol (TCP/IP)
Housing	Aluminum
LEDs	Power, Ethernet link, and activity
Dimensions	4.8 x 3.1 x 2 in. (122 x 80 x 50 mm)
Weight	1.15 lb (0.52 kg)
Certifications	· FCC, CE, and UL · Emission: 47 CFR Part 15: 2007, CISPR22: Edition 5, EN55022: Edition 5, EN61000-3-2: 2006, · EN61000-3-3: 1995 [Incamd 1 & 2], ICES-003 Issue 4: 2004, KN 22: 2008, VCCI: V-3/2007.04, Immunity: CISPR24: 1997 [Incamd 1 & 2], EN55024: 1998 [Incamd 1 & 2], EN61000-6-1: 2007
Operating Temperature	Indoors: 32 to 122°F (0 to 50°C) Outdoors (when installed in an appropriate outdoor enclosure with heating and cooling): –40 to 158°F (–40 to 70°C)

Selected Part Numbers and Ordering Information

The Cisco Video Surveillance 2500 Series IP Camera is available through Cisco Authorized Technology Provider (ATP) Partners.

CIVS-IPC-2500	Cisco 2500 IP Camera, full resolution, day/night
CIVS-IPC-2500W	Cisco 2500 IP Camera, full resolution, day/night, wireless
CIVS-PWRPAC-12V	Cisco VS external dual voltage power supply for encode/decode

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance 4000 Series High-Definition IP Cameras

Cisco Video Surveillance 4000 Series IP Cameras are feature-rich digital cameras designed for superior performance in a wide variety of video surveillance applications. The cameras employ true high-definition (HD) video and H.264 compression, streaming up to 30 frames per second (fps) at 1080p (1920 x 1080) resolution, and 60 fps at 720p (1280 x 720) resolution, offering efficient network usage with the highest-quality video. Contact closures and two-way audio allow integration with microphones, speakers, and access control systems. With their open, standards-based design, the cameras provide an ideal platform for integration and operation as independent devices or as part of a Cisco Video Surveillance network.

The Cisco Video Surveillance 4300 Series and 4500 Series IP Cameras (CIVS-IPC-4300 and CIVS-IPC-4500) have identical feature sets, with the exception of the additional digital signal processor (DSP) capabilities specifically designed to support real-time video analytics at the edge on the Cisco Video Surveillance 4500 Series IP Cameras. On these cameras, applications and end users have the option to run multiple analytics packages without compromising video streaming performance on the cameras. This highly flexible computing platform that will be compatible with future versions is ideal for next-generation video analytics applications.

Key Features and Benefits

· True high-definition (HD) video—The cameras stream crisp and clear 1080p (1920 x 1080) video at 30 frames per second while maintaining surprisingly low network bandwidth. For fast-motion applications, you can set the cameras to stream 720p (1280 x 720) video at 60 frames per second.
· Progressive scan video—The cameras capture each frame at its entire resolution using progressive scan rather than interfaced video capture, which captures each field of video. This feature allows for better detail for video of moving objects such as faces and license plates on automobiles.
· Dual streaming—The camera can stream H.264 and MJPEG video simultaneously. Each video stream can be configured with individual resolution, quality, and frame rate settings.
· Day and night operation—The cameras provide true day and night functions including an automatic infrared (IR) filter in low-light scenes. With the appropriate IR-corrected lenses and IR illumination, the cameras can provide HD video in low-light environments.

- Flexible power options—The cameras support Power over Ethernet (PoE) 802.3af, 12-VDC, or 24-VAC power through an optional external power supply.
- Mounting options—You can install the cameras with a fixed mount or with an optional external pan or tilt mount and motorized zoom lens.*
- Embedded security and networking*—The camera provides hardware-based Advanced Encryption Standard (AES). For enhanced bandwidth management, the camera supports IP Multicast.
- Event notification*—The camera can examine designated areas for activity and notify users or other applications when it detects activity that exceeds a predefined sensitivity and threshold. The camera also provides two digital inputs and two digital outputs that can be used to initiate specific actions when an alarm is detected.
- Optional USB memory card*—The camera supports an optional USB memory card for onboard storage of video and other data.
    Note: Features with an asterisk are not available when the camera is used with Cisco Video Surveillance Manager

Specifications

Feature	Cisco Video Surveillance 4000 Series IP Cameras
Imaging Device	1/3-in. progressive-scan RGB CMOS
Image Control	Automatic white balance (AWB), automatic gain control (AGC), automatic exposure (AE), and auto/manual iris
Dynamic Range	65 dB
Minimum Illumination	Color mode: F1.4 @ 0.4 lux Black and white mode: F1.4 @ 0.02 lux
Signal-to-Noise Ratio (SNR)	53 dB
Lens Selection	Accepts manual or DC auto iris lens
Video Compression	H.264, MJPEG
Audio Compression*	G.711 A-Law, G.711 U-Law, AAC
Resolution and Frame Rate H.264	1920 x 1080 @ 30 fps (1080p) 1280 x 720 @ 60 fps (720p) 720 x 480/576 @ 30/25 fps (D1) 704 x 480/576 @ 30/25 fps (4CIF) 352 x 240/288 @ 30/25 fps (CIF)
Resolution and Frame Rate MJPEG	720 x 480/576 @ 30/25 fps (D1) 704 x 480/576 @ 30/25 fps (4CIF) 352 x 240/288 @ 30/25 fps (CIF)
Protocols	Dynamic Host Control Protocol (DHCP), Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS), Network Time Protocol (NTP), Real-Time Transport Protocol (RTP), Real-Time Streaming Protocol (RTSP), Simple Mail Transfer Protocol (SMTP), Secure Sockets Layer/Transport Layer Security (SSL/TLS), Transmission Control Protocol/Internet Protocol (TCP/IP), Secure Real-time Transport Protocol (SRTP), Cisco Discovery Protocol, Bonjour, Simple Network Management Protocol (SNMP), and Secure Shell (SSH)
Housing	Aluminum
LEDs	Power, Ethernet link, and activity
Dimensions	5.2 x 3.1 x 2.5 in. 135 x 79.5 x 65 mm
Weight	1.2 lb 0.54 kg
Certifications	FCC, CE, and UL
Operating Temperature	Indoors: 32 to 122ºF (0 to 50ºC) Outdoors (when installed in an appropriate outdoor enclosure with heating and cooling): −40 to 158ºF (−40 to 70ºC)

Selected Part Numbers and Ordering Information

The Cisco 4000 Series Video Surveillance IP Camera is available through Cisco Authorized Technology Provider (ATP) Partners.

CIVS-IPC-4300	Cisco Video Surveillance 4300 IP Camera, HD, Day/Night
CIVS-IPC-4500	Cisco Video Surveillance 4500 IP Camera, HD, DSP, Day/Night
CIVS-PWRPAC-12V	12 VDC @ 1.6A Power Supply

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance 2000 Series IP Domes

The Cisco Video Surveillance 2000 Series IP Domes are high-resolution, feature-rich digital IP cameras that you can deploy in a wide variety of environments. The cameras use MPEG-4 compression of up to 30 frames per second (fps) at D1 NTSC resolution (720 x 480) or 25 fps at D1 PAL resolution (720 x 576), for efficient network usage and high-quality video. They also support MJPEG compression.

The Cisco Video Surveillance 2500 and 2400 IP Dome models include the same core technology as the 2500 Series IP Cameras. IP Dome 2530V is a vandal-resistant, ruggedized, outdoor camera for difficult environments with high or low temperatures, moisture, or dust. IP Dome 2520V is a vandal-resistant indoor camera for schools, railway platforms, or other public areas. IP Dome 2421 is an indoor-only, ceiling tile mount camera for retail and common office deployment.

Key Features and Benefits

- Wide dynamic range—The camera employs powerful digital imaging technology, allowing it to capture high-quality images in a wide variety of lighting conditions. It uses a progressive scan image sensor with global electronic shuttering to ensure natural color rendition, zero blooming and smear, and minimal motion blurring.
- Dual streaming—The camera can stream MPEG-4 and MJPEG video simultaneously. You can configure each video stream with individual resolution, quality, and frame-rate settings.
- Flexible power options—The camera supports Power over Ethernet (PoE) 802.3af and 12-VDC or 24-VAC power through an optional external power supply.
- Day or night operation—The camera provides true day or night operation and includes an infrared (IR) filter that automatically switches to night mode in low-light scenes. You can set this function to manual or automatic control.
- Cisco Media Application Programming Interface (API)—The camera supports the Cisco Media API, an open, standards-based interface that allows integration with compatible video surveillance management systems
- Embedded security and networking—The camera provides 802.1X authentication and hardware-based Advanced Encryption Standard (AES). For enhanced bandwidth management, the camera supports IP Multicast.

Specifications

Feature	Cisco 2421 Series IP Domes	Cisco 2520 Series IP Domes	Cisco Video Surveillance 2530 Series
Housing	Metal base and polycarbonate transparent cover	Metal base and polycarbonate transparent cover with tamper-resistant mounting	Metal base and polycarbonate transparent cover with tamper-resistant mounting IP-66 rated
LEDs	Power and Ethernet	Power and Ethernet	Power and Ethernet
Dimensions (WxH)	6.64 x 4.36 in. /169 x 111 mm	6.1 x 4.64 in. /155 x 118 mm	6.1 x 4.64 in. /155 x 118 mm
Weight	1.0 kg	1.4 kg	1.4 kg
Operating temperature	32 to 122° F 0 to 50° C	32 to 122° F 0 to 50° C	−30 to 55° C / −22 to 131° F

Selected Part Numbers and Ordering Information

CIVS-IPC-2530V	Indoor/outdoor Cisco standard-definition IP clear dome, D/N, 2.8-10 mm, vandal resistant
CIVS-IPC-2531V	Indoor/outdoor Cisco standard-definition IP smoked dome, D/N, 2.8-10 mm, vandal resistant
CIVS-IPC-2520V	Cisco standard-definition IP clear dome, D/N, 2.8–10 mm, vandal resistant
CIVS-IPC-2521V	Cisco standard-definition IP clear dome, D/N, 2.8–10 mm, vandal resistant
CIVS-IPC-2421	Indoor dome, smoked, lens 2.8–10 mm

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance Stream Manager Software

The Cisco Video Surveillance Stream Manager application is a collection of discrete software modules that provide advanced and flexible configuration, management, and operation of video surveillance networks and solutions. With intuitive GUIs and comprehensive features, Cisco Video Surveillance Stream Manager Software modules function as an integrated platform for security systems and enable true convergence of closed circuit television (CCTV) and the enterprise LAN. Stream manager applications provide digital video, audio, and serial data management across any IP network.

Cisco Video Surveillance Stream Manager Software modules combine the capabilities of many standalone hardware and software systems into one product, including features provided by digital video recorders, matrix

switching systems, video multiplexers, and transmission systems. These system functions are available wherever and whenever there is network connectivity. Whether used in an enterprise network or a small or medium-sized business, the stream manager provides a managed distributed digital video system.

- The Cisco Video Surveillance Stream Manager Configuration Module identifies and programs Cisco Video Surveillance IP Gateway encoders, decoders, and storage devices.
- The Cisco Video Surveillance Stream Manager Administration and Monitoring Module enables monitoring of network, server use, and dynamic system health, and provides status reporting.
- The Cisco Video Surveillance Stream Manager Administration and Monitoring with Failover Module provides all the features of the Administration and Monitoring Module, with the addition of failover management.
- The Cisco Video Surveillance Stream Manager Client Viewing Module provides access to all system operations, including camera control, stored video review, and alarm notifications. This application is the primary PC application for viewing live or stored video from the network.
- The Cisco Video Surveillance Stream Manager Upgrade Module (included in the Cisco Video Surveillance Stream Manager Configuration Module) upgrades firmware in video surveillance hardware.

Key Features and Benefits

- All-in-one video management solution
- User-friendly setup and operation
- IP virtual matrix switch functions
- Complete and secure video storage management
- Distributed processing on Cisco Video Surveillance devices, eliminating the need for a centralized server
- Activity detection and search
- Export video with authentication capabilities
- Advanced network visibility
- Sophisticated playback features, including trick replay functions

Specifications

Feature	Client Viewing Module	All Other Modules
CPU	Pentium dual-core, 2.8 GHz	Pentium IV, 2.8 GHz
RAM	1 GB	512 MB
Hard Drive	40 GB	40 GB
Audio Card	Optional, for listening to audio provided by an encoder	Optional, for listening to system alerts
Video Card	ATI X1600XT 512MB PCI-e or NVIDIA E-GEFORCE 7600GT CO 256MB DDR PCI-e	Standard PC video card
Network Card	10BASE-T, 100BASE-T, 1000BASE-T	10BASE-T, 100BASE-T, 1000BASE-T
Operating System	Microsoft Windows XP Pro with Service Pack 2 or Microsoft Windows Vista Business with Service Pack 1 (supported in Stream Manager 5.3	Microsoft Windows XP Pro with Service Pack 2 or Microsoft Windows Vista Business with Service Pack 1 (supported in Stream Manager 5.3
Web Services	Microsoft Net 2.0	Microsoft Net 2.0

Selected Part Numbers and Ordering Information

CIVS-SM-CFG50=	Cisco Video Surveillance Stream Manager Configuration Module
CIVS-SM-CL50=	Cisco Video Surveillance Stream Manager Client Viewing Module
CIVS-SM-AS50=	Cisco Video Surveillance Stream Manager Administration and Monitoring Module
CIVS-SM-ASF50=	Cisco Video Surveillance Stream Manager Administration and Monitoring with Failover Module

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance Media Server Software

Cisco offers network-centric video surveillance software and hardware that supports video transmission, monitoring, recording, and management. Cisco Video Surveillance solutions work with the advanced features and functions of the IP network infrastructure—switches, routers, and other network security devices—to enable secure, policy-based access to live or recorded video. With support for many surveillance cameras, encoders, and applications, Cisco Video Surveillance solutions allow you to build high-quality video surveillance systems that optimize cost, performance, and capability.

The core component of the Cisco Video Surveillance Manager, Cisco Video Surveillance Media Server 6.0 performs the following networked video surveillance system functions:

- Collection and routing of video from a wide range of cameras and encoders over an IP network
- Secure local, remote, and redundant video archiving
- Event tagging for review and archival purposes
- Bandwidth management for both live distribution and historical recording

Cisco Video Surveillance Media Server is fully compatible with other Cisco Video Surveillance Manager applications that provide video display control and distribution (virtual matrix switching), a customizable web-based user interface for roles-based operation and management, system configuration, and options to support storage area networks (SANs) and network- and direct-attached storage (NAS and DAS). The media server and other Cisco Video Surveillance software applications run on Linux-based servers. As a result, you can upgrade your investment to include new features, address your evolving requirements, and support a diverse range of deployment scenarios.

Key Features and Benefits

By using the power and advanced capabilities of IP networks, Cisco Video Surveillance Media Server Software allows you to add applications, users, cameras, and storage over time. As a result, the software provides exceptional video surveillance system flexibility and scalability to support:

- Deployments that range from small systems to those with thousands of cameras
- Hundreds of simultaneous users accessing live and recorded video
- Standard video codecs such as Motion JPEG, MPEG-2, MPEG-4, and H.264 simultaneously in a single Cisco Video Surveillance Media Server
- Conservation of storage using events, clipping, record-on-motion, and loop-based archival options
- Integration with other security and IT applications using open, standards-based API and Real-Time Transport Protocol (RTP) and Real-Time Streaming Protocol (RTSP) streaming
- IT-caliber, fault-tolerant storage for greater efficiency and easier maintenance

Specifications

The following table lists the minimum system requirements for server and client hardware for Media Server.

Feature	Server System	Client System
CPU	3-GHz Intel Pentium 4	3-GHz Intel Pentium 4
RAM	1 GB	1 GB
Hard Drive	200-GB hard drive	-
Video Card	-	nVidia or ATI AGP graphics adapter with 128 MB RAM
Network Connection	10/100 Ethernet Interface	10/100 Ethernet adapter
Operating System	SUSE Linux Enterprise Server (SLES) version 9 SP 3 or version 10 SP 1 (recommended)	Windows XP and Internet Explorer 6 or 7
Rack Space	1 to 5 RU	-

Selected Part Numbers and Ordering Information

CIVS-MS-SW6.0=	Cisco Video Surveillance Media Server 6.0

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Video Surveillance Operations Manager Software

Cisco offers network-centric video surveillance software and hardware that supports video transmission, monitoring, recording, and management. Cisco Video Surveillance solutions work with the advanced features and functions of the IP network infrastructure—switches, routers, and other network security devices—to enable secure, policy-based access to live or recorded video. With support for many third-party video surveillance cameras, encoders, and applications, Cisco Video Surveillance solutions allow you to build high-quality video surveillance systems that optimize cost, performance, and capability.

Cisco Video Surveillance Operations Manager is a component of the Cisco Video Surveillance Manager suite of products. It enables the efficient and effective configuration and management of video throughout an enterprise. It provides a secure web portal to configure, manage, display, and control video in an IP network, and provides the ability to easily manage a large number of security assets and users, including Cisco Video Surveillance Media Server instances, cameras, encoders, DVRs, and event sources, as well as digital monitors that are powered by Cisco Video Surveillance Virtual Matrix.

Key Features and Benefits

- Offers superior price and performance for managing video surveillance deployments of any size
- Runs on commercial off-the-shelf (COTS) Linux-based servers, making it easier to upgrade to include new features, address your evolving requirements, and support a diverse range of deployment scenarios
- Offers customizable interface for operators and administrators
- Provides multitiered hierarchy of user roles and privileges

- Provides open license with no built-in limits on numbers of users or resources managed and no per-seat costs
- Is compatible with most popular web browsers
- Is compatible with the Cisco Video Surveillance Manager Platform, allowing many choices for cameras, encoders, and related devices, and allowing systems to expand over time

Specifications

The table below lists the minimum system requirements for Operations manager and client hardware.

Feature	Server System	Client System
CPU	3-GHz Intel Pentium 4	3-GHz Intel Pentium 4
RAM	1 GB	1 GB
Hard Drive	200-GB hard drive	-
Video Card	-	nVidia or ATI AGP graphics adapter with 128 MB RAM
Network Connection	10/100 Ethernet Interface	10/100 Ethernet adapter
Operating System	SUSE Linux Enterprise Server (SLES) version 9 SP 3 or version 10 SP 1 (recommended)	Windows XP and Internet Explorer 6 or 7
Rack Space	1 to 5 RU	-

Selected Part Numbers and Ordering Information

CIVS-OM-SW4.0=	Cisco Video Surveillance Operations Manager 4.0

For More Information

http://www.cisco.com/go/physicalsecurity

Cisco Physical Security Multiservices Platform

The Cisco Physical Security Multiservices Platform offers you innovative choices for deploying and managing physical security services, including video surveillance, access control, and flexible incident response communications. It includes a wide array of features in an easy-to-use, and easy-to-deploy server suite.

Cisco physical security multiservices platform software application options are as follows (this platform supports only one software application option at a time):

- Video Surveillance Manager (1-RU)
  - Video Surveillance Manager version 4.2.1/6.2.1
  - 1 × CIVS-HDD-1000-1 TB SATA hard-disk drives in JBOD-like configuration with ~874 GB storage or 4 × CIVS-HDD-1000-1 TB SATA hard-disk drives in RAID-5 configuration with ~2.6 TB storage

    Supports one of the following option cards at a time:
  - 1 × CIVS-FC-1P-Fibre Channel card
  - 1 × CIVS-ES-16EC-16-channel encoder card for MPEG-4/JPEG (at CIF resolution)
- Physical access control (1-RU)
  - Cisco Physical Access Manager version 1.2
  - 1 × CIVS-HDD-1000-1 TB SATA hard-disk drive
- IPICS (1-RU) and 2-RU)
  - Cisco IPICS version 4.0 ready (download required)
  - 2 × CIVS-HDD-1000-1 TB SATA hard-disk drives in RAID-1 mirroring configuration with ~437 GB storage available

Key Features and Benefits

- Built-in 300W high-efficiency power supply in 1-RU
- 900 W high-efficiency power supply with hot-swappable, redundancy option in 2-RU
- High-performance fans with built-in redundancy for optimized cooling
- System health and management features, including redundant cooling fans, a convenient power switch, reset button, and LED indicators
- Optional hot-swappable hard-disk drives that can be removed without powering down the server (must have Redundant Array of Independent Disks [RAID] configuration to be hot-swappable)
- High storage density
- System resiliency
- Hardware diagnostics
- High-performing motherboard

Specifications

1 RU Mechanical Specifications	
Housing	1RU x 19 in., 4 x SATA front-loading drive bays
Motherboard	Intel E5502 1.86 GHz Xeon Dual-Core CPU, 4 GB DDR3 RAM
LEDs	Power, hard-drive activity, network activity, system overheat/fan fail
Weight	· 24.5 lbs. (11.1 kg), 4 × 1 TB hard-disk drives and 1 x power supply · 18.5 lbs. (8.4 kg), with power supply, no HDDs, and no cards
Dimension	1.7 in. (43 mm) x 17.2 in. (437mm) x 19.8 in. (503 mm)
Power Supply	300 W
Power Requirements (no option cards)	110V/60Hz: Spinup Surge: 175 W, Steady-State: 128 W 220V/60Hz: Spinup Surge: 222 W, Steady-State: 143 W
Operating Temperature	50° to 95° F (10° to 35° C)
2 RU Mechanical Specifications	
Housing	2RU x 19 in., 12 x SATA front-loading drive bays
Motherboard	Intel E5502 2.26 GHz Xeon Dual-Core CPU, 4 GB DDR3 RAM
LEDs	Power, hard-drive activity, network activity, system overheat/fan fail
Weight	· 42.5 lbs. (19.3 kg), 6 × 1 TB hard-disk drives and 2 x power supply · 27.5 lbs. (12.5 kg), no power supply, no HDDs, and no cards
Dimension	3.5 in. (89 mm) x 17.2 in. (437 mm) x 25.5 in. (648 mm)
Power Supply	1 × 900 W internal power supply
Power Requirements (no option cards)	110 V/60 Hz: Spin-up surge: 395 W, Steady-state: 274 W 220 V/60 Hz: Spin-up surge: 480 W, Steady-state: 284 W
Operating Temperature	50° to 95° F (10° to 35° C)

Selected Part Numbers and Ordering Information

The Multiservices Platform is available through Cisco Authorized Technology Provider (ATP) Partners.

CPS-MSP-1RU-K9	1-RU chassis with motherboard, one CPU, and one built-in 300W power supply (no drives, no power cables, and no option cards)
CIVS-HDD-1000	1 TB SATA drive for CIVS-MSP and CPS-MSP platforms (1-RU)
CPS-MSP-2RU-K9	2-RU chassis with motherboard, one CPU, and one 900W power supply (no drives and no power cables)
CPS-HDD-6TB-BNDL	6 x 1 TB SATA hard-disk drive bundle for CPS-MSP platforms (2-RU)

For More Information

http://www.cisco.com/en/US/products/ps10823/index.html

Cisco IPICS Server Software

The Cisco IPICS Server supports the management of the Cisco IPICS system. First responders and safety and security personnel use the Cisco IPICS system to enable rapid incident response, collaborative crisis communications, notification, and comprehensive interoperable communications. The Cisco IPICS Server is used to create virtual talk groups (VTGs) to facilitate push-to-talk (PTT) communications between users of multiple types and technologies of Land Mobile Radios with users of PCs, landline phones, cellular and Nextel phones, and Cisco Unified IP Phones.

The Cisco IPICS Server is a security-enhanced, Linux-based platform installed on select Cisco 7800 Series Media Convergence Servers, a family of proven and reliable hardware platforms that you can deploy in mobile command units or in headquarters, branch offices, or operations centers. Other Cisco IPICS system components include the Cisco IPICS Push-to-Talk Management Center (PMC), Cisco IPICS Phone Client, Cisco IPICS Operational Views (Ops Views), Cisco Land Mobile Radio (LMR) gateways, Router Media Service (RMS), and Session Initiation Protocol (SIP) telephony gateways.

Cisco IPICS is a systems-level, network-based solution for voice interoperability. It takes full advantage of open IP standards and IP network infrastructure for greater resiliency, scaling, and security, and is part of a complete communications solution for organizations of all sizes.

Key Features and Benefits

· All-in-one safety and security incident response, communications, and collaboration solution
· User-friendly setup and operation
· Centralized, remote, or distributed administration across locations, agencies, networks, and jurisdictions
· Complete and secure Virtual Push to Talk communications and management

- Support for secure incident management, response, notification, and messaging
- Customizable secure voice dial-in and dial-out access to radio channels and incident virtual talk groups
- Role-based user, dispatch console, operator, and system administrator management
- Support for radio resources, desktop PC clients, and Cisco Unified Communications IP Phone PTT clients
- Integrated support and management of Cisco integrated services routers and Land Mobile Radio gateways
- Proven IP network protocols for critical communications over IP Unicast, IP Multicast, Session Initiation Protocol (SIP), VPN, satellite, IP, and wireless networks

Selected Part Numbers and Ordering Information

CIS-IPICS2.0-K9(=)	Cisco IPICS 2.1 Server software and licenses, including licenses for: • 50 Cisco IPICS Virtual Talk Groups • 4 Cisco IPICS Channel/radio ports • 4 Cisco IPICS PMC clients • 10 Cisco IPICS IP Phone clients • 2 Cisco IPICS Operational Views
CIS-IPICS-PM1-K9(=)	Cisco IPICS Policy Engine for Cisco IPICS 2.1 or Higher Cisco IPICS Policy Engine Dial Port for Cisco IPICS 2.1 or Higher
CIS-VIP-DIAL(=)	Cisco IPICS Policy Engine Dial Port for Cisco IPICS 2.1 or Higher
CIS-VIP-VTG(=)	Cisco IPICS Virtual Talk Group (VTG) for Cisco IPICS 2.1 or Higher
CIS-VIP-CHNL(=)	Cisco IPICS Channel/Radio Port for Cisco IPICS 2.1 or Higher
CIS-PHN(=)	Cisco IPICS IP Phone Client License for Cisco IPICS 2.1 or Higher
CIS-PMC-K9(=)	Cisco IPICS PMC Client for Cisco IPICS 2.1 or Higher
CIS-OPSVIEW2(=)	Cisco IPICS Operational Views for IPICS 2.1 or Higher

For More Information

http://www.cisco.com/go/ipics

Cisco IPICS Dispatch Console

The Cisco IPICS Dispatch Console is an end-to-end radio dispatching solution designed for mission-critical radio communications. It is the vital link between dispatchers and field personnel, helping to coordinate field response and ensure personnel safety. Running on a standard PC platform, it extends existing push-to-talk (PTT) radio channels so that users with a variety of communication devices can participate.

The Cisco IPICS Dispatch Console introduces rich-media incident management support, giving dispatchers the power to consolidate information relating to an incident and instantly share it among participants. Incident dispatch enables the sharing of multimedia data such as the following:

- Live video sent from surveillance cameras, access control gateways, and mobile clients
- Archived videos such as Flip or YouTube
- Photos
- Alarm monitoring
- Journal and live statuses
- Website links

Key Features and Benefits

- Push to talk (PTT) and monitoring for up to 50 radio channels and talk groups
- Selecting, unselecting, and deselecting of channels
- Selecting and unselecting of audio speakers
- Receiving and transmitting of on-screen indicators for channel activity
- Instant recall recording per channel
- Last-call transmit
- Alert tones
- Channel multiselect
- Confirmation tones for trunked systems
- Unit ID and talker ID
- Emergency alert and acknowledge
- Coded and clear channels
- Loop prevention
- Integrated telephone
- Frequency select

Selected Part Numbers and Ordering Information

The Cisco IPICS Dispatch Console comes in two versions, Silver and Platinum. The Silver version provides a simple user interface and supports basic radio and incident dispatch functions. The Platinum version includes patch capabilities, integrated telephone, incident management, and policy management support.

IPICS Dispatch Console is available through Cisco Authorized Technology Provider (ATP) Partners.

CIS-CON4.0-SIL	Cisco Dispatch Console Silver License
CIS-CON4.0-PLA	Cisco Dispatch Console Platinum License
CIS-CON4.0-SIL-UG	Cisco Dispatch Console Silver Upgrade License

For More Information
http://www.cisco.com/go/ipics

Cisco IPICS Mobile Client

The Cisco IPICS Mobile Client is a new component of the Cisco IPICS solution that helps smartphones join an IPICS-enabled incident response network. This smartphone application allows responders to interact with other incident participants. Incidents can be within a single agency or among multiple agencies. With this application, responders can perform a variety of incident-related activities, including:

- Access incident-related push-to-talk (PTT) channels to communicate between responders and radio users
- Obtain up-to-date incident status information from each responder
- Access incident-related video clips, photographs, and status either pushed to them from the dispatcher or added by other responders
- Dynamically add their own video clips, photographs, and status updates

Key Features and Benefits

- Mobility—The Cisco IPICS Mobile Client, based on smartphone technology, moves with the user anywhere there is a wireless network, for example, Wi-Fi or third-generation (3G) cellular network.
- Radio interoperability and beyond—The Cisco IPICS Mobile Client allows PTT interoperability with radio channels and talk groups.
- Rich media—The Cisco IPICS Mobile Client moves beyond audio to support rich media and a new generation of mobile endpoints.
- Open standards compatible—Built as a smartphone application, the Cisco IPICS Mobile Client transfers to new devices as replacement technology is introduced.

Specifications

Platforms	Apple iPhone 3G/3GS
Connectivity	WiFi or 3G with active service (dependent upon Smartphone)
Assigned incidents	Up to 10 suggested for optimum performance
Live video	Up to 10 minutes
Photos	Up to 2 MB
Mobility client	1000 mobile clients per IPICS system

Selected Part Numbers and Ordering Information

The Cisco IPICS Mobile Client requires an Apple iPhone 3G/3GS and iPhone service from a certified service provider. Note: Both the iPhone 3G/3GS can view incident media, add photos, and communicate on the Incident PTT channel. The iPhone 3GS additionally supports video uploading.

The IPICS Mobile Client is available for download free of charge from the Apple App Store. Visit the Apple iPhone website at http://www.apple.com/iphone/apps-for-iphone/. The application name is "Incident".

This application also requires a Cisco IPICS installation as well as one or more IPICS Mobile Client licenses on the IPICS Server, one license for each active IPICS Mobile Client. The Cisco IPICS solution and Mobile Client licenses are available direct from Cisco Advanced Services and through select technology partners.

CIS-MC	Mobile Client IPICS License
CIS-MC-100	Mobile Client IPICS License 100 Units

For More Information
http://www.cisco.com/go/ipics

Cisco Security Services

Cisco and our partners can help you accelerate business transformation, operational maturity, and agility through consultative planning, solution development, and full deployment, creating network architectures that can optimize IT services and enhance your business.

The broad portfolio of Cisco Security Services helps maintain intelligent defenses against information security threats. Services are based on proven methodologies and best practices for designing, deploying, operating, and optimizing network solutions and technologies. This integrated security services portfolio provides solutions for threat management, event management, vulnerability management, and compliance support across a broad range of industries and advanced technologies, including unified communications, storage networking, and wireless networks.

Cisco Services for Physical Security provide comprehensive offerings to help plan, design, implement, and operate physical security solutions.

Cisco has a portfolio of technical services that help maintain the health and performance of every Cisco product. These services range from traditional maintenance to proactive and predictive services that use smart services capabilities. Cisco's Security Services provide detailed diagnostics and real-time alerts on core network devices to help resolve concerns quickly and improve network availability. The Cisco Technical Services portfolio is built on foundational capabilities and expanded performance capabilities to meet the changing technology needs of our customers.

For more information about Cisco Security Services, visit http://www.cisco.com/go/services/security.

Chapter 6: Data Center

This chapter provides only a subset of Cisco products and part numbers.

Data Center At-a-Glance		
Product	**Features**	**Page**
APPLICATION NETWORKING SERVICES		
Cisco Application Control Engine (ACE) Family	· Cisco ACE Family of application control engines simplify the way applications and business services are deployed, secured, and managed across the enterprise · Cisco ACE products provide greater control over the application infrastructure, allowing organizations to quickly deploy and migrate applications to deliver more responsive services to the end user while simplifying the overall management of the data center · Application delivery products within the ACE family include: - Cisco ACE Module for Cisco Catalyst 6500 Series Switches and Cisco 7600 Series Routers - Cisco ACE 4710 Appliance - Cisco ACE Global Site Selector (GSS) 4400 Series	6–3
Cisco Wide Area Application Services (WAAS) Family ***NEW UPDATES***	· Cisco WAAS Family of products is a comprehensive set of WAN-optimization solutions that accelerate applications over the WAN, deliver video to the branch office, and provide local hosting of branch-office IT services · WAN-optimization products within the Cisco WAAS Family include: - Cisco Wide Area Application Services (WAAS) - Cisco Wide Area Application Services (WAAS) Mobile - Cisco Wide Area Application Engines - Cisco Wide Area Virtualization Engine (WAVE) - Cisco Application and Content Networking System (ACNS) Software	6–5
DATA CENTER SECURITY		
Cisco ASA 5500 Adaptive Security Appliance	· Easy-to-deploy solutions that integrate world-class firewall, unified communications (voice and video) security SSL and IPSec VPN, intrusion prevention systems (IPSs), content security services, and secure unified communications in a flexible, modular product family	See 5–4
Cisco Catalyst 6500 Series Firewall Services Module (FWSM)	· High-speed, integrated firewall module for Cisco Catalyst 6500 Switches and Cisco 7600 Series Routers · Provides the fastest firewall data rates in the industry: 5-Gbps throughput, 100,000 cells per second (CPS), and 1 million concurrent connections · Up to four FWSMs can be installed in a single chassis, providing scalability to 20 Gbps per chassis · Based on Cisco PIX Firewall technology, the Cisco Catalyst 6500 FWSM offers large enterprises and service providers unmatched security, reliability, and performance	See 5–12
Cisco ACE Web Application Firewall	· Combines deep Web application analysis with high-performance Extensible Markup Language (XML) inspection and management to address the full range of these threats · Secures and protects Web applications from common attacks such as identity theft, data theft, application disruption, fraud, and targeted attacks	See 5–23
Cisco Secure Access Control System (ACS)	· Controls network access based on dynamic conditions and attributes · Next-generation platform for centralized network identity and access control · Simple yet powerful, rule-based policy model and a new, intuitive management interface designed for optimum control and visibility	See 5–15
Cisco Security Monitoring, Analysis, and Response System (MARS)	· Centralized monitoring, event-correlation, and attack-mitigation system	See 5–33
DATA CENTER SWITCHING		
Cisco Nexus 7000 Series Switches	· Designed specifically for the data center · Offers exceptional scalability, continuous systems operation, and transport flexibility · Modular data center-class switching system designed for 10-Gigabit Ethernet networks · Cisco Nexus architecture scales beyond 15 terabits per second, with future availability of 40- and 100-Gigabit Ethernet and unified fabric I/O modules	6–8
Cisco Nexus 5000 Series Switches ***NEW UPDATES***	· Delivers an architecture built on high-performance Ethernet unified fabric · Platform consolidates separate Local Area Network (LAN), Storage Area Network (SAN) and server cluster network environments into a single unified fabric	6–9
Cisco Nexus 4000 Series Switches ***NEW PRODUCT***	· Cisco Nexus 4001I Switch Module for the IBM BladeCenter product is a 10 Gigabit Ethernet switch module that you install in an IBM BladeCenter enclosure · Cisco Nexus 4000 Series offers a solution for high-end data centers where server virtualization and I/O consolidation are required	6–10

Cisco Nexus 2000 Series Fabric Extenders ***NEW UPDATES***	· Provides a universal server-access platform that scales across a range of Gigabit Ethernet, 10 Gigabit Ethernet, unified fabric, rack, and blade-server environments	6–10

Cisco Nexus 1000V Series Switches	· Intelligent software virtual switch implementation for VMware ESX hypervisor environments
	· Supports Cisco VN-Link server virtualization technology, and provides:
	  - Policy-based virtual-machine (VM) connectivity
	  - Mobile virtual-machine security and network policy
	  - Nondisruptive operational model for server virtualization and networking teams
		6–11

Cisco Catalyst 6500 Series Switches	· Simplifies operations, reduces network costs, and increases resiliency through its Virtual Switch System 1440 technology · Automates network services, energy control and minimizes total cost of ownership with features such as GOLD, OBFL, SmartCallHome, Energywise · Delivers comprehensive features for operational management, integrated services, QoS, and high availability · Integrates services through its portfolio of service modules	See 2–4
Cisco Catalyst 4900M Series Switches	· Optimized for small-to-medium aggregation · Supports up to 24 ports with 10 Gigabit Ethernet interfaces · Supports up to 32 ports with 1 Gigabit Ethernet · Provides up to 320 Gbps forwarding capacity · Supports critical routing protocols and IPv6 in hardware including multicast · Features hot-swappable, redundant power supply and fans	See 2–12
UNIFIED COMPUTING		

Cisco Unified Computing System
 	
NEW UPDATES
	· Next-generation data center platform that unites compute, network, storage access, and virtualization into a cohesive system designed to reduce total cost of ownership (TCO) and increase business agility
	· Built from the following components:
	  - Cisco UCS 6100 Series Fabric Interconnects
	  - Cisco UCS 5100 Series Blade Server Chassis
	  - Cisco UCS 2100 Series Fabric Extenders
	  - Cisco UCS Network Adapters
	  - Cisco UCS Manager
		6–11

Cisco UCS B-Series Blade Servers
 	
NEW PRODUCT
	· Based on Intel Xeon 5500 and 5600 series processors, adapt to application demands, intelligently scale energy use, and offer best-in-class virtualization
	· Cisco's innovative memory-expansion technology substantially increases the memory footprint, improving performance and capacity for demanding virtualization and large-data-set workloads
	· Technology offers a more cost-effective memory footprint for less-demanding workloads. The blade-server offerings include:
	  - Cisco UCS B440 M1 High-Performance Blade Server
	  - Cisco UCS B250 M2 Extended Memory Blade Server
	  - Cisco UCS B200 M2 Blade Server
		6–12

Cisco UCS C-Series Rack Mount Servers
 	
NEW PRODUCT
	· Extends unified computing innovations to an industry-standard form factor
	· Designed to operate both in standalone environments and as part of the Cisco Unified Computing System, the series incorporates standards-based unified network fabric, Cisco VN-Link virtualization support, and Cisco Extended Memory technology
	· Supports an incremental deployment model with a future migration path to unified computing
	· The portfolio includes:
	  - Cisco UCS C460 M1 High-Performance Rack-Mount Server
	  - Cisco UCS C250 M2 Extended-Memory Rack-Mount Server
	  - Cisco UCS C210 M2 General-Purpose Rack-Mount Server
	  - Cisco UCS C200 M2 High-Density Rack-Mount Server
		6–13

STORAGE NETWORKING—FIBRE CHANNEL SWITCHING		

Cisco MDS 9500 Series Multilayer Directors
 	
NEW UPDATES
	· Share a common architecture, the Cisco MDS 9000 SAN-OS operating system, and switching and services modules that are backward- and forward-compatible throughout all Cisco MDS 9500 Series Multilayer Directors and MDS 9200 Series Multilayer Fabric Switches
	· The portfolio includes:
	  - Cisco MDS 9513 Multilayer Director
	  - Cisco MDS 9509 Multilayer Director
	  - Cisco MDS 9506 Multilayer Director
		6–14

Cisco MDS 9200 Series Multilayer Switches ***NEW PRODUCT***	· Delivers state-of-the-art multiprotocol and distributed multiservice convergence, offering high-performance storage-area-network (SAN) extension and disaster-recovery solutions, intelligent fabric services, and cost-effective multiprotocol connectivity · The portfolio includes: - Cisco MDS 9222i Multiservice Modular Switch	6–16

Cisco MDS 9100 Series Multilayer Fabric Switches ***NEW PRODUCT***	· Cost-effective, scalable, easy-to-install, and highly configurable Fibre Channel switches are ideal for small to medium-sized businesses
	· Available as blade-switch form factors for market-leading blade servers, including IBM and HP blade servers
	· The portfolio includes:
	  - Cisco MDS 9148 Multilayer Fabric Switch
	  - Cisco MDS 9134 Multilayer Fabric Switch
	  - Cisco MDS 9124 Multilayer Fabric Switch
		6–16

Cisco MDS 9000 Series Intelligent Fabric Applications ***NEW PRODUCT***	· Applications such as continuous data replication, Cisco Storage Media Encryption (SME), Cisco MDS Data Mobility Manager (DMM), and network-based volume management address customer concerns related to storage provisioning, security, data migration and replication, backup and recovery, storage usage, and increasing storage costs
	· The portfolio includes:
	  - Cisco MDS 9000 XRC Acceleration
	  - Cisco MDS 9000 Storage Media Encryption
	  - Cisco MDS 9000 Family I/O Accelerator (IOA)
	  - Cisco MDS Data Mobility Manager (DMM)
	  - Cisco Nexus OS operating system
		6–17

Cisco Catalyst Blade Switch 3000 and 3100 Series	· Includes Cisco Catalyst Ethernet blade switches and Cisco MDS Fibre Channel blade switches for blade servers
	· Supports blade-server network services that extend from the blade-server edge to clients at the network edge
	· Provides a virtualized data center infrastructure that can help lower total cost of ownership
	· Family includes:
	  - Cisco Catalyst Blade Switch 3100 Series for Dell—Specifically designed to meet the rigors of blade-server application infrastructure
	  - Cisco Catalyst Blade Switch 3000 Series—Designed to support the HP Blade-System c-Class
		6–19

SERVICES

Cisco Data Center Services Cisco Services help you transform and optimize your data center infrastructure so you can reduce costs, deliver high availability and application performance, and better meet your service level agreements.	6–20

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco Application Control Engine (ACE) Family

Enhance the application performance and availability of your virtual data center with Cisco Application Control Engine (ACE) products. The ACE application delivery services platform features a virtualized architecture and addresses many of the core challenges of the virtual data center. The products help improves scale and availability while improving the utilization of infrastructure resources.

Key Features And Benefits

· Virtual machine (VM) intelligence for visibility into the state of VM applications and underlying infrastructure
· Automation that allows dynamic changes in the network
· Performance and scale to address the demands of enterprises and service providers

For More Information

http://www.cisco.com/go/ace

Cisco Application Control Engine (ACE) Series Module

The Cisco ACE Application Control Engine Module for Cisco Catalyst 6500 Series Switches and Cisco 7600 Series Routers is a next-generation load-balancing and application-delivery solution. These products ensure application availability, accelerate application performance, and protect applications while reducing data center costs. Cisco ACE also defends servers and applications in data centers. The Cisco ACE Module performs deep packet inspection and blocks malicious attacks. Highly Scalable Integrated Security enables IT professionals to

comprehensively secure high-value applications in the data center and facilitates consolidation in the data center.

Key Features and Benefits

- Maximized application availability—Ensures end users can access network services in an efficient, reliable and consistent manor. Cisco ACE takes advantage of highly scalable Layer 4 load balancing and Layer 7 content switching to optimize the transmission of network services.
- Accelerated application performance—Cisco ACE uses patented technologies to accelerate and compress application data, improving application responsiveness. Offloading and caching Secure Sockets Layer (SSL), TCP, and Extensible Markup Language (XML) each help improve server performance.
- Comprehensive application security—The Cisco ACE protects against application threats and denial-of-service (DoS) attacks with features such as Deep Packet Inspection, network and protocol security, highly scalable access-control capabilities, and a powerful XML firewall.

Selected Part Numbers and Ordering Information

WS-C6509E-ACE20-K9	Cisco ACE20 6509 Bundle with 8 Gbps Throughput License (I/O module sold separately)
WS-C6504E-ACE20-K9	Cisco ACE20 6504 Bundle with 4 Gbps Throughput License (I/O module sold separately)
C6509E-ACE20-8-K9	Cisco ACE20 8G 6509E SUP720-10G Bundle
WS-C6509-E-ACE-K9	Cisco ACE10 6509 Bundle with 8 Gbps Throughput License (I/O module sold separately)
WS-C6504-E-ACE-K9	Cisco ACE10 6504 Bundle with 4 Gbps Throughput License (I/O module sold separately)
ACE20-MOD-K9	Cisco ACE20 Service Module for Cisco Catalyst 6500 Series and Cisco 7600 Series—Includes 1000 SSL TPS and 5 Virtual Devices
ACE10-6500-K9	Cisco ACE10 Service Module for Cisco Catalyst 6500 Series and Cisco 7600 Series, Includes 1000 SSL TPS and 5 Virtual Devices
ACE-16G-LIC	16Gbps Throughput License for Cisco ACE20
ACE-08G-LIC	8-Gbps Throughput License for Cisco ACE 10 and Cisco ACE20
ACE-04G-LIC	4-Gbps Throughput License for Cisco ACE10 and Cisco ACE20
ACE-VIRT-250	250 Virtual Contexts License for Cisco ACE10 and Cisco ACE20
ACE-VIRT-100	100 Virtual Contexts License for Cisco ACE10 and Cisco ACE20
ACE-VIRT-050	50 Virtual Contexts License for Cisco ACE10 and Cisco ACE20
ACE-VIRT-020	20 Virtual Contexts License for Cisco ACE10 and Cisco ACE20

For More Information

http://www.cisco.com/go/ace

Cisco ACE 4710 Appliance

The Cisco ACE 4710 supports multimedia load balancing for RTSP and SIP protocols, allowing customers to deploy a wider range of applications via the common application infrastructure. Services are delivered over a virtualized architecture to minimize power and cooling needs, as well as reduce provisioning time and capital expense. Cisco ACE 4710 Appliance provides application acceleration using patented flash forward, delta encoding, and compression technologies. It uses a full range of Cisco application switching technologies, including Layer 4 load balancing and Layer 7 content switching, server offload with SSL, caching, and TCP processing.   It reduces the volume of data transferred, thus enhancing the overall end-user experience.

Ideal for Companies That Need These Features

Cisco ACE 4710 Appliance
- Availability, acceleration, and security of data center applications
- Secure data center and critical business applications
- Data center consolidation through the use of fewer servers, load balancers, and firewalls

Selected Part Numbers and Ordering Information

ACE-4710-1F-K9	License Bundle: ACE 4710, 1 Gbps Throughput, 5,000 SSL TPS, 500 Mbps Compression, 5 Virtual Devices, Application Acceleration License, Embedded Device Manager
ACE-4710-2F-K9	License Bundle: ACE 4710, 2 Gbps Throughput, 7,500 SSL TPS, 1Gbps Compression, 5 Virtual Devices, Application Acceleration License, Embedded Device Manager
ACE-4710-4F-K9	License Bundle: ACE 4710, 4 Gbps Throughput, 7,500 SSL TPS, 2Gbps Compression, 5 Virtual Devices, Application Acceleration License, Embedded Device Manager
ACE-4710-0.5F-K9	One ACE 4710 Hardware, 0.5Gbps, 100 SSL, 100Mbps, Comp-5VC, 50 Application Acceleration

ACE-4710-BAS-2PAK	Two units of ACE 4710 Hardware, 1Gbps, 1K SSL, 100Mbps Comp, 5VC, 50 Application Acceleration
ACE-AP-01-LIC	1 Gbps License
ACE-AP-SW-3.2	Software Version 3.2

For More Information

http://www.cisco.com/go/ace

Cisco ACE Global Site Selector (GSS) 4400 Series

The Cisco ACE GSS (Global Site Selector) 4400 Series, along with Cisco ACE Modules, represents the next generation of application switches and Domain Name System (DNS) appliances. Together these devices form an application-fluent networking solution that maximizes availability, acceleration, and security for data center applications.

The Cisco GSS 4492R Global Site Selector is part of the Cisco ACE Application Control Engine product line and a crucial component of any data center architecture that requires an appliance-based, security-focused, universal global load balancer. Using a special protocol (Keepalive Application Protocol [KAL-AP]) facilitates the exchange of application load and availability between the Cisco ACE GSS 4492R and the Cisco ACE Application Control Engine Module. It is deployed on a Cisco ACE Application Control Engine Modules.

Key Features and Benefits

- Provides resilient architecture critical for disaster recovery and multisite web applications deployments.
- Optional software supports full Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) services, allowing the GSS to be deployed as a DNS appliance.
- Offers advanced traffic management for multisite Web application deployments.
- Offers innovative DNS-focused distributed denial-of-service (DDoS) protection software to mitigate the effects of DNS-based DDoS attacks.
- Provides a centralized command and control of DNS resolution process for direct and precise control of global load-balancing processes.
- Offers site persistence for e-commerce applications.
- Supports a web-based GUI, role-based access, and a DNS wizard to simplify the DNS command and control.

Specifications

Feature	Cisco ACE GSS (Global Site Selector) 4400 Series
Ports	Two 10/100/1000 Fast Ethernet autosensing, one console port
DNS requests per second	Up to 30,000, depending on configuration
Network Management	Console port-CLI; Access to system through Telnet; Secure copy (SCP) or FTP; GUI-Secure HTTP (HTTPS) for Internet Explorer and Netscape Navigator; Network management MIBs; Read-only monitoring of network and device status, including RFC 1213; (MIB-II) and RFC 1514 (HOST-RESOURCES-MIB)
Storage	One 80-GB hard drive; Software image SF-GSS-V1.3-K9; 2 GB RAM; Pentium CPU
Physical	One-rack unit size chassis; 1 GB RAM; Prescott 3.2-GHz CPU
Power	Integrated AC power (autosensing 110V/60Hz)

Selected Part Numbers and Ordering Information

GSS-4492R-K9	Cisco GSS 4492R Global Site Selector
SF-GSS-V3.1-K9	Cisco Global Site Selector Software 3.1
SF-GSS-DDOSLIC	DDoS Mitigation software license

For More Information

http://www.cisco.com/go/gss

Cisco Wide Area Application Services (WAAS)

Cisco Wide Area Application Services (WAAS) is a comprehensive WAN-optimization and application-acceleration solution that is a critical component of Cisco Borderless Networks and data center and virtualization architectures.

Cisco WAAS accelerates applications and data over the WAN, optimizes bandwidth, empowers cloud computing, and provides local hosting of branch-office IT services—all with industry-leading network integration. Cisco WAAS allows IT organizations to centralize applications and storage while maintaining productivity for branch-office and mobile users.

Key Features and Benefits

- Cisco WAAS mitigates WAN latency. Applications perform better. Data is transferred faster.
- Cisco WAAS reduces bandwidth consumption and its associated bandwidth costs.
- Cisco WAAS delivers increased business agility by enabling IT consolidation and enhanced application rollouts. Added flexibility is available with the Cisco Integrated Services Routers Generation 2 (ISR G2) and the Cisco Services Ready Engine (SRE), offering WAN optimization "on demand" as business needs arise.
- Cisco WAAS enhances business continuity by shrinking backup windows and achieving recovery-point objectives for storage administrators.
- Cisco WAAS offers superior end-user rich-media and collaborative application experiences across the WAN.

Cisco WAAS offers the most choices for WAN optimization with the broadest portfolio ranging from:

- Cisco WAAS offers software-based WAN-optimization solutions.
- Cisco WAAS software on Cisco Integrated Services Routers G2 (ISR G2) provides router-integrated on-demand WAN optimization for branch offices. The software can be integrated with first- and second-generation Cisco Integrated Services Routers (ISRs). The Cisco Services Ready Engine (SRE) on the ISR G2 platforms can deliver WAN optimization as an "on-demand" service.
- Cisco WAAS Mobile delivers bidirectional compression, application-specific accelerators, and flow optimizers for deployment on mobile and desktop platforms where neither an appliance nor a branch-office router is available or practical, or for public cloud environments that cannot support an appliance.
- Cisco WAAS software is generally bundled on Cisco Wide Area Application Engine (WAE) and Cisco Wide Area Virtualization Engine (WAVE) appliances and modules.
- The Cisco WAAS appliance portfolio supports WAN optimization with application acceleration, virtualization for local hosting of branch-office IT services, and bandwidth optimization for rich-media and TelePresence delivery across a wide range of deployment scenarios and price points.
- Cisco WAAS offers a proven end-to-end architectural approach with validated designs to lower cost of ownership and ease deployment challenges. Validated designs assist customers by incorporating IT infrastructure such as Cisco switches, routers, security devices, and servers.
- Cisco WAAS transparently integrates with Cisco routing and security solutions, with industry-leading application traffic transparency, resulting in fully preserved quality-of-service (QoS), voice-over-IP (VoIP), and firewall services. Cisco WAAS operates without tunnels, reducing complexity, protecting investments in applications and network tools, and minimizing operations costs.

For More Information

http://www.cisco.com/go/WAAS

Cisco Wide Area Application Services (WAAS) Mobile

Cisco Wide Area Application Services (WAAS) Mobile extends application-acceleration benefits to mobile workers. It addresses the unique challenges of mobile networks and offers a wide range of benefits:

- Because mobile workers experience a greater percentage of first-time traffic than branch-office users, Cisco WAAS Mobile applies aggressive application-acceleration techniques to deliver first-time download performance.
- Cisco WAAS Mobile optimizes cellular, satellite, Wi-Fi, WiMAX, and DSL networks to reduce timing variations, high latency, and noisy connections and increase link resiliency.
- Bidirectional history of data on both the mobile device and the Cisco WAAS Mobile server minimizes bandwidth consumption because history is shared across all protocols, across different VPN sessions, and even after a reboot.
- Application protocol optimizers reduce application round trips for file transfers, Microsoft Outlook, enterprise web applications, and web browsing.

Selected Part Numbers and Ordering Information

WAAS-MBL-SRV-SW	Cisco WAAS Mobile Server Software (Software Microsoft Windows Server hardware required)
WAAS-MBL-LIC25	Cisco WAAS Mobile 25 Concurrent User License
WAAS-MBL-LIC100	Cisco WAAS Mobile 100 Concurrent User License
WAAS-MBL-LIC500	Cisco WAAS Mobile 500 Concurrent User License

For More Information

http://www.cisco.com/en/products/ps6474/index.html

Cisco Wide Area Application Engine (WAE)

The Cisco Wide Area Application Engine (WAE) platforms are a portfolio of powerful, scalable network appliances that host Cisco WAN-optimization and application-acceleration solutions that enable branch-office server consolidation and

performance improvements for centralized applications and provide remote users with LAN-like access to applications, storage, and content across the WAN.

The Cisco WAE appliances provide a unified platform for hosting Cisco application-acceleration and WAN-optimization solutions, including Cisco Wide Area Application Services (WAAS) Software and Cisco Application and Content Networking System (ACNS) Software.

Cisco WAE Appliances Deployed with Cisco WAAS

Cisco WAAS is a powerful application-acceleration and WAN-optimization solution that accelerates the performance of any TCP-based application delivered across a WAN. Deployed as Cisco WAE appliances or as network modules integrated with the branch-office router, Cisco WAAS solves the following IT challenges:

- Overcoming poor application performance over the WAN
- Consolidating branch-office IT infrastructure into data centers while helping ensure near-LAN application performance over the WAN
- Controlling continuous growth in bandwidth requirements
- Improving data protection, backup, and replication for remote offices and between data centers

Key Features and Benefits

By accelerating the performance of any TCP-based application over the WAN, Cisco WAAS offers the following benefits:

- Cost savings through consolidation of branch-office infrastructure in data centers
- Increased employee productivity by providing near-LAN performance for all enterprise applications
- Improved data protection and regulatory compliance by eliminating the need for less-secure tape-based backup at remote offices

In addition to the benefits of WAN optimization described previously, Cisco WAAS provides the lowest total-cost-of-ownership (TCO) solution, transparently preserves all existing network services, helps ensure reliable voice deployments, and innovatively interoperates with Cisco firewalls to secure accelerated traffic. For detailed information about Cisco WAAS, please visit http://www.cisco.com/go/waas.

Selected Part Numbers

WAE-674-K9	· 4 or 8 GB RAM · 600 GB storage · Redundant, hot-swappable power supplies as an upgrade option · Hot-swappable HDD replacement supported with Cisco WAAS
WAE-7341-K9	· 12 GB RAM · 900 GB Storage · Redundant, hot-swappable power supplies · Hot-swappable HDD replacement supported with Cisco WAAS
WAE-7371-K9	· 24 GB RAM · 1.5 terabytes (TB) storage · Redundant, hot-swappable power supplies · Hot-swappable HDD replacement supported with Cisco WAAS

For More Information

http://www.cisco.com/go/wae

Cisco Wide Area Virtualization Engine (WAVE)

The Cisco Wide Area Virtualization Engine (WAVE) is a branch-office appliance that provides WAN optimization, embedded virtualization for local hosting, and branch-office video delivery. It allows IT organizations to centralize applications and storage in the data center while maintaining LAN-like application performance and delivering local branch-office IT services.

Cisco WAVE appliances are designed to enable local hosting of branch-office IT services using a network-embedded virtualization architecture. This architecture maintains native performance for WAN optimization while using the same hardware platform for additional hosted services and reducing the branch-office device footprint.

Key Features and Benefits

- Improves employee productivity by enhancing the user experience for important business applications delivered over the WAN.
- Reduces the cost of branch-office operations by centralizing IT resources in the data center and lowering the cost of WAN bandwidth.
- Increases IT agility by reducing the time and resources required to deliver new IT services to the branch office.
- Simplifies branch-office data protection for regulatory compliance purposes.

Selected Part Numbers and Ordering Information

WAVE-274-K9	Cisco WAVE-274 with chassis with 3 GB SDRAM. 250-GB hard disk drive (HDD), 2-port inline module, and AC power supply; Cisco WAAS Enterprise license included
WAVE-474-K9	Fixed hardware SKU with 1 X 250GB HDD, 3GB DRAM, 2-port inline card and Cisco WAAS Enterprise License included
WAVE-574-K9	Cisco WAVE-574 with chassis with 3 GB SDRAM. 500-GB HDD, and AC power supply; Cisco WAAS Enterprise license included

For More Information
http://www.cisco.com/go/WAAS

Cisco Application and Content Networking System (ACNS) Software

The Cisco Application and Content Networking System (ACNS) is a powerful digital media delivery solution that greatly reduces redundant digital media streaming traffic traversing a WAN from the data center to branch offices over satellite and terrestrial networks. With Cisco ACNS, organizations can deliver effective and large-scale corporate communications, on-demand training, and digital signage to remote branch offices, schools, and stores, with high-quality and minimal effect on the network, while taking advantage of investments in converged IP WANs. Cisco ACNS combines the technologies of transparent on-demand caching, scheduled prepositioning, and live digital broadcasting to minimize the effect over the WAN.

Key Features and Benefits

- Cisco ACNS provides live broadcasts and video on demand (VoD). Stream splitting at the edge delivers streams to hundreds of user desktops or TV displays.
- Cisco ACNS integrates with the Cisco Digital Media System (DMS).
- Cisco ACNS offers unicast and IP Multicast delivery. It delivers only one unicast video stream per digital media streaming source.
- Cisco ACNS offers continuous and transparent media content distribution with policy-based bandwidth throttling.
- Cisco ACNS has a multilayer hierarchy for high scalability and redundancy across the delivery path to thousands of user desktops, digital signs, kiosks, and so on.
- Cisco ACNS supports multi video formats, including Microsoft Windows Media, Real, Flash, H.264, and QuickTime.

Selected Part Numbers and Ordering Information

SF-ACNS-5.5-SA-K9	Cisco ACNS Software v.5.5 (SATA)
SF-ACNS-5.5-SC-K9	Cisco ACNS Software v.5.5 (SCSI)
SF-ACNS-5.5-SS-K9	Cisco ACNS Software v.5.5 (SAS)

For More Information

http://www.cisco.com/go/acns

Cisco Nexus 7000 Series Switches

The Cisco Nexus 7000 Series Switches are the first switches designed specifically to meet data center-class requirements. Built to meet the most mission-critical data center requirements, it delivers continuous system operation and virtualized, pervasive services. The Cisco Nexus 7000 Series is a modular line of switches designed for highly scalable end-to-end 10-Gigabit Ethernet data center networks. It features a fabric architecture that scales beyond 15 terabits per second (Tbps), with future support for 40 and 100 Gigabit Ethernet.

The Cisco Nexus 7000 Series is based on a proven operating system (Cisco NX-OS), with enhanced features to deliver real-time system upgrades with exceptional manageability and serviceability. Its innovative design is built to support end-to-end data center connectivity, consolidating IP, storage, and Interprocess-communication (IPC) networks on a single Ethernet fabric.

Ideal for Companies That Need These Features

Cisco Nexus 7000 Series
- Infrastructure scalability
- Optimized CPU resources
- Scalable security with link-layer encryption, security-group access control lists, and role-based access control
- Operational continuity for lossless, nondisruptive upgrades and zero service downtime
- A connectivity management processor (CMP) to provide integrated out-of-band management access
- Transport flexibility
- Virtualized control-plane and data-plane forwarding results in optimized performance
- Virtual device contexts (VDCs) to maximize software and hardware resource usage while providing strong security and software fault isolation

Key Features and Benefits

- The Cisco Nexus 7000 supports up to two hundred fifty-six 10-Gigabit Ethernet or three hundred eighty-four 10/100/1000 Ethernet ports in a single 10-slot chassis.
- The Cisco Nexus 7000 has a fully modular and fully redundant 10-slot chassis with front-to-back airflow and integrated cable management.
- Dual dedicated supervisor modules provide exceptional high-availability features with no service interruptions, even during hardware and software upgrades.
- A highly scalable fabric architecture supports up to five fabric modules for load-balanced, fault-tolerant operation; the switch is designed to deliver 230 Gbps per slot of bandwidth at release, with future support for more than 500 Gbps per slot.
- The switch provides virtual output queuing and fabric arbitration, delivers quality of service (QoS) and fairness across all ports, even during congestion, and provides the basis for future unified I/O.
- The switch offers integrated security hardware support for Cisco TrustSec, providing data confidentiality while simplifying and scaling access control.
- The switch has fully distributed forwarding engines, providing scalable packet processing and forwarding.
- Three load-sharing power supply modules allow either 110- or 220-VAC inputs. With 220-VAC inputs these power supplies will deliver fault tolerance for a fully loaded chassis with worst-case N+1 and grid redundancy.

Selected Part Numbers and Ordering Information

N7K-C7010	Cisco Nexus 7000 Series 10 Slot Chassis-includes cable management and fans, does not include Power Supplies
N7K-C7010-FAB-1	Cisco Nexus 7000 10 Slot Fabric Module-46Gbps per slot
N7K-C7018	Cisco Nexus 7000 Series 18-Slot chassis including fan trays, no power supply
N7K-SUP1	Cisco Nexus 7000 Series Supervisor Module-includes external 8GB Log Flash, does not include optional external 2GB Expansion Flash
N7K-LAN1K9	Cisco Nexus 7000 LAN Enterprise License (L3 protocols)
N7K-M132XP-12	Cisco Nexus 7000 Series 32 Port 10Gb Ethernet Module (requires SFP+ Optic Modules)
N7K-M148GT-11	Cisco Nexus 7000 Series 48 Port 10/100/1000 Ethernet Module
N7K-M148GS-11	Cisco Nexus 7000 Series 48 Port 1 Gigabyte SFP

For More Information

http://www.cisco.com/go/nexus

Cisco Nexus 5000 Series Switches

The Cisco Nexus 5000 Series is a family of line-rate, low-latency, lossless 10 Gigabit Ethernet, Cisco Data Center Ethernet, and Fibre Channel over Ethernet (FCoE) switches for data center applications. With low latency, front-to-back cooling, and rear-facing ports, the Cisco Nexus 5000 Series is designed for data centers transitioning to 10 Gigabit Ethernet as well as for those ready to deploy a unified fabric that can handle their LAN, SAN and server cluster, networking all over a single link (or dual links for redundancy).

Key Features and Benefits

- High-performance, low-latency 10 Gigabit Ethernet, delivered by a cut-through switching architecture, for 10 Gigabit Ethernet server access in next-generation data centers
- Cisco Data Center Ethernet, a main component of Cisco Data Center 3.0 architecture, with features, including Layer 2 multipathing, which increases scalability in the data center
- Unified fabric with Fibre Channel over Ethernet (FCoE) for I/O consolidation, reducing power and cabling requirements and simplifying data center networks especially for SAN consolidation Fibre Channel

- Virtual machine optimized services for higher asset utilization, simplified server connections, rapid server provisioning, security, and quality of service (QoS)

Selected Part Numbers and Ordering Information

N5K-C5010P-BF	Cisco Nexus 5000 1RU Chassis no PS, 2 Fan Modules, 20 ports (req SFP+)
N5K-C5020P-BF	Cisco Nexus 5000 2RU Chassis no PS, 5 Fan Modules, 40 ports (req SFP+)
N5K-C5020P-BFS	Cisco Nexus 5020 2RU Chassis, Storage Enabled
N5K-M1600(=)	Cisco Nexus 5000 1000 Series Module 6-port 10 GE (req SFP+)
N5K-M1-BLNK(=)	Cisco Nexus 5000 1000 Series Expansion Module Blank

For More Information
http://www.cisco.com/go/nexus

Cisco Nexus 4000 Series Switches

The Cisco Nexus 4001I Switch Module for IBM BladeCenter is a blade-switch solution for the IBM BladeCenter H and HT chassis providing the server I/O solution. It is a line-rate, low-latency, nonblocking, Layer 2, 10-Gigabit Ethernet blade switch. At the core of the Cisco Nexus 4001I is the unified switch application-specific integrated circuit (ASIC), a new, high-performance, line-rate switch ASIC that delivers extremely low and consistent latency across all packet sizes independent of the configured networking features. This design supports standard Ethernet as well as Priority Flow Control (PFC) and Enhanced Transmission Selection (ETS), required for lossless Ethernet transmission. LAN and storage-area-network (SAN) networking protocols are delivered through Cisco NX-OS Software, a modular, fault-tolerant, highly available operating system designed specifically to support unified fabric data center networks.

Key Features and Benefits
- Fourteen fixed 10-Gigabit Ethernet server-facing downlinks (autosensing ports; can also operate in Gigabit Ethernet mode)
- Six fixed 10-Gigabit Ethernet Small Form-Factor Pluggable Plus (SFP+) uplinks (autosensing ports; can also operate in Gigabit Ethernet mode)
- Three management interfaces: One external 10/100/1000BASE-T port (mgmt 0), one internal port for advanced-management-module (AMM) connectivity (mgmt 1), and one in-band management interface using the interface-vlan feature
- One RS-232 serial console port

Selected Part Numbers and Ordering Information

N4K-4001I-XPX	Cisco Nexus 4001I Switch Module chassis for IBM Blade Center
N4K-4001I-SSK9	Cisco Nexus 4001I Storage Protocol Services Software License

For More Information
http://www.cisco.com/go/nexus4000

Cisco Nexus 2000 Series Fabric Extenders

The Cisco Nexus 2000 Series Fabric Extender (FEX) is a category of data center products that provide a universal server-access platform that scales across a range of Gigabit Ethernet, 10 Gigabit Ethernet, unified fabric, rack, and blade-server environments. It is designed to simplify data center architecture and operations.

The Cisco Nexus 2248TP provides 48 Fast Ethernet and Gb Ethernet (100/1000BASE-T) server ports and four 10 Gb Ethernet uplink ports in a compact 1 rack unit (1RU) form factor.

The Cisco Nexus 2232PP 10G provides 32 10 Gb Ethernet and Fibre Channel Over Ethernet (FCoE) Small Form-Factor Pluggable Plus (SFP+) server ports and eight 10 Gb Ethernet and FCoE SFP+ uplink ports in a compact 1 rack unit (1RU) form factor

The Cisco Nexus 2148T provides 48 Gigabit Ethernet server ports and four 10 Gigabit Ethernet uplink ports in a compact one rack unit (1RU) form factor.

Working in conjunction with Cisco Nexus 5000 Switches, the Cisco Nexus 2000 Fabric Extender delivers a cost-effective and highly scalable way to support Gb Ethernet environments while facilitating migration to 10 Gb Ethernet, virtual machine-aware, and unified fabric technologies.

Selected Part Numbers and Ordering Information

N2K-C2148T-1GE	Cisco Nexus 2000 Series 1GE Fabric Extender, 1PS, 1 Fan Module, 48x1G-BaseT + 4x10GE (req SFP+)
N2K-C2248TP-1GE	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 48x100/1000-BaseT + 4x10GE (req SFP+)
N2K-C2248TF-1GE	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 48x100/1000-BaseT + 4x10GE (includes 8 Fabric Extender Transceivers for N5K-to-N2K interconnect)
N2K-C2232PP-10GE	Cisco Nexus 2000 Series 10GE Fabric Extender, 2PS, 1 Fan Module, 32x10GE (req SFP+) + 8x10GE (req SFP+)
N2K-C2232PF-10GE	Cisco Nexus 2000 Series 10GE Fabric Extender, 2PS, 1 Fan Module, 32x10GE (req SFP+) + 8x10GE (includes 16 Fabric Extender Transceivers for N5K-to-N2K interconnect)

For More Information
http://www.cisco.com/go/nexus

Cisco Nexus 1000V Series Switches

The Cisco Nexus 1000V virtual machine access switch is an intelligent software switch implementation for VMware ESX environments. Running inside of the VMware ESX hypervisor, the Cisco Nexus 1000V supports Cisco VN-Link server virtualization technology, providing:

- Policy-based virtual machine (VM) connectivity
- Mobile VM security and network policy
- Non-disruptive operational model for your server virtualization, and networking teams

With the Cisco Nexus 1000V Series Switches, you can have a consistent networking feature set and provisioning process all the way from the virtual machine (VM) to the access, aggregation, and core switches. Your virtual servers can use the same network configuration, security policy, tools, and operational models as physical servers. Virtualization administrators can leverage predefined network policy that follows the nomadic VM and focus on virtual machine administration. This comprehensive set of capabilities helps you to deploy server virtualization faster and realize its benefits sooner.

The Cisco Nexus 1000V switch has two major components: the Virtual Ethernet Module (VEM) that executes inside the hypervisor, and the external Virtual Supervisor Module (VSM) that manages the VEMs.

Selected Part Numbers and Ordering Information

L-N1K-VLCPU-01	Nexus 1000V eDelivery CPU license Qty 1
L-N1K-VLCPU-04=	Nexus 1000V eDelivery CPU license Qty 4
L-N1K-VLCPU-16=	Nexus 1000V eDelivery CPU license Qty 16
N1K-VLCPU-16=	Nexus 1000V Paper CPU License Qty 16
L-N1K-VLCPU-32=	Nexus 1000V eDelivery CPU license Qty 32
N1K-VLEM-UCS-1	Nexus 1000V license PAK for 1 virtual Ethernet module on UCS

Note: Cisco Nexus 1000v software and licenses can also be ordered directly from your VMware reseller.

For More Information
http://www.cisco.com/go/nexus

Cisco Unified Computing System

The Cisco Unified Computing System is a next-generation data center platform that unites compute, network, storage access, and virtualization into a cohesive system designed to reduce Total Cost of Ownership (TCO) and increase business agility. The system integrates a low-latency, lossless 10GE unified network fabric with enterprise-class, x86-architecture servers. The system is an integrated, scalable, multichassis platform in which all resources participate in a unified management domain.

The UCS is managed as a single system whether it has 1 server or 320 servers with thousands of virtual machines, this approach decouples scale from complexity. The Cisco Unified Computing System accelerates the delivery of new services simply, reliably, and securely through end-to-end provisioning and migration support for both virtualized and non-virtualized systems.

The Cisco Unified Computing System is designed to deliver:

- Reduced total cost of ownership (TCO) at the platform, site, and organizational levels
- Increased IT staff productivity and business agility through just-in-time provisioning and mobility support for both virtualized and non-virtualized environments

- A seamless integrated system that is managed, serviced, and tested as a whole
- Scalability through a design for up to 320 discrete servers and thousands of virtual machines, and the ability to scale I/O bandwidth to match demand
- Industry standards supported by a partner ecosystem of industry leaders

Cisco UCS Product Family of Products

The Cisco Unified Computing System is built from the following components:

- Cisco UCS 6100 Series Fabric Interconnects is a family of line-rate, low-latency, lossless, 10-Gbps Cisco Data Center Ethernet and FCoE interconnect switches that consolidate I/O within the system. Both 20-port 1RU and 40-port 2RU versions accommodate expansion modules that provide Fibre Channel and/or 10 Gigabit Ethernet connectivity.
- Cisco UCS 5100 Series Blade Server Chassis supports up to eight blade servers and up to two fabric extenders in a 6RU enclosure without the need for additional management modules.
- Cisco UCS 2100 Series Fabric Extenders bring unified fabric into the blade-server chassis, providing up to four 10-Gbps connections each between blade servers and the fabric interconnect, simplifying diagnostics, cabling, and management.
- Cisco UCS C-Series Rack-Mount Servers offer a rack mount form factor. Cisco C-Series Servers may also be deployed as stand-alone computing devices in traditional environments while providing a variety of innovative features. C-Series Servers provide IT with increased flexibility and confidence to take advantage of Cisco's Unified Computing architecture.
- Cisco UCS Network Adapters are offered in a mezzanine-card form factor. Three types of adapters offer a range of options to meet application requirements, including adapters optimized for virtualization, compatibility with existing driver stacks, or efficient, high-performance Ethernet.

Key Features and Benefits

- Reduced total cost of ownership at the platform, site, and organizational levels
- Increased IT staff productivity and business agility through just-in-time provisioning and mobility support for both virtualized and non-virtualized environments
- Enable scalability through a design for up to 320 discrete servers and thousands of virtual machines in a single highly available management domain
- Industry standards supported by a partner ecosystem of innovative, trusted industry leaders

Selected Part Numbers and Ordering Information

N10-S6100	Cisco Unified Computing System 6120XP 20-port Fabric Interconnect/0 PSU/2 fans/no SFP+
N10-S6200	Cisco Unified Computing System 6140XP 40-port Fabric Interconnect/0 PSU/5 fans/no SFP+
N20-C6508	Cisco Unified Computing System 5108 Blade Server Chassis/0 PSU/8 fans/0 fabric extender
N20-X00001	CPU Kits—2.93GHz Xeon X5570 95W CPU/8MB cache/DDR3 1333MHz (NOTE: other options include 2.53GHz, 2.26GHz, and 2.26GHz Xeon configurable CPU selections)
N01-M302GB1	Memory Kits—2GB DDR3-1333MHz RDIMM/PC3-10600/single rank 1Gb DRAMs (NOTE 4GB & 8GB memory options are available during configuration)
N20-AI0002	Mezzanine Cards—UCS 82598KR-CI 10-Gigabit Ethernet Adapter/PCIe/2-port 10Gb (NOTE Emulex, QLogic, and Virtual interface card options are available during configuration)
N20-D073GB	Hard Drive Options—73GB SAS 15K RPM SFF HDD/hot plug/B-series drive sled (NOTE 146GB option available during configuration)
Operation systems	UCS blade servers can be preconfigured with Red Hat, Novell, Microsoft, or Vmware operating systems

For More Information

http://www.cisco.com/go/ucs

Cisco UCS B-Series Blade Servers

The Cisco UCS B-Series Blade Servers are designed to increase performance, energy efficiency, and flexibility for demanding virtualized and nonvirtualized computing environments. Each Cisco UCS B-Series Blade Server incorporates converged network adapters (CNAs) for access to the unified fabric. This design reduces the number of adapters, cables, and access layer switches while still allowing traditional LAN and storage-area-network (SAN) connectivity. This Cisco innovation reduces capital expenditures (CapEx) and operating expenses (OpEx), including administrative overhead and power and cooling costs.

The Cisco UCS B-Series models featuring 2-socket designs help maximize performance, energy efficiency, and flexibility for demanding virtualized and nonvirtualized applications. These 2-socket blade servers are based on Intel Xeon 5500 and Xeon 5600 Series processors.

- The Cisco UCS B200 M1 and UCS B200 M2 Blade Servers balance simplicity, performance, and density for production-level virtualization and other mainstream data center workloads.
- The Cisco UCS B250 M1 and UCS B250 M2 Extended Memory Blade Servers maximize performance and capacity for demanding virtualization and large-dataset workloads with up to 384 GB of industry-standard memory. They also offer a more cost-effective memory footprint for less-demanding workloads.

The Cisco UCS B-Series 4-socket servers extend the agility and cost benefits of unified computing to a wider range of workloads.

- The Cisco UCS B440 M1 Blade Server is powered by the scalable performance and reliability features of up to four Intel Xeon 7500 Series processors, and it easily handles compute-intensive, enterprise-critical applications.

Key Features and Benefits

- Autodiscovery—Automatic recognition and configuration of blades by Cisco UCS Manager
- Remote management through an integrated service processor that also executes policy established in Cisco UCS Manager software
- Service profile support—Embedded integration with Cisco UCS Manager for all infrastructure policies required to deploy applications and provision servers
- Keyboard, video, and mouse (KVM) access either locally through the front of each server or remotely by Cisco UCS Manager
- Out-of-band access by remote KVM, Secure Shell (SSH) Protocol, Serial over LAN, and virtual media (vMedia) as well as the Intelligent Platform Management Interface (IPMI)

Selected Part Numbers and Ordering Information

N20-B6740-2	Cisco UCS B440 M1 Blade Server w/o CPU, memory, HDD, mezzanine
N20-B6625-2	Cisco UCS B250 M2 Blade Server
N20-B6620-2	Cisco UCS B250 M1 Blade Server w/o CPU, memory, HDD, mezzanine
N20-B6625-1	Cisco UCS B200 M2 Blade Server
N20-B6620-1	Cisco UCS B200 M1 Blade Server w/o CPU, memory, HDD, mezzanine.

For More Information

http://www.cisco.com/go/ucs

Cisco UCS C-Series Rack-Mount Servers

The Cisco UCS C-Series Rack-Mount Servers extend the capabilities of the Cisco Unified Computing System, using Intel's latest Xeon 5600 Series multicore processors to deliver even better performance and efficiency. Each product in the series is designed to address varying workload challenges through a balance of processing, memory, I/O, and internal storage resources. The series includes the following models:

- The Cisco UCS C200 server is a high-density, 2-socket, 1-rack unit (1RU) rack-mount server. It is built for production-level network infrastructure, web services, and mainstream data centers; and branch- and remote-office applications.
- The Cisco UCS C210 server is a general-purpose, 2-socket, 2RU rack-mount server designed to balance performance, density, and efficiency for storage-intensive workloads. This server is built for applications such as network file and appliances, storage, database, and content delivery.
- The Cisco UCS C250 server is a high-performance, memory-intensive, 2-socket, 2RU rack-mount server designed to increase performance, and it has the capacity for demanding virtualization and large-dataset workloads. The server also can reduce the cost of smaller memory footprints.

The Cisco UCS C460 is a 4-socket, 4RU rack-mount server for compute-intensive, enterprise-critical standalone applications and virtualized workloads.

Key Features and Benefits

- Offers industry-standard double-data-rate-3 (DDR3) memory
- Has a front-panel connection for physical keyboard, video, and mouse (KVM), USB devices, and serial console
- Offers serial and network access to the Cisco UCS Integrated Management Controller
- Offers agent and agentless management with third-party tools through in-band, data-plane connections
- Provides Serial Advanced Technology Attachment (SATA) or Single Attachment Station (SAS) disk-drive types
- Helps reduce total cost of ownership (TCO) and increase business agility
- Balances simplicity, performance, and density for production-level virtualization, web infrastructure, and data center workloads
- Extends unified computing innovations and benefits to rack-mounted servers
- Houses up to 16 internal disk drives for up to 8 terabytes of storage

Selected Part Numbers and Ordering Information

R460-4640810	Cisco UCS C460 M1 Rack Server with DVD-RW and 1 PSU. CPUs, memory, HDD, PCIe cards, Rail Kit and Redundant PSU must be ordered below.
R250-2480805	Cisco UCS C250 M1 Rack Server with DVD-RW and 1 PSU. CPUs, memory, HDD, PCIe cards, Rail Kit and Redundant PSU must be ordered below.

R250-2480805W	Cisco UCS C250 M2 Rack Server with DVD-RW and 1 PSU
R210-2121605W	Cisco UCS C210 M2 Rack Server with 1 Power Supply
R210-2121605	Cisco UCS C210 M1 Rack Server with 1 Power Supply. CPUs, memory, HDD, PCIe cards, Rail Kit and Redundant PSU must be ordered below.
R200-1120402W	Cisco UCS C200 M2 Rack Server with DVD-RW and 1 Power Supply
R200-1120402	Cisco UCS C200 M1 Rack Server with DVD-RW and 1 Power Supply. CPUs, memory, HDD, PCIe cards, Rail Kit and Redundant PSU must be ordered below.

For More Information

http://www.cisco.com/go/ucs

Cisco MDS 9500 Series Multilayer Directors

The Cisco MDS 9500 Series Multilayer Directors provide industry-leading availability, scalability, security, and management. The Cisco MDS 9500 Series allows businesses to deploy the highest-performance storage area networks (SANs), with the lowest total cost of ownership (TCO) in the industry. Layering a rich set of intelligent features onto a high-performance, protocol-independent switch fabric, the Cisco MDS 9500 Series addresses the stringent requirements of large data center storage environments.

Available in 6-, 9-, and 13-slot configurations, the Cisco MDS 9500 Series supports 1-, 2-, 4-, 8-, and 10-Gbps Fibre Channel port speeds, up to 528 1-, 2-, 4-, and 8-Gbps autosensing Fibre Channel ports in a single chassis, and up to 1584 Fibre Channel ports per rack.

Cisco MDS 9500 Series Multilayer Directors are also ready for integration of future high-speed standards, helping ensure continued investment protection. The Cisco NX-OS is included at no charge with every Cisco MDS 9000 Multilayer SAN Switch, and is the underlying system software that powers the MDS solution.

The portfolio includes:

· Cisco MDS 9513 Multilayer Director
· Cisco MDS 9509 Multilayer Director
· Cisco MDS 9506 Multilayer Director

Cisco MDS 9513 Multilayer Director

The Cisco MDS 9513 Multilayer Director addresses the stringent requirements of large data center storage environments: uncompromising high availability, security, scalability, ease of management, and transparent integration of new technologies for extremely flexible data center SAN solutions. Compatible with first-, second-, and third-generation Cisco MDS 9000 switching modules, the Cisco MDS 9513 provides advanced functions and outstanding investment protection, allowing the use of any Cisco MDS 9000 Family switching module in this highly scalable system.

The Cisco MDS 9513 supports modular, multilayer, multiprotocol, highly available, dual Cisco MDS 9513 Supervisor 2 modules and 11 module slots (14 rack units [14RU]):

· Supports maximum of 24 10-Gbps Fibre Channel ports per chassis
· Supports maximum of 60 Small Computer System Interface over IP (iSCSI) and Fibre Channel over IP (FCIP) ports per chassis
· Supports maximum of 528 1-, 2-, or 4-Gbps Fibre Channel ports per chassis
· Offers 13 available slots
· Supports 8-Gbps Fibre Channel: 24-, 48-, and 4/44-port 8-Gbps Fibre Channel switching modules
· Supports 4-Gbps Fibre Channel: 12-, 24-, and 48-port 4-Gbps Fibre Channel switching modules
· Supports IP and storage services: 18/44-port multiservice modules and 16-port storage services node
· Supports 10-Gbps Fibre Channel: 4-port 10-Gbps Fibre Channel switching module

Cisco MDS 9509 Multilayer Director

The Cisco MDS 9509 supports up to 336 ports of 1-, 2-, 4-, and 10-Gbps Fibre Channel connectivity, and is a powerful director-class SAN switch offering industry-leading availability, scalability, and security. The Cisco MDS 9509 Multilayer Director comes with two redundant Cisco MDS 9500 Supervisor 2 modules preinstalled, and layers a rich set of intelligent features onto a high-performance, protocol-independent switch fabric to meet the needs of large data center storage environments:

· Maximum of 336 1-, 2-, or 4-Gbps Fibre Channel ports per chassis
· Maximum of 28 10-Gbps Fibre Channel ports per chassis
· Maximum of 48 iSCSI and FCIP ports per chassis
· Nine available slots
· 1-, 2-, and 4-, and 10-Gbps Fibre Channel switching
· Advanced management tools for overall lowest TCO
· Backward-compatible for investment protection
· Unified SAN management

Cisco MDS 9506 Multilayer Director

The Cisco MDS 9509 Multilayer Director supports up to 336 ports of 1-, 2-, 4-, and 10-Gbps Fibre Channel connectivity, and is a powerful director-class SAN switch offering industry-leading availability, scalability, and

security. The Cisco MDS 9509 Multilayer Director comes with two redundant Cisco MDS 9500 Supervisor 2 modules preinstalled, and layers a rich set of intelligent features onto a high-performance, protocol-independent switch fabric to meet the needs of large data center storage environments:

- Maximum of 192 1-, 2-, or 4-Gbps Fibre Channel ports per chassis
- Maximum of 16 10-Gbps Fibre Channel ports per chassis
- Maximum of 24 iSCSI and FCIP ports per chassis
- Six available slots
- 1-, 2-, and 4- and 10-Gbps Fibre Channel switching
- Advanced management tools for overall lowest TCO
- Backward-compatible for investment protection
- Unified SAN management

Selected Part Numbers and Ordering Information

Cisco MDS 9500 Base Configuration	
DS-C9506	Cisco MDS 9506 Chassis
DS-C9506-2K9	Cisco MDS 9506 Base Configuration; Chassis, 2-Sup-2.2, 1.9K AC power supply
DS-C9509	Cisco MDS 9509 Chassis
DS-C9509-2K9	Cisco MDS 9509 Base Configuration; Chassis, 2-Sup-2.2, 3K AC power supply
DS-C9513	Cisco MDS 9513 Chassis
DS-C9513-K9	Cisco MDS 9513 Base Configuration; Chassis, 2-Sup-2.2 Fabric, 2 6K AC power supply
DS-X9530-SF2-K9	Cisco MDS 9500 Supervisor/Fabric 2
Cisco MDS 9000 Modules	
DS-X9032-SSM	Cisco MDS 9000 Storage Services Module
DS-X9112	Cisco MDS 9000 12-port 1/2/4-Gbps FC Module
DS-X9124	Cisco MDS 9000 24-port 1/2/4-Gbps FC Module
DS-X9148	Cisco MDS 9000 48-port 1/2/4-Gbps FC Module
DS-X9248-48K9	4/44-Port Host-Optimized 8-Gbps FC Module
DS-X9248-96K9	48-Port 8-Gbps Fibre Channel Switching Module
DS-X9224-96K9	24-Port 8-Gbps Fibre Channel Switching Module
DS-X9304-18K9	Cisco MDS 9000 4-port GE and 18-port FC Module
DS-X9304-18FK9	Cisco MDS 9000 4-port GE and 18-port FC FIPS Module
DS-X9308-SMIP	Cisco MDS 9000 8-port 1 GE IP Storage Services Module
DS-SFP-FC-2G-SW	1/2-Gbps Fibre Channel-SW SFP, LC
DS-SFP-FC-2G-LW	1/2-Gbps Fibre Channel-LW SFP, LC
DS-SFP-FC4G-SW	1/2/4-Gbps Fibre Channel-Shortwave SFP, LC
DS-SFP-FC4G-MR	1/2/4-Gbps Fibre Channel-Longwave SFP, LC (4km reach)
DS-SFP-FC4G-LW	1/2/4-Gbps Fibre Channel-Longwave SFP, LC (10km reach)
DS-SFP-FCGE-SW	1-Gbps Ethernet and 2-Gbps Fibre Channel-SW, SFP, LC
DS-SFP-FCGE-LW	1-Gbps Ethernet and 2-Gbps Fibre Channel-LW, SFP, LC
DS-X2-FC10G-SR	10-Gbps Fibre Channel-Shortwave, SC
DS-X2-FC10G-LW	10-Gbps Fibre Channel-Longwave, SC
DS-SFP-GE-T	Gigabit Ethernet Copper, SFP, RJ-45
Cisco MDS 9500 Memory Options	
MEM-MDS-FLD512M=	Cisco MDS 9500 Sup Compact Flash Disk, 512 MB, Spare
Cisco MDS 9200 Base Configuration	
DS-C9222i-K9	Cisco MDS 9222i 18-port FC and 4-port GE + 1-slot Modular Switch
Cisco MDS 9100	
DS-C9124-K9	Cisco MDS 9124 8-port base

DS-C9134-K9	Cisco MDS 9134 16-port base
DS-C9134-1K9	Cisco MDS 9134 32-port base
DS-C9134-8-K9	Cisco MDS 9134 with 32 FC ports enabled
DS-2C9134-K9	2x Cisco MDS 9134s stacked as a bundle via copper CX4 with 48-port enabled
DS-2C9134-1K9	2x Cisco MDS 9134s stacked as a bundle via copper CX4 with 64-port enabled

For More Information

http://www.cisco.com/go/storagenetworking

Cisco MDS 9200 Series Multilayer Switches

The Cisco MDS 9222i Multiservice Modular Switch delivers high-performance storage-area-network (SAN) extension solutions, distributed intelligent fabric services, and cost-effective multiprotocol connectivity for both open and mainframe environments. Its compact form factor and modularity make it ideal for departmental and remote branch-office SANs. It enables virtual fabric isolation with virtual SANs (VSANs), Fibre Channel routing with Inter-VSAN Routing (IVR), and high availability with In Service Software Upgrade (ISSU), stateful process restart, and PortChannels. The Cisco MDS 9222i provides for cost optimization through Small Computer System Interface over IP (iSCSI) connectivity to Ethernet-attached servers.

Sharing a consistent architecture with the Cisco MDS 9500 Series and powered by Cisco MDS 9000 NX-OS Software, the Cisco MDS 9222i offers 18 4-Gbps Fibre Channel ports and 4 Gigabit Ethernet IP storage services ports, and an expansion slot to host Cisco MDS 9000 Family switching and services modules—allowing it to scale up to a 66-port Fibre Channel switch with the Cisco MDS 9000 Family 48-port 4-Gbps Fibre Channel Switching Module or to host and accelerate storage applications such as network-hosted volume management, network-assisted data protection, data migration, and backup with the Cisco MDS 9000 Family 32-port Storage Services Module. The Cisco MDS 9222i is also capable of high-density connectivity through 8-Gbps Fibre Channel ports—the Cisco MDS 9222i also supports the 4/44-port 8-Gbps host-optimized Fibre Channel switching module. The switch:

· Scales up to 66 Fibre Channel ports
· Offers 18 4-Gbps Fibre Channel interfaces for high-performance SAN connectivity
· Offers 4 Gigabit Ethernet IP storage services ports
· Supports iSCSI, Fibre Channel, and Fiber Connection (FICON)

For More Information

http://www.cisco.com/go/mds

Cisco MDS 9100 Series Multilayer Fabric Switches

The Cisco MDS 9100 Series Multilayer Fabric Switches are cost-effective, scalable, easy-to-install, and highly configurable Fibre Channel switches that are ideal for small to medium-sized businesses. The fabric switches are also available as blade-switch form factors for market-leading blade servers, including IBM and HP blade servers.

The Cisco 9100 Series portfolio includes:

· Cisco MDS 9148 Multilayer Fabric Switch
· Cisco MDS 9134 Multilayer Fabric Switch
· Cisco MDS 9124 Multilayer Fabric Switch

Cisco MDS 9148 Multilayer Fabric Switch

The Cisco MDS 9148 Multilayer Fabric Switch is a high-performance, flexible, cost-effective one-rack unit (1RU) platform providing the highest density of line-rate 8-Gbps Fibre Channel ports in the industry. It is fully compatible with the Cisco MDS 9500 Series Multilayer Directors, MDS 9200 Series Multilayer Switches, and 9100 Series Multilayer Fabric Switches for transparent, end-to-end service delivery in large data center core-edge deployments. Its ready-to-use capabilities, including Quick Configuration and Task wizards, allow for easy deployment in any size network. The Cisco MDS 9148 is competitively priced with enterprise-class capabilities: virtual storage area networks (VSANs), PortChannels, nondisruptive code upgrade, comprehensive security (authentication, authorization, and accounting [AAA], role-base access control [RBAC], etc.), troubleshooting, and diagnostics. It is fully optimized to accommodate virtualized server environments. Scalability is provided for virtual machines through N-Port ID Virtualization (NPIV) and VSAN technology. Virtual machine granularity is provided for quality of service (QoS) and management together with flexibility for virtual machine mobility and security. The switch:

· Provides 8-Gbps, nonblocking throughput on all 48 ports
· Offers FlexAttach technology to enable transparent server deployment without the need to reconfigure the SAN.
· Offers N-Port Virtualization (NPV) technology and N-port ID virtualization (NPIV) support for virtual environments
· Supports VSAN for security and fault isolation
· Provides PortChannels for aggregating up to 16 physical ports into one logical channel

- Offers In Service Software Upgrade (ISSU) to enable firmware upgrades without removing the switch from service
- Supports high availability with dual hot-swappable power supplies and fans
- Supports RADIUS and TACACS+ port security, Fibre Channel Security Protocol, Secure FTP, Secure Shell (SSH) Protocol Version 2, and role-based access control (RBAC) for comprehensive security controls
- Like all MDS switches and directors, blocks corrupted and malformed frames from entering a fabric, protecting servers and applications

Cisco MDS 9134 Multilayer Fabric Switch

The Cisco MDS 9134 Multilayer Fabric Switch is designed for midrange storage environments and provides flexibility, high availability, security, and ease of use in a compact 1-rack unit (1RU) form factor. With line-rate 4- and 10-Gbps ports and the ability to expand from 24 to 32 ports, the switch is ideal for top-of-the-rack switch and edge connectivity in enterprise storage area networks (SANs). In addition, you can stack the Cisco MDS 9134 in pairs to form a 48- or 64-port 4-Gbps Fibre Channel switch. The switch offers:

- Up to 32 4-Gbps ports and 2 10-Gbps ports per chassis
- 24-port base configuration
- Up to 48 or 64 ports (stacked pair)
- 352 ports aggregate bandwidth
- Integrated IBM Fiber Connection (FICON) connectivity
- On-demand port activation
- Two optional 10-Gbps ports
- Quick Configuration wizard that eliminates complexity

Cisco MDS 9124 Multilayer Fabric Switch

The Cisco MDS 9124 supports 4-Gbps dedicated Fibre Channel ports. It shares common features and the same Cisco MDS 9000 NX-OS Software with the Cisco MDS 9500, MDS 9200, and MDS 9100 Series multilayer switches and directors. It is competitively priced with enterprise-class capabilities: virtual storage area networks (VSANs), PortChannels, nondisruptive code upgrade and comprehensive security (authentication, authorization, and accounting [AAA], role-based access control [RBAC], etc.), troubleshooting, and diagnostics. The Cisco MDS 9124 can be used as the foundation of small standalone SANs or as an edge switch in larger core-edge SAN infrastructures.

The Cisco MDS 9124 has ready-to-use capabilities, including Quick Configuration wizard support and Task wizards, which allow for easy deployment in any size network. The "on-demand" port activation license makes port activation faster.

- Offers 1-, 2-, and 4-Gbps performance
- Scales up to 24 Fibre Channel ports
- Offers simplified management
- Offers easy configuration and deployment
- Provides highly available platform for mission-critical deployments
- Provides comprehensive security framework

For More Information

http://www.cisco.com/go/mds

Cisco MDS 9000 Intelligent Fabric Applications

Cisco offers a collection of software applications designed to optimize your data center resources by providing integrated, high-performance applications to Cisco storage networks. Support disaster recovery, security, data mobility, and other heterogeneous storage requirements without adding appliances or using host or array resources. The Cisco MDS 9000 Family Services Nodes provide network-hosted services to Cisco storage networks such as storage-area-network (SAN) extension (Fibre Channel over IP [FCIP]), I/O Acceleration (IOA), XRC Acceleration (XRC), Storage Media Encryption (SME), and Data Mobility Manager (DMM).

Network-assisted applications are enabled through the open Intelligent Services API (ISAPI). Cisco makes this development platform available to original storage manufacturers (OSMs) and independent software vendors (ISVs) who want to develop storage applications on the Cisco storage networks platform.

For More Information

http://www.cisco.com/go/storagenetworking

Cisco MDS 9000 XRC Acceleration

Cisco MDS 9000 XRC Acceleration is a SAN fabric-based feature that improves the performance of IBM z/OS Global Mirror (formerly XRC) over WAN links, improving bandwidth usage and dynamic update performance. It is implemented on the Cisco MDS 9000 18/4-Port Multiservice Module and the Cisco MDS 9222i Multiservice Modular Switch. It requires Cisco MDS 9000 NX-OS Software Version 4.2 or later.

- XRC Acceleration maximizes parallelism by supporting multiple system data movers (SDMs) and multiple readers within each SDM. IBM Parallel Access Volumes (PAVs) and HyperPAVs are supported. Fibre Connection (FICON) Data Access Storage Devices (DASDs) from IBM, EMC, and HDS are supported to complete the ecosystem.
- XRC Acceleration runs on the same hardware as the underlying SAN Extension on Fibre Channel over IP (FCIP), and it takes advantage of the IP Security (IPsec) encryption and data compression MDS switches

provide. Many customers experience compression ratios of 4:1 or better, and many report compression exceeding 5:1.

Selected Part Numbers and Ordering Information

M9500XRC=	Cisco MDS 9000 XRC Acceleration Package for one Cisco MDS 9500 Series Multilayer Director
M9200XRC=	Cisco MDS 9000 XRC Acceleration Package for one Cisco MDS 9200 Series Multilayer Switch

For More Information
http://www.cisco.com/go/storagenetworking

Cisco MDS 9000 Storage Media Encryption (SME)

The Cisco MDS 9000 Family Storage Media Encryption (SME) provides encryption as a SAN service. It encrypts data at rest on heterogeneous tape devices and virtual tape libraries. Cisco SME is completely integrated with Cisco MDS 9000 Family switches and Cisco Fabric Manager, enabling deployment and management of highly available encryption services without rewiring or reconfiguring SANs or installing additional software. Data stored in any virtual SAN (VSAN) can use Cisco SME. It employs clustering technology to enhance reliability and availability, enable automated load balancing and failover capabilities, and simplify provisioning. Secure key management is included, with essential features such as key archival and shredding.

- The Cisco MDS 9000 SME provides simple, non-disruptive installation and provisioning. Neither rewiring nor SAN reconfiguration is required.
- Encryption engines are integrated on Fibre Channel switching modules.
- The SME encrypts traffic from any VSAN.
- No additional software is required for provisioning, key, or user role management.

Selected Part Numbers and Ordering Information

M9500SME1MK9	Cisco Storage Media Encryption package for one MPS-18/4 or MPS-18/4 FIPS module in the Cisco MDS 9500 series
DS-SCR-K9=	Smart Card Reader for Cisco SME

For More Information
http://www.cisco.com/go/storagenetworking

Cisco MDS 9000 I/O Accelerator (IOA)

Cisco MDS 9000 Family I/O Accelerator (IOA) software improves remote I/O performance and bandwidth usage over MAN and WAN links. This fabric-based acceleration service is implemented on the Cisco SSN-16 Storage Services Node, Cisco MDS 9000 18/4-Port Multiservice Module, and Cisco MDS 9222i Multiservice Modular Switch. It requires Cisco MDS 9000 NX-OS Software Version 4.2 or later.

- IOA speeds up Small Computer System Interface (SCSI) disk writes and tape reads and writes over MANs and LANs.
- IOA service nodes can be located anywhere in the fabrics on each side of the remote link.
- FCIP links can take advantage of the encryption and compression (as much as 5:1) built into the supporting hardware.
- Inter-Switch Links (ISLs) between a pair of 8-Gbps line cards can use Cisco TrustSec Fabric Channel link encryption to help secure data sent between data centers, and IOA can also add compression to MAN traffic.
- A Fabric Manager wizard simplifies configuring the infrastructure on each side of the MAN or WAN link.
- Insertion of the acceleration service into the data path is transparent and non-disruptive.
- Installation and provisioning are simple and non-disruptive. Neither rewiring nor SAN reconfiguration is required.
- Encryption engines are integrated on Fibre Channel switching modules.
- The IOA encrypts traffic from any VSAN.
- No additional software is required for provisioning, key, or user role management.

Selected Part Numbers and Ordering Information

M92IOA184= M95IOA184=	Cisco MDS 9000 Family I/O Accelerator Package license for MSM-18/4 on Cisco MDS 9200 Cisco MDS 9000 Family I/O Accelerator Package license for MSM-18/4 on Cisco MDS 9500
M92IOASSN= M95IOASSN=	Cisco I/O Accelerator license (1 engine) for SSN-16 on Cisco MDS 9200 Cisco I/O Accelerator license (1 engine) for SSN-16 on Cisco MDS 9500
M9222IIOA=	Cisco I/O Accelerator license for Cisco MDS 9222i base switch

For More Information
http://www.cisco.com/go/storagenetworking

Cisco MDS Data Mobility Manager (DMM)

The Cisco Data Mobility Manager (DMM), a fabric-based data migration solution that transfers block data non-disruptively across heterogeneous storage volumes and across distances, irrespective of whether the host is online or offline, is such a solution. With no host components to deploy, the time-consuming, costly, and sensitive task of installing and licensing hardware and software on servers is avoided. In addition, host CPU and bandwidth cycles are available to the application in their entirety, so applications do not experience any deterioration in performance.

It is implemented on the Cisco MDS 9000 18/4-Port Multiservice Module, Cisco MDS 9222i Multiservice Modular Switch, and Cisco Storage Services Module (SSM) line cards of Cisco MDS 9000 Series Switches. SSM cards require Cisco MDS 9000 SAN-OS Software Version 3.2 or later. The Cisco MDS 9000 18/4-Port Multiservice Module and MDS 9222i Multiservice Modular Switch require Cisco MDS 9000 NX-OS Software Version 4.1 or later. Typically this capability addresses:

- Array lease expiration and decommissioning
- Capacity planning and tiered storage strategies
- Asynchronous and synchronous migration across heterogeneous arrays
- Unlimited support on the number of arrays and no restriction on the amount of data moved

Selected Part Numbers and Ordering Information

M92DMM184K9=	Cisco Data Mobility Manager (DMM) License for one 18/4 on Cisco MDS 9200
M95DMM184K9=	Cisco Data Mobility Manager (DMM) License for one 18/4 on Cisco MDS 9500
M9222IDMMK9=	Cisco Data Mobility Manager (DMM) License for Cisco MDS 9222i

For More Information

http://www.cisco.com/go/storagenetworking

Cisco MDS NX-OS Software

Cisco MDS 9000 NX-OS Software is designed to create a strategic SAN platform with superior reliability, performance, scalability, and features. Formerly known as Cisco SAN-OS, Cisco MDS 9000 NX Software is fully interoperable with earlier Cisco SAN-OS versions and enhances hardware platform and module support. Cisco NX-OS Software helps unify and simplify the next-generation data center. Cisco NX-OS currently runs on the following Cisco data center products:

- Cisco Nexus 7000 Series modular switches
- Cisco Nexus 5000 Series rack switches
- Cisco Nexus 4000 Series blade switches
- Cisco Nexus 1000V Series virtual switches
- Cisco MDS 9000 Series of Fibre Channel storage switches
- Cisco UCS 6100 Series Fabric Interconnects of the Cisco Unified Computing System

By allowing you to implement a single operating system across network, storage, and compute infrastructure, Cisco NX-OS greatly simplifies data center operations, producing a direct, positive effect on operation costs. Similarly, because it is designed for high system availability, enhanced manageability, and unified data center infrastructure, Cisco NX-OS further reduces both data capital and operating expenditures. Finally, because it is built on a modular, adaptable architecture, Cisco NX-OS provides forward investment protection with an inherent ability to easily incorporate additional innovations and new technologies.

For More Information

http://www.cisco.com/go/mds

Cisco Catalyst Blade Switch 3000 and 3100 Series

Cisco Catalyst Blade Switch 3100 Series and the Cisco Catalyst Blade Switch 3000 Series are specifically designed to meet the rigors of blade server application infrastructure. The Cisco Catalyst Blade Switch 3000 Series provides cost-effective gigabit Ethernet connectivity, while the Cisco Catalyst Blade Switch 3100 series provides high performance 10Gb Ethernet connectivity and innovative Virtual Blade Switch (VBS) technology. The Cisco Catalyst Blade Switches help address the problems of server sprawl within the data center infrastructure.

These servers allow mixing and matching of Gigabit Ethernet and 10 Gigabit Ethernet switches, providing customers with a cost-effective migration path. Switch capacity can be incrementally upgraded as server needs demand. Cisco blade switches are optimized for IBM, HP, Dell, and FSC storage environments. These products introduce an innovative new technology called the virtual blade switch (VBS), which allows up to 8 physical switches to be combined into a single logical switch. These products represent the foundation of the many additional functions that the Cisco Catalyst Blade Switch 3100 Series delivers.

Key Features and Benefits

- The VBS is self-managing and self-configuring—When switches are added or removed, the master switch automatically loads the Cisco IOS Software version running on the VBS to the new switch, loads the global configuration parameters, and updates all the routing tables to reflect changes. Upgrades are applied universally and simultaneously to all members of the VBS.
- The VBS is highly resilient—Each switch can operate both as master controller and as forwarding processor. Each switch in the VBS can serve as a master, creating a 1:N availability scheme for network control. In the unlikely event of a single-unit failure, all other units continue to forward traffic and maintain operation.
- The VBS offers industry-leading mechanisms for marking, classification, and scheduling to deliver superior performance for data, voice, and video traffic, all at wire speed.
- The VBS supports a comprehensive set of security features for connectivity and access control, including access control lists (ACLs), authentication, port-level security, and identity-based network services with IEEE 802.1x and extensions. This set of features not only helps prevent external attacks, but also defends the network against "man-in-the-middle" attacks. The VBS-enabled switch also supports the Cisco Network Admission Control (NAC) security framework.
- The VBS-enabled switch is managed as a single object and has a single IP address.

Selected Part Numbers and Ordering Information

WS-CBS3125G-S	Cisco Catalyst Blade Switch 3125G for HP w/ IP Base
WS-CBS3125X-S	Cisco Catalyst Blade Switch 3125X for HP w/ IP Base
WS-CBS3020-HPQ	Cisco Catalyst Blade Switch 3020 for HP
WS-CBS3130G-S	Cisco Catalyst Blade Switch 3130G for Dell M1000e with IP Base
WS-CBS3130X-S	Cisco Catalyst Blade Switch 3130X for Dell M1000e with IP Base
WS-CBS3032-DEL	Cisco Catalyst Blade Switch 3032 for Dell M1000e
WS-CBS3012-IBM-I	Cisco Catalyst Switch Module 3012 for IBM
WS-CBS3110G-S-I	Cisco Catalyst Switch Module 3110G for IBM BladeCenter w/ IP Base
WS-CBS3110X-S-I	Cisco Catalyst Switch Module 3110X for IBM BladeCenter w/ IP Base
WS-CBS3040-FSC	Cisco Catalyst Blade Switch 3040 for FSC

For More Information

http://www.cisco.com/go/bladeswitch

Cisco Data Center Services

Cisco Data Center Services Cisco Services help you transform and optimize your data center infrastructure so you can reduce costs, deliver high availability and application performance, and better meet your service level agreements.

Accelerate Data Center Transformation

Today, the data center is a strategic asset in a world that demands better integration among people, information, and ideas. Your business and your data center work better when technology products and services are aligned with your business needs and opportunities. Using a unique network-based perspective and a unified view of data center assets, Cisco and our industry-leading partners deliver services that accelerate the transformation of your data center.

Achieve Business Success Through an Architectural Approach

In collaboration with your team and our partner ecosystem, we take an architectural approach to help you create a more intelligent, responsive, integrated data center infrastructure. Through a robust portfolio of services, we can help you align IT to the needs of your business, unify data center silos, and create a flexible architecture optimized for your organization. We can help you assess readiness to support proposed solutions, integrate new capabilities, and help keep the data center secure, available, and operating reliably.

Optimize Your IT Infrastructure As Your Data Center Evolves

Data centers must continually evolve to meet business needs. Cisco's Data Center Optimization Service provides expertise, best practices and knowledge transfer to help your IT organization respond to business changes, deliver next generation services, and stay ahead of the competition.

Together with our rich diverse ecosystem of partners, Cisco Services helps you deploy and optimize a data center solution that is customized for your unique business needs. Our focus is on your success today and tomorrow.

For more information about Cisco Data Center Services, visit http://www.cisco.com/go/dcservices.

Chapter 7: Video and Broadband Cable

This chapter provides only a subset of Cisco products and part numbers.

Video and Broadband Cable At-a-Glance

Product	Features	Page
VIDEO		
Cisco Digital Media Suite ***NEW UPDATES***	· Comprehensive offering of webcasting and video sharing, digital signage, and business IPTV applications that can help transform how organizations learn, grow, communicate, and collaborate · Support from the broad Cisco partner ecosystem of deployment, solution-development, and content-creation partners helps ensure a successful digital media implementation	7–2
Cisco Digital Media Encoders ***NEW UPDATES***	· Integrated components of the Cisco Digital Media Suite for Cisco Show and Share · Provides live and on-demand streaming digital media across an IP network · Cisco Digital Media Encoder 1100 is a portable encoder, and Cisco Digital Media Encoder 2200 is a multiprocessor, studio-quality audio and video encoding appliance	7–3
Cisco Digital Media Manager ***NEW UPDATES***	· Integrated component of the Cisco Digital Media Suite for webcasting and video sharing, digital signage, and business IPTV applications · Web-based application allows content authors to easily manage and publish content to the Cisco Show and Share, Cisco Digital Signs, or other endpoints	7–4
Cisco Digital Media Players ***NEW UPDATES***	· Highly reliable, IP-based hardware endpoints that enable digital signage and business IPTV through the ability to play high-definition live and on-demand video, motion graphics, Web, and dynamic content on digital displays	7–5
Cisco LCD Professional Series Displays ***NEW UPDATES***	· Large-format professional-quality displays ideally suited for digital signage and business IPTV solutions · 32-, 40- and 52-inch models and offer full 1080p resolution	7–7
Cisco Show and Share ***NEW UPDATES***	· Integrated component of the Cisco Digital Media Suite for webcasting and video sharing · Provides the ability to create live and on-demand video content and define who can watch specific content · Offers viewer collaboration tools such as commenting, rating, and word tagging; and it provides comprehensive access reporting.	7–8
Cisco Unified Communications	For product information on Cisco's Unified Communication products, refer to Chapter 4, "Collaboration."	See 4–1
Cisco TelePresence	For product information on Cisco's TelePresence products, refer to Chapter 4, "Collaboration."	See 4–1
Cisco WebEx	For product information on Cisco's WebEx products, refer to Chapter 4, "Collaboration."	See 4–1
Cisco Physical Security	For product information on Cisco Video Surveillance products, refer to Chapter 5, "Security."	See 5–1
MEDIA EXPERIENCE & ANALYTICS		
Cisco Media Experience Engine (MXE) 3000	· Media-processing platform that allows users to adapt and customize content for different video experiences · Media files can easily be shared between digital signage, desktop video, mobile devices, and other applications · Deployed as a standalone device or used to complement a Cisco Digital Media System (DMS) deployment by extending the reach of media users to create content once to be played on all DMS applications as well as mobile devices	7–10
Cisco Media Experience Engine (MXE) 3500 ***NEW PRODUCT***	· Advanced media processing appliance that re-purposes live video to be played back on a variety of endpoints · Cisco Media Experience Engine 3500 has limited availability. Please check website for availability restrictions	7–12
Cisco Media Experience Engine (MXE) 5600 ***NEW PRODUCT***	· Purpose-built, highly scalable modular media processing system that combines advanced media processing features with high-definition interoperability for Cisco TelePresence and video conferencing endpoints	7–14
Cisco Pulse ***NEW PRODUCT***	· Automatically discovers pertinent work experience and valuable content spread across the enterprise and integrates seamlessly with all communications and conferencing tools · Built as an open platform, but tightly integrated with Cisco's technology architectures, Cisco Pulse delivers rich team and customer experiences in a click, allowing workforces to be more competitive, responsive, and productive	7–16
BROADBAND CABLE		

Cisco uBR7225 Series Universal Broadband Router ***NEW UPDATES***	• Low-cost entry and midlevel cable modem termination system (CMTS), offering cable operators, multiunit businesses, and Internet service providers (ISPs) an excellent and cost-effective platform for the delivery of high-speed data, voice, and video services	7–17
Cisco uBR7246VXR Universal Broadband Router ***NEW UPDATES***	• Modular, standards-based communications-grade Cable Modem Termination System (CMTS) integrated router is ideal for high-growth broadband cable deployments	7–18
Cisco uBR10012 Universal Broadband Router	• Delivers the services, performance, scale, and carrier-class reliability that large cable operators and Internet service providers (ISPs) demand	7–19
Cisco uBR3x10 RF Switch	• Delivers the services, performance, scale, and carrier-class reliability that large cable operators and Internet service providers (ISPs) demand	7–21

SERVICES	
Cisco Services Realize the full business value of your technology investments faster with intelligent, personalized services from Cisco and our partners.	7–22

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco Digital Media Suite

The Cisco Digital Media Suite (DMS) is a comprehensive offering of webcasting and video sharing, digital signage, and business IPTV applications that can help transform how organizations learn, grow, communicate, and collaborate. Support from the broad Cisco partner ecosystem of deployment, solution-development, and content-creation partners helps ensure a successful digital media implementation.

Digital Signage: Cisco Digital Signs

Cisco Digital Signage provides scalable, centralized management and publishing of high-quality content to networked, on-premise digital signage displays

Built on the power of the Cisco Digital Media Suite, Cisco Digital Signage leverages the same hardware and management platform as and can interoperate with Cisco Cast, or can operate as a standalone application.

To provide assistance in content strategy and creation, Cisco offers these content development services.

Cisco Digital Media Creative Services (DMCS), with a focus on strategy, helps customers and partners design, create, and transform content for digital signage. DMCS helps deliver the optimum visual experience through a three-part process:
- Creative brief
- Content strategy
- Content design

The Cisco Academy of Digital Signage (ADS) is a global qualification program that trains media professionals to create and optimize media content for digital signage so that businesses may quick-start digital signage deployments. ADS provides a hands-on, practical approach to content design based on the established creative strategy. For more information visit: http://www.cisco.com/go/dms/ads.

Business IPTV: Cisco Cast

Cisco Cast is an interactive application that enables organizations to deliver on-demand video and broadcast live TV channels over an IP network to digital displays.

On-screen menus and program guides give users access to Cisco Cast content, and organizations can customize lineups and create their own content libraries. Users can navigate through channel menus and select from on-demand content with a remote control or other remote devices.

Built on the power of the Cisco Digital Media Suite, Cisco Cast leverages the same hardware and management platform as and can interoperate with Cisco Digital Signs, or can operate as a standalone application.

Webcasting and Video Sharing: Cisco Show and Share

Built on the power of the Cisco Digital Media Suite, Cisco Show and Share provides the ability to create live and on-demand video content and define who can watch specific content. It offers viewer collaboration tools such as commenting, rating, and word tagging, and it provides comprehensive access reporting.

Key Features and Benefits
- Communicate richly and effectively with targeted customers, investors, partners, and media. In addition, they can deliver crucial information and training to employees, suppliers, and partners.
- Target consumers with tailored content directly to their desktop on digital signage or mobile devices.

- Offer live and on-demand events and content to geographically dispersed audiences.

The Cisco Digital Media Suite provides applications and solutions for a variety of industries, including financial services, retail, education, and healthcare.

Integrated Components of the Cisco Digital Media Suite

The Cisco Digital Media Suite includes:
- Creation with Cisco Digital Media Encoders (DMEs)
- Management with the Cisco Digital Media Manager (DMM)
- Content publishing to the Cisco Digital Media Players (DMPs)
- Access through the Cisco Show and Share
- Display with the Cisco LCD Professional Series Displays

In addition to the products in the DMS product line, the Cisco Media Experience Engine (MXE) allows users to further extend the reach of their media content. As a complimentary solution to your DMS deployment, the MXE enables any-to-any media transformation in the network, enabling users to create content once to be played on all DMS applications as well as mobile devices.

For More Information

http://www.cisco.com/go/dmcs

Cisco Digital Media Encoders

Cisco Digital Media Encoders provide live and on-demand streaming digital media across an IP network. Organizations can schedule and manage live events from multiple encoders from a single administration interface. The encoders can be locally managed or remotely managed through the Cisco Digital Media Manager. The Cisco Digital Media Encoder can be used as a standalone encoder or as an integrated component of the overall Cisco Digital Media Suite for Cisco Show and Share.

The studio-level (Cisco DME 2200) and portable (Cisco DME 1100) encoders provide live and on-demand streaming digital media across an IP network in a variety of encoding formats, inputs, and monitoring functions.

Key Features and Benefits

The Cisco Digital Media Encoder 1100 offers the following features:
- Designed for both professionals and novices, the rugged-design, lightweight encoder is ideal for outdoor venues, classrooms, and conference rooms because it can extend Webcasting "outside of the studio".
- Lightweight, single channel
- Encoding of video live for live network distribution
- Local management; or remote management through the Cisco Digital Media Manager

The Cisco Digital Media Encoder 2200 offers the following features:
- Designed for advanced users who require multiple audio and video input options and a variety of encoding formats and functions.
- Studio-level, duel channel— a good choice for the corporate office or data center
- Live encoding/transcoding of media from analog and digital sources into standard formats (WMV, FLV, H.264, and so on.)
- Local management via an embedded LCD; or remote management through the Cisco Digital Media Manager

Specifications

Feature	Cisco Digital Media Encoder 1100	Cisco Digital Media Encoder 2200
Supported live streaming formats	Microsoft Windows Media 9 MPEG-4/H.264	Microsoft Windows Media 9 MPEG-4/H.264 Product parameter—Supported live-streaming formats for the DMM Live Event Manager (PC only) Specification—Microsoft Windows Media
Supported on-demand formats	Adobe Flash (.flv) Microsoft Windows Media MPEG-4/H.264	Adobe Flash (.flv) Microsoft Windows Media MPEG-4/H.264
Video inputs	Composite; S-Video	2 composite; 2 S-Video; 2 SDI (SMPTE - 259M) Video with embedded audio inputs (AES/EBU)
Audio inputs	1 balanced stereo (XLR3) Unbalanced stereo (RCA)	2 balanced stereo (XLR); 2 Unbalanced stereo (RCA); 2 digital audio (AES/EBU) inputs through SDI inputs
Ethernet ports	1 GB; 10/100 Mb	2 10/100/1000 Mbps
Hard disk space	100 GB	100 GB
RAM	1 GB	4 GB

Processor	Single 2.19-Ghz Intel Core 2 Duo CPU	Dual AMD Opteron Quad Core, 2.2 GHz
Additional ports	2 USB 2.0 and VGA monitor	2 USB 2.0 and VGA monitor
Dimensions (H x W x D)	4.5 x 7.75 x 12 in. (11.43 x 19.67 x 30.48 cm)	3.5 x 19 x 23 in. (8.89 x 48.26 x 58.42 cm)
Weight	7.5 lb. (3.41 kg)	48.62 lb. (19.05 kg)
Power	110-220V; 50-60 Hz	110-220V; 50-60 Hz

Selected Part Numbers and Ordering Information

DMS-DME-1100	Cisco Digital Media Encoder 1100
DMS-DME-2200	Cisco Digital Media Encoder 2200

For More Information
http://www.cisco.com/go/dms

Cisco Digital Media Manager

The Cisco Digital Media Manager allows content authors to manage, schedule, and publish compelling digital media for live or on-demand playback across digital signage displays for Cisco Digital Signs and Cisco Cast, and to the Cisco Show and Share for social video. An integrated part of the Cisco Digital Media Suite, the web-based Cisco Digital Media Manager is the single, central management application for all Cisco Digital Media Suite products.

Content managers can:

- Manage content assets and create playlists for Cisco Digital Signs and Cisco Show and Share
- Schedule instant and future content deployments and playback schedules for Cisco Digital Signs, Cisco Cast, and Cisco Show and Share
- Report on playback schedules for Cisco Digital Signs and on video usage for Cisco Show and Share
- Manage Q&A for live Cisco Show and Share broadcasts
- Synchronize slides for both live and video on demand events

Content designers can:

- Customize signage screen layouts and zones for Cisco Digital Signs
- Customize and brand Cisco Cast, skins and menus
- Customize and brand the Cisco Show and Share interface

IT users can:

- Manage user accounts for role-based access control, and configure user-specific content restrictions for Cisco Show and Share users via LDAP/Active Directory
- Configure and manage Cisco Digital Media Encoders for Cisco Show and Share
- Remotely configure, manage, and monitor digital signage networks
- Manage event-based alerts and server appliances

Specifications

Features	Cisco Digital Media Manager
Product compatibility	Compatible with Cisco Application and Content Networking System (ACNS), the Cisco Wide Area Application Services (WAAS) Network Module, Cisco Show and Share and the Cisco Show and Share Reports tool, Cisco Digital Media Players, and Cisco Digital Media Encoders
Programming interface	Web-based management
Requirements	Cisco Digital Media Manager Client
Browser	Microsoft Windows — Internet Explorer 7.0 or later, Mozilla 1.8 or later recommended, or Firefox 3.0 required; Apple Macintosh—Safari 2.0 minimum; Safari 2.0 or Firefox 1.5 through 3.0 recommended

Selected Part Numbers and Ordering Information

Part Number	Product Name	Required or Optional
SVR-DMM52K9	Cisco Digital Media Manager	Required
MCS-7835H3-DMS	Cisco MCS 7835-H3 Server Appliance	Required
DMM-SIGNSM52-K9	Cisco Digital Signs Module	Required for Cisco Digital Signs implementations
DMM-DVM52_K9	Cisco Show and Share Module	Required for Cisco Show and Share implementations
DMM-CAST52-K9	Cisco Cast Module	Required for Cisco Cast implementations
DMM-LEM52-K9	Cisco Show and Share Live Event Module	Optional

DMM-SNMP52-K9	Cisco DMM SNMP Module	Optional
Software Upgrades and Add-Ons		
DMM-DVM52-K9=	DMM Show and Share Module V5.2 Perpetual Software License, Spare	
DMM-SIGNSM52-K9=	DMM Digital Signs Module V5.2 Perpetual Software License, Spare	
DMM-LEM52-K9=	DMM Show and Share Module Live Event Module Perpetual Software License	
DMM-SNMP52-K9=	Digital Media Manager Ver. 5.2 SNMP Module Perpetual Software License	
DMM51-U52-K9	Cisco Digital Media Manager V5.2. Upgrade from V5.0	
DMP-SW52-U-K9	Digital Media Player V5-V5.2 Perpetual Software License	
DV-WKGP-U52-K9	Show and Share Module 5.2. Upgrade from V5.0 - Workgroup	
DV-ENT-U52-K9	Show and Share Module 5.2. Upgrade from V5.0-Enterprise	
DMP-FL-10=	Cisco Digital Media Manager, Feature License for Up To 10 DMPs	
DMP-FL-50=	Cisco Digital Media Manager, Feature License for Up To 50 DMPs	
DMP-FL-500=	Cisco Digital Media Manager, Feature License for Up To 500 DMPs	
DMP-FL-1000=	Cisco Digital Media Manager, Feature License for Up To 1000 DMPs	
Hardware Spares		
MCS-7835H3-DMS=	HW Only Server with 4GB RAM and 4 300GB HD	
WAVE-574-DMS=	HW Only Server with 4GB RAM and 2 500GB HD	

For More Information

http://www.cisco.com/go/dms

Cisco Digital Media Players

Cisco Digital Media Players (DMPs) are highly reliable, IP-based hardware endpoints that enable Cisco Digital Signs and Cisco Cast through the ability to play high-definition live and on-demand video, motion graphics, Web, and dynamic content on digital displays. The DMP hardware options include support for standard-definition and high-definition MPEG-2 and MPEG-4/H.264, Flash, RSS, and other Web formats and dynamic data.

Using the Cisco Digital Media Suite's Cisco Digital Media Manager, organizations can flexibly and remotely publish centralized content over the Web to networked digital signs, Cisco Digital Media Players can be attached to virtually any on-premise digital signage display at any location, including branch-office banks, retail stores, break rooms, or lobbies, helping organizations reach their primary audiences anywhere, anytime.

Cisco Digital Media Players deliver flexible and real-time publishing; low ongoing operational costs and ease of use; speed of deployment; and leverage the scalability and power of the network.

The Cisco Digital Media Player 4305G includes such features as:
- Support for MPEG 1/2/4 Part 2 video in standard definition and high definition as well as graphics, Web content, Adobe Flash 7 or less, animation, mp3 audio, and tickers.
- 2-GB local storage for reliability and performance
- IP-enabled delivery of live broadcasting and on-demand video content
- Small form factor: 7.5 x 5 x 1.5 in. at 1 lb
- Low power consumption
- IP-enabled delivery of live broadcasting and on-demand video content

The Cisco Digital Media Player 4400G includes such features as:
- Support for MPEG 1/2/4 Part 10 video in standard definition and high definition as well as graphics, Web content, and Adobe Flash 9 animation, Windows Media 9 and VC-1, mp3 audio, and tickers.
- 4-GB local storage for reliability and performance
- Touchscreen technology support
- 802.11 B/G wireless network support
- Small form factor: 10 x 8 x 2 in.; weighs 4.5 lb.
- Low power consumption
- IP-enabled delivery of live broadcasting and on-demand video content

Integrated with the Cisco Digital Media Manager, the Cisco Digital Media Players provide:
- Remote management of display (on and off, volume, contrast, and brightness)
- Full-screen video playback or "on-screen zoning" of multiple content types on a single display
- Customizable onscreen presentation templates and playlists

Specifications

Feature	Cisco Digital Media Player 4305G	Cisco Digital Media Player 4400G
Supported protocols	FTP and secure FTP (SFTP); HTTP and HTTPS; User Datagram Protocol (UDP); Real-Time Transport Protocol (RTP) over Real-Time Streaming Transport Protocol (RTSP)	FTP and secure FTP (SFTP); HTTP and HTTPS; User Datagram Protocol (UDP); Real-Time Transport Protocol (RTP) over Real-Time Streaming Transport Protocol (RTSP)
Video containers	MPEG Transport Stream (TS, TP, TRP, M2T, M2TS, and MTS)	MPEG Transport Stream (TS, TP, TRP, M2T, M2TS, and MTS); ASF; WMV
Video codecs	Video MPEG 1; Video MPEG 2: Main Profile at High Level; Video MPEG 4 part 2: Advanced Simple Profile at Level 5; Aspect ratio: 4:3 and 16:9; HD (up to 1080 at 16:9) progressive and interlace video resolution; Video data rate up to 82 Mbps; Overall delay 1–3 sec Note: Please consult other Cisco documentation or your Cisco representative for exact audio codec, video codec, resolution, bit rate, and encapsulation combinations.	Video MPEG 1; Video MPEG 2: Main Profile at High Level; Video MPEG 4 part 10 Baseline and Main profiles; Video Windows Media 9 and VC-1 VoD only; Aspect ratio: 4:3 and 16:9; HD (up to 1080P at 16:9) progressive and interlace video resolution; Video data rate up to 28 Mbps; Overall delay 1–3 sec Note: Please consult other Cisco documentation or your Cisco representative for exact audio codec, video codec, resolution, bit rate, and encapsulation combinations.
Audio codecs	Audio MPEG 1 Layers 1 and 2; mp3; MPEG 4 AAC Low Complexity; AC-3; Audio data rate: 64–320 kbps Note: Please consult other Cisco documentation or your Cisco representative for exact audio codec, video codec, resolution, bit rate, and encapsulation combinations.	Audio MPEG 1 Layers 1 and 2; mp3; MPEG 4 AAC Low Complexity; AC-3; Audio data rate: 64–320 kbps Note: Please consult other Cisco documentation or your Cisco representative for exact audio codec, video codec, resolution, bit rate, and encapsulation combinations.
Remote control	Transmitter Type and Maximum Supported Distance—Infrared (IR), 15 ft.	Transmitter Type and Maximum Supported Distance—Infrared (IR), 15 ft.
Flash memory	32 MB for OS; 2 GB for internal storage	4GB CF-card with endurance of 1,000,000 Write/Erase Cycles for OS and application storage
Physical connectors	Ethernet copper 10/100 BASE-T, RCA Video, S-Video, RCA Audio Left, RCA Audio Right, HDMI, and RS-232 and USB Cable Type* and Maximum Supported Length—Composite/RCA cable, 10 ft.; HDMI 1.1**, 16 ft.; S-Video, 10ft. * Cable quality can be a factor **An HDMI extender product can be used to extend the cable to 150 ft.	Ethernet copper 10/100 BASE-T, RCA Video, S-Video, Mini 3.5 mm Stereo Audio Jack, HDMI, and RS-232 and USB Cable Type* and Maximum Supported Length; Composite/RCA cable, 10 ft.; HDMI 1.1**, 16 ft.; S-Video, 10ft.; USB 2.0 (2), 15 ft.; SPDIF, 10 ft. * Cable quality can be a factor **An HDMI extender product can be used to extend the cable to 150 ft.
Wireless connectivity		Wireless Radio: 802.11 B/G; Security protocols: WPA, WPA2, EAP+FST, and WEP
Touchscreen support		Vendor: 3M Supported Systems: Touchscreen Sensor and Systems: 3M Micro Touch; ClearTek II touch sensor; 3M MicroTouch System SCT3250CX; 3M Micro Touch Sensor SCT7650; 3M MicroTouch System SCT3250SX; 3M Micro Touch Capacitive TouchSense System; 3M MicroTouch DST touch system Display Systems: 3M Micro Touch Display M1500SS (15 in.); 3M MicroTouch Display M1700SS (17 in.); 3M MicroTouch CT150 15-in. LCD Touch Monitor; 3M MicroTouch ChassisTouch 17 in. LCD Touch Monitor Vendor: ELO Supported Systems: All Acoustic Pulse Recognition systems Vendor: Zytronics Supported Systems: Zybrid Screen systems Vendor: General Touch Supported Systems: All systems supported by the ST6001S controller
Power	Input voltage—5V Input current—3 ADC Power consumption—Peak: 12W; average: 5W	Input voltage:—12V Input current—3 ADC Power consumption—Peak: 30W; average: 15W

Environmental	Operating temperature—41ºF to 122ºF (5 to 50ûC); Passed 500-hour test of the uninterrupted video playback in 125.6ºF (52ºC) dry-heat environment Humidity—20 to 80% noncondensing	Operating temperature—41ºF to 104ºF (5 to 50ºC); Passed 500-hour test of the uninterrupted video playback in 125.6ºF (52ºC) dry-heat environment Humidity—20 to 80% noncondensing
Functional	Video in—MPEG 1, MPEG 2, and MPEG 4 part 2 Audio in: Transport stream: Up to 6 audio packet IDs (part numbers) in transport stream Video out: Analog video (composite, S-Video); Digital video (HDMI) Audio out: Analog unbalanced audio (mono and stereo); MPEG 1 Layer 2: Selected; packet IDs in transport stream (1 of 6); MPEG 4 AAC and AC-3—Selected elementary audio (1 of 6)	Video in: MPEG 1, MPEG 2, and MPEG 4 part 10, Windows Media 9, and VC-1 Audio in: Transport stream: Up to 6 audio packet IDs (part numbers) in transport stream; mp3 Video out: Analog video (composite, S-Video); Digital video (HDMI 1:1) Audio out: Analog unbalanced audio (mono and stereo); MPEG 1 Layer 2: Selected; packet IDs in transport stream (1 of 6); MPEG 4 AAC and AC-3; Selected elementary audio (1 of 6)

Selected Part Numbers and Ordering Information

DMP-4305G-52-K9	Cisco Digital Media Player 4305G (Note: Includes Cables Accessory Kit)
DMP-SW52-K9	Digital Signage User Lic. for DMP 4305G
DMP-RM-K9=	Cisco Digital Media Player Remote Spare
DMP-SW52-U-K9	Digital Media Player V5-V5.1 Perptl. SW Upgrade
DMP-ACC-KIT	Cisco Digital Media Player 4305G, Cables Accessory Kit, Spare. (Note: A Cables Accessory Kit is already included with the Cisco Digital Media Player 4305G. This Spare Kit is an additional cost.)
DMP-RM-K9=	Cisco Digital Media Player Remote Spare
DMP-4400G-52-K9	Cisco Digital Media Player 4400G (Note: Includes Cables Accessory Kit)
DMP-SW52-K9	Digital Signage User Lic. for DMP 4400G
DMP-RM-K9=	Cisco Digital Media Player Remote Spare
DMP-SW52-U-K9	Digital Media Player V5-V5.1 Perptl. SW Upgrade
DMP4400-ACC-KIT	Cisco Digital Media Player 4400G, Cables Accessory Kit, Spare. (Note: A Cables Accessory Kit is already included with the Cisco Digital Media Player 4305G. This Spare Kit is an additional cost.)
DMP-RM-K9=	Cisco Digital Media Player Remote Spare

For More Information

http://www.cisco.com/go/dms

Cisco LCD Professional Series Displays

Cisco LCD Professional Series Displays form an integral part of the overall Cisco Digital Media Suite (DMS) suite of products. Offering a complete end-to-end solution for digital signage and business IPTV, these displays are available in 32-, 40- and 52-inch models and offer full 1080p resolution.

Cisco LCD Professional Series Displays offer:

· An end-to-end Cisco solution
· Centralized, remote management through the Cisco Digital Media Manager (on and off, volume, contrast, and brightness)
· Cisco support and service offerings

Specifications

Feature	Cisco LCD 100L Pro 32N	Cisco LCD 110 Pro 52S	Cisco LCD 100 Pro 40N
Diagonal Size	32 inches	52 inches	40 inches
Native Resolution	1366 x 768 (WXGA) 1920 x 1080 (HDMI)	1080p (1920*1080)	1080p (1920*1080)
Resolutions Supported	180p, 1080i, 720p	180p, 1080i, 720p	180p, 1080i, 720p
Brightness	500 cd/m2	700 cd/m2	470 cd/m2
Contrast Ratio	3000:1 (Dynamic Contrast Ratio)	2000:1	3000:1

Viewing Angle (H/V)	178/178 degrees	178/178 degrees	178/178 degrees
Response Time (G-to-G)	8 ms	8 ms	8 ms
Video Inputs	HDMI, VGA, and DVI (composite, component, and S-video also exist)	CVBS/Component/HDMI	HDMI
Power Supply	AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V~ (+/- 10%), 50/60 Hz	AC 100 - 240 V~ (+/- 10%), 50/60 Hz
VESA Mount	200 x 200 mm	800*400 mm	600*400 mm
Weight (Set/Package)	31.7/39.2 Kg	36.8/47 Kg	19.0/22.5 Kg
Dimension	31.61 x 19.41 x 3.93 mm	713 x 1211 x 137.1 mm	582,0 x 971 x 118.5 mm
Bezel Width	40 mm	22 mm	40 mm

Selected Part Numbers and Ordering Information

LCD-110-PRO-52S	Cisco LCD 52" Display, 1080p, Bezel S, w/Remote Control
LCD-100-PRO-STD	Leg Stand for Displays (Note: Optional)
LCD-100-PRO-40N	Cisco LCD 40" Display, 1080p, Bezel N, w/Remote Control
LCD-100L-PRO-32N	Cisco LCD L-Series 32" Display, 1080p, Bezel N, w/Remote Control

For More Information

http://www.cisco.com/go/dms

Cisco Show and Share

An integrated component of the Cisco Digital Media Suite for webcasting and video sharing, Cisco Show and Share helps organizations create secure video communities to share ideas and expertise, optimize global video collaboration, and personalize the connection between customers, employees, and students with user-generated content. Cisco Show and Share provides the ability to create live and on-demand video content and define who can watch specific content, it offers viewer collaboration tools such as commenting, rating, and word tagging, and it provides comprehensive access reporting.

Cisco Show and Share fits into your organization's existing IP network and helps ensure that your video content is stored securely within your IT infrastructure. It supports established video formats including Windows Media, Flash, and the MPEG-4/H.264 standard for Video on Demand (VoD) files. The Windows Media format is supported for PC playback for live streams.

When an MXE 3500 is available on the network, Show and Share provides the ability to have all files that are uploaded by Show and Share automatically transcoded to an optimal window-size and bit rate via the Flash format. These files are automatically sent from the Show and Share server to the MXE 3500, where they are transcoded and then retrieved by Show and Share for editing and publishing.

Key Features and Benefits

- Creating
  - Capture of video directly with Cisco Show and Share—You do not need to install any special software on your PC or Macintosh. Cisco Show and Share works with Adobe Flash player to support a wide variety of built-in and USB-based cameras and microphones that you can use to capture video.
  - Assigned authors—Cisco Show and Share systems administrators can define by username those who can capture and upload content. Organizations can provide initial access to a small set of content authors and add additional authors as needed.
- Publishing
  - Content viewing security—Publishers can define "who can watch what" for each video for secure content viewing needs.
  - Optional viewer collaboration—Commenting, rating, and tagging. Publishers can choose per title what type of view collaboration functions are available, such as commenting, rating, and tagging.
- Browsing and search
  - Public and private categories—Viewers can browse both private and public categories based on their login credentials.
  - Keyword tags—Viewers can use popular keyword tags that are displayed to help them find content.
- Viewing and sharing
  - Video playback controls—Viewers have complete playback controls for on-demand content, including start and stop controls.
  - Commenting options—Authors can optionally provide the ability for viewers to leave multiparty comments and collaborate with other viewers with two levels of commentary; page comments can be created for general commentary and timeline comments can be placed at any point in the video timeline for topical discussions. Viewers can report abusive comment language, and systems administrators can search for and delete offensive comments.
- Live webcasting
  - Managed webcast—Live webcast authors can set up and produce real-time streaming webcasts for events such as executive presentations, conferences, teacher lectures, and so on.

- View questions—Viewers can optionally post text-based questions to the live webcast authors at any time during an event.
- Reporting
  - Systemwide reporting—Systems administrators have access to a wide variety of activity and content usage reports across the entire Cisco Show and Share content catalog, including: Sitewide traffic, page views, unique visitors, video content viewing activity, report options include date ranges, viewers, authors, and content titles.

For a full listing of product features, see the Cisco Show and Share data sheet at the following URL:
http://www.cisco.com/en/US/prod/collateral/video/ps9339/ps6681/data_sheet_c78-565776.html.

Show and Share Reports is an integrated function within Cisco Show and Share that allows you to track the access and use of video content by end users. With this tool you can:

- Specify time periods—Run reports based on specific dates.
- Analyze content use—Access unique traffic metrics and repeat traffic metrics for each available video or as an aggregated total.
- Monitor referrals—Track top referring pages and links with the corresponding views they generate.
- Understand visitors—Acquire vital statistics about visitors, including operating system, browser, and media plug-in used.
- Receive viewer usage details—Identify what videos have been played by individual users and videos.

With the Cisco Show and Share Reports tool, Cisco Digital Media Suite (DMS) administrators and Cisco Show and Share authors can access a variety of usage information that can facilitate tracking content effectiveness and required user access as part of a larger training compliancy effort, and help shape future content development based on content trends.

Support and Compatibility

Cisco Show and Share will be available as an upgrade to current Cisco Video Portal customers. Cisco Show and Share is supported on the following Cisco server appliances:

- Cisco MCS 7835-H1
- Cisco MCS 7835-H2
- Cisco MCS 7825-H2
- Cisco MCS 7825-H3

Licensing

Cisco Show and Share is purchased as a perpetual license with no restrictions on the number of potential viewers.The application introduces new authoring capabilities that require enabling licenses for each system user defined as an author. The base Cisco Show and Share system has five preinstalled Author licenses. You can purchase additional licenses with various options, including:

- Cisco Show and Share Feature License for up to 10 Authors
- Cisco Show and Share Feature License for up to 50 Authors
- Cisco Show and Share Feature License for up to 500 Authors
- Cisco Show and Share Feature License for up to 1000 Authors

You can purchase additional licenses and install them after the initial implementation.

Specifications

Cisco Show and Share Viewer Requirements	
Browser software	· Windows · Internet Explorer 7.0 or 8.0 · Mozilla 3.5.3 required · Apple Macintosh (support only for Flash and MPEG4/Part 10 VOD files only. Windows Media format not currently supported with the Apple Macintosh). · Safari 3.1.2 · Safari 3.1.2 or Firefox 3.5.3 or later recommended
Adobe Flash plug-in	Adobe Flash v.9, upgrade 3 plug-in or later recommended, v. 10 recommended
Windows Media plug-in	Windows Media 9 or later (required if Windows Media content is offered)
Java Client	v. J1.6.0_13 or later
Minimum supported resolution	1024 x 768
Cisco Show and Share Content Format Support	
Windows Media	Content encoded in the Windows Media format through the Cisco Live Event Module or other third-party applications can be uploaded and viewed with Cisco Show and Share. This content is decoded and played by the Windows Media plug-in. Third-party applications are required to edit content encoded with the Windows Media format. Windows Media content is not currently supported with the Apple Macintosh.
Adobe Flash (.flv)	Content encoded in the Adobe Flash (.flv) format can be uploaded and viewed with Cisco Show and Share. This content is decoded and played by the Adobe Flash plug-in. The integrated Cisco Show and Share Video Editor can be used to edit uploaded Adobe Flash (.flv) content. Content created with the Cisco Show and Share Record a Video function is encoded in the Adobe Flash (.flv) format and is also editable with the Cisco Show and Share Video Editor.

MPEG4/Part 10 (also known as MPEG4/H.264)	Content encoded in the MPEG4/Part 10 format can be uploaded and viewed with Cisco Show and Share. This content is decoded and played by the Adobe Flash plug-in. Additional MPEG4 file support playable by the Adobe Flash player can be obtained at http://www.adobe.com. Third-party applications are required to edit content encoded with the MPEG4/Part 10.File types supported include .mp4, .m4v, and .mp4v.
Cisco Show and Share Server Appliance Options	
Workgroup	The Cisco Show and Share Workgroup server appliance supports up to 200 authors and is ideal for a variety of use cases that feature smaller workgroups within an organization.
Enterprise	The Cisco Show and Share Enterprise server appliance supports organizations that want to enable large numbers of authors to create and publish a variety of content that will be accessed organization wide.

Selected Part Numbers and Ordering Information

Part Number	Product Name	Required or Optional
Cisco Digital Media Manager Ordering Information		
SVR-DMM52K9	Cisco Digital Media Manager	Required
MCS-7835H3-DMS	Cisco MCS 7835-H3 Server Appliance	Required
DMM-LEM52-K9	Cisco Show and Share Live Event Module	Optional
DMM-SNMP52-K9	Cisco DMM SNMP Module	Optional
Cisco Show and Share Workgroup Ordering Information		
SVR-DMM52K9	Cisco Show and Share Workgroup	SVR-DMM52K9
WAVE-574-DMS	Cisco WAVE 574 Server Appliance	WAVE-574-DMS
DVR52-K9	Cisco Show and Share Reports	DVR52-K9
Cisco Show and Share Enterprise Ordering Information		
SVR-ENT-DV52K9	Cisco Show and Share Enterprise	SVR-ENT-DV52K9
MCS-7835H3-DMS	Cisco MCS 7835-H3 Server Appliance	MCS-7835H3-DMS
DVR52-K9	Cisco Show and Share Reports	DVR52-K9

For More Information

http://www.cisco.com/go/dms

Cisco Media Experience & Analytics (MXA)

Media Experience & Analytics (MXA)—Connecting people and information.

Media Experience & Analytics powers breakthrough experiences by connecting people and media across any device and application. As enterprises grow and become more geographically distributed, the need to effectively communicate across all boundaries—geography, organizational, or format (for example, video, documents, people)—is increasingly important.

MXA delivers:

- Any to any video communication and media transformation at scale and in real time;
- Media search and analytics services to unlock the business value of video; and
- An open platform to enable ecosystem and accelerate revenue growth

MXA delivers the benefits of embedding the intelligence for unfettered collaboration into the fabric of the network. Information in any form or format – person, video, documents – is discovered in real time and seamlessly shared across the enterprise.

Cisco Media Experience Engine 3000

The Cisco MXE 3000 Media Experience Engine is a media-processing device that allows you to create different media experiences that you can share across the network from any source to any video endpoint. This network-based appliance also provides postproduction capabilities such as video composition, authoring, watermarking, and text and image overlays.

Key Features and Benefits

- "Any Media-to-Any Device" Experience
  - The Cisco MXE 3000 uses market-leading technology to rapidly and reliably repurpose media assets for different media applications. With unparalleled reliability, it automatically ingests content from any source file, preprocesses it for optimal online viewing quality and experience, simultaneously encodes it into any number of web formats, and delivers finished files to servers or content-delivery networks for viewing.
- Automated workflow

- The Cisco MXE 3000 automates the critical workflow components for producing video-on-demand (VoD) content and scales in output capacity to provide the first automated enterprise-grade VoD production solution. The Cisco MXE 3000 supports precanned templates that you can apply to transcoding jobs, thereby significantly streamlining the operational overhead traditionally associated with media processing.
- Postproduction capabilities
  - The graphics capabilities of the Cisco MXE 3000 synchronizes video and metadata with graphic templates during transcoding to produce dynamic multilayered titles, branded graphics, subtitles, captions, and animations. Overlays are suitable for both small- and large-screen applications.
- Integration with Cisco Digital Media Suite
  - The Cisco MXE 3000 works transparently with a host of media applications. For example, content produced by the Cisco MXE 3000 integrates with the Cisco Digital Media Suite (DMS) solution, allowing you to upload and distribute processed content to a variety of endpoints using Cisco Show and Share.
- Easily deployed appliance—This high-performance, self-contained solution reduces operating overhead for installation and routine maintenance.
- Support for most popular web and mobile formats—Industry's widest array of formats is constantly updated, so your media reaches the broadest possible audience.
- High-performance batch encoding—The Cisco MXE 3000 dramatically reduces the time to produce time-sensitive media.
- Optimized high-quality preprocessing—Proprietary preprocessing architecture creates stunning output quality.
- Unified, automated workflow—The profile system boosts production reliability and output consistency; it simultaneously encodes into all popular formats and data rates.
- Production system integration—The Cisco MXE 3000 ingests content from Mac- and Windows-based postproduction systems, broadcast servers, or asset-management systems.
- Cisco MXE 3000 Folder Attendant—Folder Attendant automates file and metadata submission for any system.
- Metadata preservation—The solution carries valuable metadata through the production process for simplified media labeling, categorization, archive, and search.
- Extensible to custom environment—Application programming interfaces (APIs) let you extend automation to other parts of your unique solution.
- Transparent integration with Cisco DMS—You can view processed media on Cisco Show and Share, and you can systematically catalogue video content libraries to improve search capabilities.
- Advanced graphics overlays
  - Automated workflow for creating on-demand graphics replaces manual, nonlinear editor-based graphics production, freeing systems and personnel for other tasks.
  - You can target overlay content to specific audiences for branding and advertising.
  - The solution scales to provide automated graphics capability to new and existing Cisco MXE systems.
  - Extensible features and capabilities are easily added to existing Cisco MXE deployments.
  - You can produce multiple brands of programs that share identical video and metadata simultaneously, saving both time and money.

Specifications

Supported input formats	Editing systems—Avid; Final Cut Pro; Adobe Premiere AVI; DVD VoB files; QuickTime: All supported formats; MPEG-1: Elementary Stream, System Stream, and Layer II; Audio MPEG-2: Elementary, Program, and Transport Stream; and PCM Audio, Layer II Audio, and AC3 Audio; MPEG-4: Third-Generation Partnership Project (3GPP) and 3GPP2; AVI: All supported formats; DirectShow: All supported formats; WAV; Windows Media; VC-1; H.264
Supported output formats	Windows Media: V7, V8, V9, MPEG-4V3, and ISO-MPEG4-V1; Windows Media Audio: V2, V7, V8, ACELP.net, RealVideo10, RealVideo 9, RealVideo 8, RealAudio 10, and RealAudio 8; QuickTime: All supported codecs; MPEG-4; on2 Flash 8; MP3; WAV
Preprocessing and media preparation	· Video: Blur, bumpers and trailers, color space conversion, contrast enhancement, cropping, de-interlacing and interlacing, fade in, and fade out · In and out trimming: Field frame control, gamma correction, hue rotation, inverse telecine, noise reduction, saturation, support for 16 x 9 and other aspect ratios, add and remove letter boxing and curtaining, temporal smoothing, video frame rate conversion and resizing with antialias filtering watermarking, automated, and thumbnail extraction
Workflow automation	· Job submission · Profile building: An automated system that allows you to quickly apply customized processing settings to new jobs · Monitoring: A summary screen that provides insight into the status of queued jobs · Automated Folder Attendant: A program that facilitates integration between external systems and the Cisco MXE 3000 platform
System features	· Auto job restart · File distribution · Status notification
Environmental Operating Ranges	
Temperature	50 to 95°F (10 to 35°C)
Relative humidity	10 to 90% relative humidity (RH), 82.4°F (28°C) maximum wet bulb temperature, noncondensing

Altitude	10,000 ft (3000m); this value may be limited by the type and number of options installed; maximum allowable altitude change rate is 1500 ft/min (457m/min)
Shock	2 Gs
Vibration	Random vibration at 0.000075 G²/Hz, 10 to 300 Hz, (0.15 Gs nominal)
Acoustic noise	40 dBA
Nonoperating Ranges	
Temperature	-40 to 158°F (-40 to 70°C)
Relative humidity	5 to 95% RH, 101.7°F (38.7°C) maximum wet bulb temperature, noncondensing
Altitude	30,000 ft (9000m) maximum allowable altitude change rate: 1500 ft/min (457m/min)
Shock	15 Gs
Vibration	Random vibration at 0.0005 G²/Hz, 10 to 500 Hz, (0.5 Gs nominal)
Acoustic noise	40 dBA
Power Input (per power supply)	
Range line voltage	90 to 264 VAC
Normal line voltage	110 to 240 VAC
Current	6A (110V); 3A (220V)
Frequency	47 to 63 Hz
Range line voltage	90 to 264 VAC
Normal line voltage	110 to 240 VAC
Output (per power supply)	
Steady state	400W (at 100 VAC and 200 VAC)
Maximum peak	400W (at 100 VAC and 200 VAC)
Maximum heat dissipation	1836 BTU/hr (at 100 VAC); 1706 BTU/hr (at 200 VAC)
Physical Specification	
Form factor	1 rack unit (1RU) - Rack-mount
Dimensions (H x W x D)	1.70 x 17.64 x 26.85 in. (4.32 x 44.80 x 68.19 cm)
Weight	33.50 lb (15.20 kg)
Interfaces	
Ethernet	Dual 10/100/1000
USB	4, total
Regulatory and Standards Compliance	
Safety	UL 60950-1, 1st Edition, 2006-07-07 Part1, CSA C22.2 No.60950-1-03, 1st Edition, 2006-07 Part1
Electromagnetic Compliance (EMC)	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; and GB9254

Selected Part Numbers and Ordering Information

MXE-3000	Cisco MXE 3000 Media Experience Engine Appliance (hardware only)
MXE-3000-LIC	Cisco MXE 3000 Media Experience Engine Software Version 2.0 (software only)

For More Information
http://www.cisco.com/go/mxe

Cisco Media Experience Engine 3500

The Cisco Media Experience Engine (MXE) 3500 is an easily deployed appliance that integrates transparently into the network to deliver a rich set of media-processing capabilities. Designed as a core component of the Cisco Media-Ready Network, the Cisco MXE 3500 provides:

- Comprehensive live and video on demand (VoD)-based transcoding services that allow you to share video content across your network to virtually any type of endpoint
- Innovative postproduction features that transform ordinary video content into stunning studio-quality output
- Cutting-edge speech-to-text transcription services
- Innovative collaboration with other applications delivered by the Cisco suite of media products

The result is a powerful media-processing platform that allows IT administrators to significantly streamline operating costs associated with live media streaming, media production, and distribution.

Key Features and Benefits

- The Cisco MXE 3500 uses market-leading technology to rapidly and reliably repurpose media assets for different media applications. With exceptional reliability, it automatically ingests content from any source file, preprocesses it for optimal online viewing quality and experience, simultaneously encodes it into any number of video formats, and delivers finished files to servers or content-delivery networks for viewing.
- The Cisco MXE 3500 automates the critical workflow components for producing VoD content and scales in output capacity to provide the first automated enterprise-grade VoD production solution. It also supports live transcoding services to enable reliable repurposing of live enterprise TV streams.
- The graphics capabilities of the Cisco MXE 3500 synchronize video and metadata with graphic templates during transcoding to produce dynamic multilayered titles, branded graphics, subtitles, captions, and animations. Overlays are suitable for both small- and large-screen applications. You can apply these graphics to both file-based and live processing jobs.
- The Cisco MXE 3500 delivers innovative voice-recognition technologies to enable speech-to-text services that input speech and convert audio tracks of a video to text that can be layered on to the video as a caption.
- You can integrate the Cisco MXE 3500 transparently with other Cisco media applications. For example, you can upload and distribute both file-based and live content to a variety of endpoints using the Cisco Show and Share application to integrate content produced by the Cisco MXE 3500 with the Cisco Digital Media Suite (DMS).
- The Cisco MXE 3500 also interoperates with the Cisco TelePresence Recording Server to extend the reach of Cisco TelePresence recordings. In addition, the Cisco MXE can process high-definition (HD) video captured by Flip cameras in just a single step.

Note: Product features are subject to change. An updated data sheet showing actual features will be released after first customer shipment.

Specifications

Supported input formats	Editing systems—Avid; Final Cut Pro; Adobe Premiere AVI; DVD VoB (Video over Broadband) files; QuickTime: All supported formats; MPEG-1: Elementary Stream, System Stream, and Layer II Audio; MPEG-2: Elementary, Program, and Transport Stream; PCM Audio; Layer II Audio; and AC3 Audio; MPEG-4: 3GPP and 3GPP2; AVI: Limited supported formats; DirectShow: All supported formats, WAV, Windows Media, VC-1, and H.264; Live input formats: MPEG2ts; Speech-to-text audio formats: wav, mp3, mp4, H264, and QuickTime
Supported output formats	· Windows Media: V7, V8, V9, MPEG-4V3, and ISO-MPEG4-V1 · Windows Media Audio: V2/V7/V8, ACELP.net, RealVideo10, RealVideo 9, RealVideo 8, and RealAudio 10 · RealAudio 8 QuickTime: All supported codecs, MPEG-4, On2 Flash 8, MP3, and WAV · Live output formats: WMV, FLV, and Real Media · Speech-to-text output formats: Text-only transcripts, text with time stamps transcripts, and XML
Preprocessing and media preparation	· Video: Blur, bumpers, and trailers; color space conversion; contrast enhancement; cropping; de-interlacing and interlacing; fade-in; and fade-out · In/out trimming: Field frame control, gamma correction, hue rotation, inverse telecine, noise reduction, saturation, support for 16 x 9 and other aspect ratios, add and remove letter boxing and curtaining, temporal smoothing, video frame-rate conversion and resizing with anti-alias filtering watermarking, automated thumbnail extraction, and speech-to-text captioning

Workflow automation	· Job submission:
	  - Profile building: An automated system that allows you to quickly apply customized processing settings to new jobs
	  - Monitoring: A summary screen that provides insight into the status of queued jobs
	  - Automated Folder Attendant: A program that facilitates integration between external systems and the Cisco MXE 3500 platform

Dimensions and Environmental Operating Ranges	
Physical dimensions (H x W x D)	(1 rack unit [1RU]) 1.7 x 16.9 x 27.8 in. (4.3 X 42.9 X 70.6)cm
Operating temperature	50 to 95°F (10 to 35°C)
Nonoperating temperature	-40 to 149°F (-40 to 65°C)
Operating humidity	5 to 93% noncondensing
Nonoperating humidity	5 to 93% noncondensing
Operating altitude	0 to 10,000 ft (0 to 3,000m); maximum ambient temperature decreases by 1°C per 300m) (984 ft)
Nonoperating altitude	40.000 ft (12,000m)

Regulatory and Standards Compliance

Safety	UL 60950-1 No. 21CFR1040; CAN/CSA-C22.2 No. 60950-1; NOM-NYCE; NOM-10-SCFI-10993; IRAM IEC60950-1; CB IEC60950-1; EN 60950-1; IEC 60950-1; GOST IEC60950-1; SASO SABS/CB IEC6095-1; CCC*/CB GB4943-1995; CNS14336; CB IEC60950-1; AS/NZS 60950-1; GB4943
EMC: Emissions	47CFR Part 15 (CFR 47) Class A; AS/NZS CISPR22 Class A; CISPR2 2 Class A; EN55022 Class A; ICES003 Class A; VCCI Class A; EN61000-3-2; EN61000-3-3; KN22 Class A; CNS13438 Class A
EMC: Immunity	· EN50082-1; EN61000-6-1; EN55024; CISPR24; EN300386; KN 61000-4 Series

Selected Part Numbers and Ordering Information

MXE-3500-K9	Cisco MXE 3500 Media Experience Engine Appliance (hardware only)
MXE-3500-3.0LIC-K9	Cisco MXE 3500 Media Experience Engine Software Version 3.0 (software only)
Optional Software Add-Ons	
MXE-3500-GR-LIC	Graphics
MXE-3500-STT-LIC	Speech to Text
MXE-3500-LIV-LIC	Live Ingest
MXE-3500-LIC-BUN	Graphics, Speech to Text & Live Bundle
MXE-3500-RM-LIC	Resource Manager
MXE-3500-RN-LIC	Resource Node

The MXE 3500 has limited availability and a New Product Hold (NPH) process has been implemented. The details of the NPH process are as follows:

· MPBU and WW Channels have implemented a New Product Hold on MXE products

· NPH is an instrument for MPBU to understand orders and focus resources appropriately on target markets

· NPH was chosen over ATP or Restricted Specialization programs to reduce sales cycles while ensuring successful deployments

· NPH does **not** signal quality or supply chain issues

· NPH will be released when orderability assurance and supportability requirements are met

For More Information

http://www.cisco.com/go/mxe

Cisco Media Experience Engine 5600

The Cisco Media Processing category, which includes the Cisco Media Experience Engine family of products, is a new class of devices designed to expand the reach and usefulness of video as a collaboration and communications tool. As a part of the Cisco any-to-any vision for network-based media processing, the Cisco Media Experience Engine family provides a suite of media adaptation and customization features that allow Cisco and our partners and systems integrators to develop a broad range of media-oriented applications.

The Cisco Media Experience Engine (MXE) 5600 is a modular media-processing platform that combines advanced media-processing features with high performance and scalability to extend the reach of collaboration.

The Cisco Media Processing Platform Software Release 1.0 for the Cisco MXE 5600 offers an extensive feature set for developing and deploying new enterprise-class rich-media communications and collaboration services. Compliant with industry standards for both media formats and network signaling, the Cisco Media Processing Platform Software integrates with enterprise communications infrastructure to address today's enterprise requirements for video-enabled collaboration across a diversity of endpoints and applications. Capitalizing on the high performance and hardware scalability of the Cisco MXE 5600, the software allows deployments to scale to meet the needs of even the largest organizations.

· The software performs real-time media conversion from a broad range of input formats into the formats required by a diversity of destination endpoints.

· It converts codec, bit rate, frame rate, resolution, and aspect ratios, and performs intelligent scaling to maintain high quality regardless of input or output devices.

· Industry-standard interfaces for media transport, call signaling, and network management ease integration with existing applications and infrastructure.

· The extensible architecture allows future enhancements and evolution to support new features and hardware.

· The modular software design capitalizes on the Cisco MXE 5000 series hardware design to provide for flexible, scalable configurations while maintaining high performance.

The first release of the Cisco MXE 5600 software has been optimized for interoperation of Cisco TelePresence conferencing with other high- and standard-definition (HD and SD, respectively) video conferencing endpoints. The Cisco MXE 5600 enables interoperability while optimizing the audio and video quality and improving the overall user experience.

Key Features and Benefits

- Flexibility—Support for broad range of codecs and formats: The Cisco MXE Media Processing Platform Software supports a broad range of media codecs (video, audio, and encapsulation formats), allowing real-time conversion among different standards, depending on the use case and the requirements of the source and destination endpoints.
  - Video processing goes beyond basic transcoding to include conversion of bit rates, frame rates, sampling rates, resolutions, aspect ratios, and scaling.
  - Automatic detection of endpoint capabilities: In many cases, the Cisco MXE Media Processing Platform Software can determine the media requirements (format, codec, bit rate, frame rate, etc.) of a given endpoint, without the user having to manually specify this information.
  - Network-accessible from anywhere: As a network-based system, the capabilities provided by the Cisco MXE Media Processing Platform Software can be accessed by endpoints and applications anywhere in the network.
  - Adaptability to many applications: The Cisco MXE Media Processing Platform Software support for a rich set of media and signaling standards allows you to use the system in a broad range of applications and use cases.
- High performance and scalability
  - Real-time video processing: Using the state-of-the-art digital-signal-processing (DSP) technologies of the Cisco MXE 5000 series hardware, the Cisco MXE Media Processing Platform Software performs real-time processing of media, introducing negligible latency and thereby maintaining the quality of your experience even in live two-way communications and collaboration use cases.
  - Network bandwidth optimization: The Cisco MXE Media Processing Platform Software can convert high-bandwidth media to lower-bit rate formats, conserving network resources while maintaining high quality.
- Standards Compliance
  - Support for broad range of media formats: The media-processing capabilities of the software support a broad range of media codecs and formats, complying with industry standards to simplify interoperability with a range of systems and endpoints.
  - Session Initiation Protocol (SIP) signaling: SIP signaling allows you to use the Cisco MXE 5600 to extend your existing communications infrastructure (for example, Cisco Unified Communications Manager) to support new video-enabled collaboration capabilities.
- Manageability
  - The operations, administration, and management (OA&M) subsystem supports the core fault, configuration, accounting, performance, and security (FCAPS) management functions.
  - Easy-to-use command-line interface (CLI): The Cisco MXE Media Processing Platform Software provides a CLI to ease the process of configuring, deploying, and upgrading Cisco MXE 5000 series systems.
  - Simple Network Management Protocol (SNMP) management: Support for SNMP v3, v2, and v1 and a range of standard and Cisco product specific MIBs allow you to manage the Cisco MXE 5000 series systems with the existing network management infrastructure.
  - Cisco Discovery Protocol: The Cisco MXE Media Processing Platform Software advertises its capabilities on the network with Cisco Discovery Protocol, streamlining system configuration tasks.
- Security—Secure administrator access is through the Secure Shell (SSH) Protocol; administrators can access information about user management and access profiles. Real-Time Control Protocol (RTCP) (Transport Layer Security [TLS]) control information, HTTP traffic (HTTPS), and SIP signaling (TLS) are all encrypted.

Specifications

Note: Product features and specifications are subject to change.

Supported Standards	Description
Media Codecs	
H.264 base profile	Industry-standard video codec, high quality at low bit rates, commonly used in video conferencing
H.264 enhanced	As implemented by Cisco TelePresence conferencing application
Advanced Audio Codec (AAC) LD	Industry-standard low-bit rate audio codec; very low delay
G.711 (a- and mu-law)	Telephony-standard audio codec
G.722	Low-bit rate, high-quality audio codec
Transport Protocols	
RTP (RFC 3550)	Real-Time Transport Protocol: Standard video transport protocol
HTTP/HTTPS (RFCs 2616 and 2818)	Hypertext Transport Protocol (Secure)
TLS (RFC 5246)	Transport Layer Security
Signaling and Control Protocols	
SIP (RFC 3261)	Call-control signaling protocol for control of rich-media sessions
RTCP (RFC 3550)	Real-Time Control Protocol for media control

Selected Part Numbers and Ordering Information

The MXE 5600 has limited availability. Please check the website for latest orderability information.

Cisco Pulse

Cisco Pulse delivers a powerful new way to harness the collective expertise of your workforce, making it quick and easy for employees to find the people and information they need to get their work done.

Unlike traditional directories and expert locators that require manual updates and quickly go stagnant, Cisco Pulse automatically tags pertinent content as it traverses the network to discover hidden know-how your employees can opt to share.

Cisco Pulse will help your workforce become more competitive, responsive, and productive by making it easy to find available experts, form dynamic teams, share valuable information, and navigate rich media. Highlights include:

- Quickly find relevant people and valued information
- See who is available and collaborate with colleagues in a click
- Automatically capture organizational know-how by tagging content as it traverses the network
- Automatically navigate rich media to the spoken word
- Embed Cisco Pulse capabilities in existing applications

Key Features and Benefits

- Automatic expert identification—The Cisco Pulse solution takes the manual labor out of building a directory of experts in your company. Rather than burdening employees with an extra task.
- Improved communication—Cisco Pulse capabilities integrate transparently with existing directories and productivity solutions.
- Improved productivity—Discover in real time the best people and most valuable documents and rich media shared across the organization.
- Integrated into the tools we use—Pulse is based on an open platform methodology and is inserted into the path of all information at the network level and is presented in the existing workflow of the user communities

Specifications

Note: Product features are subject to change.

Supported Standards	Description
Supported Northbound APIs	OpenSocial Web Services, Javascript, and OpenSearch APIs enable integration into many applications including Cisco Quad, Microsoft Sharepoint, and Salesforce.com

Selected Part Numbers and Ordering Information

Product and Part Number	Directory Edition	Text Edition	Rich-Media Edition
Pulse Connect— MCS7845I3-K9-PULSE Software Option— PULSE-CN-K9-R10	1	1	1
Pulse Collect— MCS7845I3-K9-PULSE Software Option— PULSE-CLRM-K9-R10		1 or more	1 or more
Pulse User Licenses— L-PULSE-PAK= License Option— L-LIC-PULSE-DIR	# users		
Pulse User Licenses— L-PULSE-PAK= License Option— L-LIC-PULSE-TX		# users	
Pulse User Licenses— L-PULSE-PAK= License Option— L-LIC-PULSE-RM			# users

As of Q4FY10, Cisco Pulse has limited availability and a New Product Hold (NPH) process has been implemented. The details of the NPH process is as follows:

- MXABU and WW Channels have implemented a New Product Hold on Cisco Pulse products
- NPH is an instrument for MXABU to understand orders and focus resources appropriately on target markets
- NPH was chosen over ATP or Restricted Specialization programs to reduce sales cycles while ensuring successful deployments
- NPH does **not** signal quality or supply chain issues
- NPH will be released when orderability assurance and supportability requirements are met

For More Information

Cisco uBR7225VXR Universal Broadband Router

The Cisco uBR7225VXR is a low-cost entry to midlevel CMTS in a 2RU modular chassis, offering cable operators, multiunit businesses, and Internet service providers (ISPs) an excellent and cost-effective platform for the delivery of high-speed data, voice, and video services. This CMTS platform requires exceptionally low capital investment and minimal setup time, and it supports up to 5000 subscribers. The Cisco uBR7225VXR Universal Broadband Router is a service-enabling, communications-grade CMTS that offers high reliability, modular scalability, and significant investment protection. UBR7225VXR can be easily upgraded to DOCSIS3.0 with the latest UBR-MC88V line card.

Ideal for Companies That Need These Features

Cisco uBR7225VXR
- Low entry-level pricing
- Modularity for capacity growth and minimal setup time
- A higher-capacity platform without the need for the additional capacity of the Cisco uBR10012 or the larger form factor of the Cisco uBR7246VXR

Key Features and Benefits

- The Cisco uBR7225 Universal Broadband Router supports PacketCable 1.1, DOCSIS 1.1, Euro-DOCSIS 2.0, and PacketCable Multimedia, increasing return on investment for converged services and speeding deployment of advanced IP services.
- Upgrade path to DOCSIS3.0 through the use of 8x8 line card
- The new low-cost line cards (part numbers UBR-E-28U and UBR-E-16U) lead to lower capital expenditures.
- This low-cost entry-level CMTS makes efficient use of capital expenditures while maintaining modularity for capacity growth.
- The Cisco uBR7225 provides up to 4 downstream and 16 upstream ports in a 2RU form factor.
- The router provides DOCSIS, Euro-DOCSIS, and J-DOCSIS support on one line card for operational savings and lower capital expenditures.

Specifications

Compact Design suitable for rack-mount (2-RU) pr desktop installation	Dimensions of 3.5 x 17.32 x 21.8 in. (8.89 x 44.9 x 55.37 cm) (H x W x D) ; 45 lb (20.4 kg) ; Front, mid, and rear mountable in a 19 in. EIA standard rack ; Depth fully loaded from the tip of cable management bracket to the tip of the UBR-NPE-G1 handle is 26.1 in. (66.29 cm)
Modulation	Downstream—64-QAM, 256-QAM ; Upstream—QPSK 8-, 16-, 32-, 64-QAM
Downstream frequency range	DOCSIS—6 MHz Annex B, 70–1G MHz; Euro-DOCSIS—8 MHz Annex A, 70–1G MHz ; J-DOCSIS—6 MHz Annex B extension, 70–860 MHz
Upstream frequency range	DOCSIS—6 MHz Annex B, 70–1G MHz; Euro-DOCSIS—8 MHz Annex A, 70–1G MHz ; J-DOCSIS—6 MHz Annex B extension, 70–860 MHz
Compatible Cisco Network Processing Engines (NPEs)	The Cisco uBR7225VXR must contain one uBR7200-NPE-G2 (or uBR7200-NPE-G1) processor that must have at least 1 GB of DRAM (512 MB for uBR7200-NPE-G1); there is an upgrade option of a 2GB memory module that can be configured to be shipped with uBR7200-NPE-G2 to ensure best performance. FE/GE ports availability—3 GE ports (UBR-NPE-G2/G1). Cisco UBR-MC88V is only supported by UBR-NPE-G2.
Line cards with integrated upconverters/modulators (cable plant interfaces)	New Modular design Line cards supported: • UBR-MC88V Physical: • Occupies a single slot in the Cisco uBR7225VXR chassis • Maximum 2 line cards per uBR7225VXR chassis • Hot-swappable; no slot dependency • Dimensions (H x W x D): 1.4 x 15.154 x 11.531 in. (3.55 x 38.49 x 29.29 cm) Weight: • 6.06lbs (2.749 kg) Power consumption: • 90 watts (307 BTUs per hour) at 25°C • Integrated upconverter specifications • High-level output—+62 dBmV • Optimized for 64 and 256 quadrature amplitude modulation (QAM) • Software configurable from 52 to 62 dBmV output power in units of dBmV

Included AC power supply	Single or dual redundant power supplies • ; 100 to 240 VAC input, 50/60 Hz frequency; 5.5 A maximum AC input current; 300W (maximum) output DC or 25 @ 11.28V; AC-input cable: 18-QEG4 3-wire cable with 3-lead IEC-320 receptacle on power supply end and country-dependent plug on power source end
Software Compatibility	The Cisco uBR7225VXR is supported in Cisco IOS Software Release 12.2SB, which includes PacketCable Multimedia Specification (PCMM), admission control, advanced-mode DOCSIS Set-Top Gateway (DSG), and Cisco Service Independent Intercept (SII) features.

For More Information

http://cisco.com/en/US/products/ps8474/index.html

Cisco uBR7246XVR Universal Broadband Router

The Cisco uBR7246VXR Universal Broadband Router, a member of the Cisco uBR7200 Series, provides a single, Layer 3 routing, multiservice, scalable platform that gives cable companies the ability to deliver IP data, voice, and video services to DOCSIS, Euro-DOCSIS, and PacketCable-compliant cable modems, set-top boxes, and multimedia terminal adapters. uBR7246VXR can be easily upgraded to DOCSIS with the latest uBR-MC88V line card.

Ideal for Companies That Need These Features

Cisco uBR7225VXR

- Flexible port expansion for multiservice deployment options
- Service support for up to 10,000 subscribers per chassis with 3.2 Gbps back plane (numbers are for reference only. Actual numbers for specific systems will vary depending on network/service loading, traffic, and other parameters.)
- Powerful processor and edge intelligence; field-proven and carrier-class reliability
- Support for multimedia services
- High tolerance to hybrid fiber coaxial (HFC) network and spectrum noise

Key Features and Benefits

- Modular design—1,000 to 10,000 subscribers supported based on different configurations
- High availability for low cost maintenance
- Advanced physical layer (PHY)
- Full DOCSIS3.0 and Euro-DOCSIS3.0 compliance; Euro-DOCSIS 2.0 (A-TDMA only); DOCSIS 1.1 qualified, and PacketCable 1.1 qualified; tComLabs qualified to Euro-DOCSIS 1.0, 1.1, and 2.0 (A-TDMA only) specifications; also supports Advanced Mode DSG.
- Powerful Layer 3 routing intelligence and sophistication
- Upgrade path to DOCSIS3.0 through the use of Cisco uBR-MC88V line card

Specifications

Number of Cable Line Card Slots	4
Supported Cable Line Cards (Cable Plant Interfaces)	uBR7200 Series MC28U Broadband Processing Engines; uBR7200 Series MC88V Broadband Processing Engines
Port Adapter Slots (LAN/WAN Interfaces)	2
Supported PA categories	Ethernet Serial, HSSI, ATM, POS, DPT
Power Supply Slots	2
Input/Output (I/O) controller	uBR7200-I/O-2FE/E, not required if uBR7200-NPE-G1 or uBR-NPE-G2 are installed in the system
I/O flash options for PCMCIA slots	Flash disk (48 MB); Flash disk (128 MB)
Network Processing Engines (NPE)	uBR7200-NPE-G2, UBR7200-NPE-G1
Add-on processor memory options	512 MB or 1 GB for uBR7200-NPE-G1 1 GB or 2 GB for uBR7200-NPE-G2
Router Bandwidth	3.2 Gbps

For More Information

http://www.cisco.com/en/US/products/hw/cable/ps2217/index.html

Cisco uBR10012 Universal Broadband Router

The Cisco uBR10012 Universal Broadband Router addresses the volume, capacity, and complexity of large cable headends or distribution hubs. The router delivers the highest level of service availability and capacity of any production cable modem termination system (CMTS) available today. It employs a mix of distributed, centralized, and parallel processing to facilitate consistently high, real-world performance. The Cisco uBR10012 is CableLabs qualified to PacketCable 1.1 and DOCSIS 2.0 specifications. The product is also qualified for EuroDOCSIS 2.0, and DOCSIS 3.0 Bronze specifications and full DOCSIS3.0 compliance.

The Cisco uBR10012 Universal Broadband Router powers the world's largest DOCSIS 3.0 downstream channel bonding install base, with more than 1 million revenue-generating subscribers and counting. The combination of the 20 downstream cards, 20 upstream RF cards, the 24 downstream channel bonding cards (wideband shared port adapter [SPA]), and the DOCSIS Timing Interface (DTI) card on the Cisco uBR10012, allows the deployment of DOCSIS 1.1 and 2.0 modems along with the new DOCSIS 3.0 modems for downstream channel bonding over low-cost video-on-demand (VoD) edge quadrature-amplitude-modulation (QAM) ports.

With new hardware support of the Cisco 10000 Performance Routing Engine 4 (PRE4) processor, the 10 Gigabit Ethernet WAN card, and the 6-wideband SPA carrier starting in January 2009, the Cisco uBR10012 Universal Broadband Router provides a maximum of 304 downstream ports per chassis to meet ever-increasing IP data, voice, and video bandwidth needs.

Ideal for Companies that Need These Features

Cisco uBR10012
- Large subscriber bases
- Edge routing or aggregation of DOCSIS traffic
- High-end throughput, capacity, and service handling
- Advanced multimedia service delivery
- Sophisticated Layer 3 routing intelligence
- Complex network interface configurations

Key Features and Benefits
- Powerful processing and throughput
- Five 9's availability
- Highest density and capacity—5,000 to 64,000 subscribers
- Scalable, real-world proven performance
- A-TDMA and DOCSIS 2.0 support
- S-CDMA and full DOCSIS3.0, EuroDOCSIS3.0 support
- Advanced intelligence features
- With UBR-MC20x20V line card, Cisco offers pay-as-you-grow flexibility with software licensing for downstream channels (0DS, 5DS, 10DS, 15DS, and 20DS SW licenses are offered

Specifications

Modular Slots	Flash—48 MB; System—128 MB
Supported Cards	Cisco MC5X20H Broadband Processing Engine (BPE), Cisco MC20X20H Broadband Processing Engine (BPE); Cisco 24-port Wideband Downstream Shared Port Adapter; Cisco 5-Port Gigabit Ethernet Shared Port Adapter; Cisco 1-Port 10GE LAN-PHY Shared Port Adapter, and Gigabit Ethernet Half-Height (HH-1GE) network uplink card
Processor Type	Parallel Express Forwarding (PXF)
Flash Memory	64 MB (default); 128 MB (maximum)
DRAM Memory	1 GB DRAM minimum
Software Supported	Cisco IOS Software Release 12.2(33)SCD recommended; Cisco IOS Software Release 12.2(33)SCC; Cisco IOS Software Release 12.3(9)BC minimum to support the Cisco PRE-2, Cisco IOS Software Release 12.3(13)BC minimum to support the Cisco Gigabit Ethernet Half-Height Line Card, Cisco IOS Software Release 12.3(17)BC2 minimum to support the Cisco MC5X20H BPE; Cisco IOS Software Release 12.2(33)SCB minimum to support the Cisco Performance Routing Engine 4, Cisco 10000 Series SPA Interface Processor-600, Cisco 5-Port Gigabit Ethernet Shared Port Adapter, and Cisco 1-Port 10GE LAN-PHY Shared Port Adapter.
Power Supply	DC, AC
Hot-Swappable	Yes
Backplane Capacity	51.2 Gbps
Dimensions (H x W x D)	31.25 x 17.2 x 22.75 in. (79.4 x 43.7 x 57.8 cm)—18 rack units (RU) Mounting: 19 in. rack mountable (front or rear), 2 units per 7 ft. rack. Note: Mounting in 23 in. racks is possible with optional third-party hardware
Weight	235 lb. (106.6 kg) fully-configured chassis

Selected Part Numbers and Ordering Information

Cisco uBR10012 Series Chassis Bundles	
U10012-1D5X20H-C	UBR10012 with PRE-2, DTCC and 1 MC5X20H card
U10012-1M5X20H-C	UBR10012 with PRE-2, TCC and 1 MC5x20 Cards
U10012-2M5X20H-HA	UBR10012 with 2 PRE-2, 2 TCC and 2 MC5x20 Cards
U10012-2D5X20H-HA	UBR10012 with 2 PRE-2, 2 DTCC and 2 MC5X20H cards
Cisco uBR10012 Series Pricing Bundles	
UBR10-P2TG	Bundle incl. 1 PRE2, 1 TCC+, 1 HH-1GE, 1 HH-CARRIER
UBR10-P2TG-HA	Bundle incl. 2 PRE2, 2 TCC+, 2 HH-1GE, 1 HH-CARRIER
UBR10-P2DTG	Bundle incl. 1 PRE2, 1 DTCC+, 1 HH-1GE, 1 HH-CARRIER
UBR10-P2DTG-HA	Bundle incl. 2 PRE2, 2 DTCC, 2 HH-1GE, 1 HH-CARRIER
UBR10-P2DT5G	Bundle incl. 1 PRE2, 1 DTCC+, 1 4-SPA SIP, 1 5x1 GE SPA
UBR10-P2DT5G-HA	Bundle incl. 2 PRE2, 2 DTCC, 2 4-SPA SIP, 2 5x1 GE WAN SPA
UBR10-P4DT5G	Bundle incl. 1 PRE4, 1 DTCC+, 1 4-SPA SIP, 1 5x1 GE WAN SPA
UBR10-P4DT5G-HA	Bundle incl. 2 PRE4, 2 DTCC, 2 4-SPA SIP, 2 5x1 GE WAN SPA
UBR10-P4DT10G	Bundle incl. 1 PRE4, 1 DTCC+, 1 4-SPA SIP, 1 1x10 GE WAN SPA
UBR10-P4DT10G-HA	Bundle incl. 2 PRE4, 2 DTCC, 2 4-SPA SIP, 2 1x10 GE WAN SPA
UBR-5G-SIP-D3SPA	UBR10K bundle, includes 1 5 GE SPA, 1 DS SPA, 1 SPA carrier
UBR-10G-SIP-D3SPA	UBR10K bundle, includes 1 10 GE SPA, 1 DS SPA, 1 SPA carrier
UBR-4MC20X20V-5D	4 for 3 Bundle for 5x20V. Must order with 10K chassis
UBR-4MC20X20V-20D	4 for 3 Bundle for 20x20V. Must order with 10K chassis
Cisco uBR10012 Series Line Cards	
SPA-24XDS-SFP=	24-port uBR10012 Wideband Downstream Shared Port Adapter
UBR10-2XDS-SIP	Cisco uBR10012 Wideband Downstream-only SPA Carrier Card
UBR10-2XDS-SIP=	Cisco uBR10012 Wideband Downstream-only SPA Carrier Card
SPA-24XDS-SFP	24-port uBR10012 Wideband Downstream Shared Port Adapter
UBR10-MC5X20H-D	uBR10K High-Performance Card, 5DS w/upx, 20US, Spec An
UBR10-MC5X20H-D=	uBR10K High-Performance Card, 5DS w/upx, 20US, Spec An
UBR10-4MC5X20H-D	4 UBR10-MC5X20H-D Line cards
UBR-MC20X20V-20D	Cisco 20x20V DOCSIS 3.0 Broadband Processing Engine — Base hardware + 20 downstream and 20 upstream license
UBR-MC20X20V-5D	Cisco 20x20V DOCSIS 3.0 Broadband Processing Engine — Base hardware + 5 downstream and 20 upstream license
UBR-MC20X20V-0D	Cisco 20x20V DOCSIS 3.0 Broadband Processing Engine — Base hardware + 0 downstream and 20 upstream license
L-UBR-SWLIC-5DS	+5 downstream upgrade license
L-UBR-SWLIC-15DS	+15 downstream upgrade license
L-UBR-SWLIC-20DS	+20 downstream upgrade license
L-UBR-SWLIC-5DS	+5 downstream upgrade license
10000-SIP-600	Cisco 10000 Series SPA Interface Processor-600
10000-SIP-600=	Cisco 10000 Series SPA Interface Processor-600
SPA-5X1GE-V2	Cisco 5-Port Gigabit Ethernet Shared Port Adapter
SPA-5X1GE-V2=	Cisco 5-Port Gigabit Ethernet Shared Port Adapter
SPA-1X10GE-L-V2	Cisco 1-Port 10GE LAN-PHY Shared Port Adapter
SPA-1X10GE-L-V2=	Cisco 1-Port 10GE LAN-PHY Shared Port Adapter
Cisco uBR10012 Series Processors	
ESR-PRE2/R	Performance Routing Engine, 1GB DRAM, 64MB Flash

ESR-PRE2=	Performance Routing Engine
ESR-PRE4	Performance Routing Engine 4
ESR-PRE4=	Performance Routing Engine 4
Cisco uBR10012 Series Coax Cables	
CAB-RFSW520QTIMF2	Quad-shield RF cable bundle, MC520 to HFC plant, 3m
CAB-RFSW520QTIMF2=	Spare quad-shield RF cable bundle, MC520 to HFC plant, 3m
CAB-RFSW520QTPMF2	RF cable bundle, MC520/RFSW to HFC plant, 3m, with UCH2
CAB-RFSW520QTPMF2=	Spare RF cable bundle, MC520/RFSW to HFC plant, 3m, with UCH2
CAB-RFSW520QTIMM2	Quad-shield RF cable bundle, MC520 to RF switch, 1m, with UCH2
CAB-RFSW520QTIMM2=	Spare quad-shield RF cable bundle, MC520 to RF switch, 1m, with UCH2

For More Information

http://www.cisco.com/en/US/products/hw/cable/ps2209/index.html

Cisco uBR 3x10 RF Switch

The Cisco uBR 3x10 RF Switch is an integral part of the Cisco uBR10012 High Availability solution. It offers a fully redundant system that helps cable operators exceed PacketCable system availability, minimize service disruptions, and simplify operations.

Ideal for Companies that Need These Features

Cisco uBR 3x10 RF
- Advanced services such as VoIP, DSG STB deployments, and highly available commercial services
- Carrier-class N+1 network and service architecture
- High-density high-availability service support
- Scalability to tens of thousands of subscribers

Key Features and Benefits

- N+1 redundancy
- Hot swap capability of all RF switch modules with no RF service disruption
- Support for DOCSIS and Euro-DOCSIS RF performance specifications
- Comprehensive set of high availability features
- Redundancy Readiness Verification, for proactive redundancy health monitoring and reporting
- Fully passive working path
- Position-sensing latching relays
- Unmatched port density and flexibility

Specifications

Input Power Requirements	AC:—100 to 240 VAC, 50 to 60 Hz, operating range: 90 to 254 VAC; DC—-48 to -60 VDC, operating range: 140.5 to -72 VDC, 200 mVpp ripple/noise
Unit Control	10BaseT Ethernet—SNMP; Switching time from active (working) to standby (protect)—150 mS maximum after SNMP command
Connectors	RF connectors—MCX; AC power—IEC320 type; DC power—Three terminal block; Ethernet—RJ-45; RS-232 Bus—9-pin male D
RF Requirements	Input/output impedance: 75 ohms; maximum RF input power: +15 dBm (63.75 dBmV); Switch type: Electro-mechanical, absorptive for working path, non-absorptive on the protect path; Switch setting time per switch module: 20 ms maximum; Downstream frequency range: 54 to 860 MHz; Typical downstream insertion loss: +/- 1.1 dB from CMTS to cable plant; +/- 2.1 dB from protect to cable plant; 5.5 dB from working to output; 8.0 dB from, protect to output Downstream insertion loss flatness: +/- 1.1 dB from CMTS to cable plant; +/- 2.1 dB from protect to cable plant Downstream output return loss: > 15.0dB at <450 MHz, > 12.0 dB at >= 450 MHz; Downstream input return loss: > 15.0 dB; Downstream isolation: > 60 dB from channel to channel in working mode; > 52 dB from CMTS to protect when in protect mode; Upstream frequency range: 5 to 70 MHz; Typical upstream insertion loss: 4.1 dB from cable plant to CMTS; 5.2 dB from cable plant to protect; Upstream insertion loss flatness: +/- 0.4 dB from cable plant to CMTS; +/- 0.6 dB from cable plant to protect; Upstream input return loss: > 16 dB; Upstream isolation: >60 dB from channel to channel in working mode: > 60 dB from CMTS to protect when in protect mode; Protect mode: CMTS return loss > 10 dB, cable plant return loss: > 10 dB
Reliability	41,000 MTBF @ +50C as calculated by BellCore 5, 80 percent confidence factor
Dimensions (H x W x D)	5.25 x 17.5 x 14.8 in. (13.335 x 44.45 x 37.592 cm)
Environmental	Operational temperature range—0 to +40C; Operating temperature range—-5 to +55C

Weight	36 lbs.

Selected Part Numbers and Ordering Information

Cisco RF Switch Series	
UBR-RFSW	N+1 RF Switch for CMTS Routers
Cisco RF Switch Series Cables	
CAB-RFSW520QTPMF2	Cisco RF cable bundle, MC520/RFSW to HFC plant, 3m, with UCH2
CAB-RFSW520QTPMF2=	Spare RF cable bundle, MC520/RFSW to HFC plant, 3m, with UCH2
CAB-RFSW520QTIMM2	Quad-shield RF cable bundle, MC520 to RF switch, 1m, with UCH2
CAB-RFSW520QTIMM2=	Spare quad-shield RF cable bundle, MC520 to RF switch, 1m, with UCH2

For More Information

http://www.cisco.com/en/US/products/hw/cable/ps2929/index.html

Cisco Services

Realize the full business value of your technology investments faster with intelligent, personalized services from Cisco and our partners.

Backed by deep networking expertise and a broad ecosystem of partners, Cisco Services enable you to successfully plan, build, and run your network as a powerful business platform.

Whether you are looking to quickly seize new opportunities to meet rising customer expectations, improve operational efficiency to lower costs, mitigate risk, or accelerate growth, we have a service that can help you.

For more information about Cisco Services, visit http://www.cisco.com/go/services.

Chapter 8: Optical Networking

This chapter provides only a subset of Cisco products and part numbers.

Optical Networking At-a-Glance

Product	Features	Page
METRO CORE		
Cisco ONS 15600 SONET/SDH Multiservice Switching Platform	· Solution allows service providers to transparently integrate their metropolitan (metro) core and metro edge networks while dramatically reducing initial turn-up costs · Provides 320 gigabits of switching, grooming, aggregation, and bandwidth-management capacity in a single shelf · Platform offers any service, any port (ASAP) service cards that hold up to four pluggable I/O (ASAP 4-PIO or ASAP-1-PIO modules, each capable of supporting up to four 2.5-Gbps SFP optics or one 10-Gbps XFP optics capable of both fixed-rate and multirate formats · Combines the functions of multiple metro systems, including SONET/SDH multiplexers and digital cross-connect network elements · Provides carrier-class availability, serviceability, and management · Scalable, easy-to-use platform supports all metro topologies	8–2
Cisco ONS 15454 SONET/SDH Multiservice Provisioning Platform	· Integrates the functions of traditional SONET or SDH network elements with next-generation SONET/SDH transport and multiservice interfaces · Solution combines multiplexing, optical networking, and switching functions in one easy-to-use platform that supports all metro topologies	8–2
METRO, REGIONAL, AND LONG-HAUL DWDM		
Cisco ONS 15454 Multiservice Transport Platform (MSTP) ***NEW UPDATES***	· Solution delivers integrated, intelligent dense wavelength-division multiplexing (DWDM) functions, including fully reconfigurable optical add/drop multiplexer (ROADM) technology for metropolitan, regional networks, and long-haul networks (from 32 to 80 wavelengths per node) · Offers a compact 40 wavelengths ROADM solution 2 or 4 degrees, based on the Single Module ROADM technology and 2-slot / 6-slot compact chassis · Offers multiservice time-division multiplexing (TDM) and data aggregation over 2.5- and 10-Gbps wavelengths · Video services include D1 and high-definition television (HDTV)	8–3
Cisco ONS 15216 Metropolitan/Regional DWDM System and Transmission Families	· Supports 32 ITU-grid wavelengths launched by the Cisco ONS 15454 MSTP, ONS MSPP, ONS 15600, ONS 15310, or alien wavelengths and creates a more desirable per-wavelength cost · Optical add/drop multiplexer (OADM) · Cisco ONS 15216 Erbium-Doped Fiber Amplifier (EDFA)-3 Optical Amplification · Compact, modular design	8–3
METRO EDGE ACCESS		
Cisco ONS 15310-MA SONET Multiservice Platform	· Offers high-density aggregation and transports up to 168 DS-1, 6 DS-3, or 32 Layer 1 or Layer 2/3 Ethernet ports (10, 100, and 1000 Mbps) · Offers tremendous service flexibility, supporting DS-1, DS-3/EC1, Layer 1, and Layer 2/3 Ethernet, and Small Form-Factor Pluggable (SFP)-enabled optics for OC-3, OC-12, and OC-48. · Environmentally hardened design supports up to 99.999-percent reliability for both access and edge networks · Platform comes in a compact 6-rack unit (6RU) form factor	8–3
Cisco ONS 15310-MA SDH Multiservice Platform	· Offers high-density aggregation and transports up to 126 E-1, 6 E-3/DS-3, or 32 Layer 1 or Layer 2/3 Ethernet ports (10, 100, and 1000 Mbps) · Offers tremendous service flexibility, supporting E-1, E-3/DS-3, Layer 1, and Layer 2/3 Ethernet, and Small Form-Factor Pluggable (SFP)-enabled optics for STM-1, STM-4, and STM-16 · Environmentally hardened design supports up to 99.999-percent reliability for both access and edge networks · Platform comes in a compact 6-rack unit (6RU) form factor	8–4
Cisco ONS 15310-CL SONET Multiservice Platform	· Compact 1RU single-system controller design is optimized for data and TDM services over protected SONET transport for the customer location · 1RU AC or dual-DC power chassis · Single system controller, timing, and synchronization · Two SFP optical ports for rings · 21 DS-1 and 3 DS-3 ports · One expansion slot · Fan cooling	8–4
Cisco ONS 15305 SDH Multiservice Provisioning Platforms (MSPPs)	· Ultra-compact integrated systems that extend next-generation optical networks (access nodes or customer premises equipment [CPE]) · Low-cost access and CPE platform	8–4
OPTICAL NETWORK MANAGEMENT		

Cisco Transport Manager 9.2 **NEW UPDATES**	· Advanced optical transport domain manager that delivers element and network management layer functions · Offers efficient management of the entire Cisco ONS product family. · Provides a resilient, adaptable, and integrated carrier-class element-management-system (EMS) solution. · GUI-based management system makes advanced management capabilities such as A-to-Z circuit provisioning easy to learn and use. · Solution is cost-effective, using industry-standard platforms such as Sun Solaris, Oracle, and Microsoft Windows to fit smoothly into various IT environments, solution offers a variety of northbound interface options (for example, Simple Network Management Protocol [SNMP], TL1, and CORBA)	8–4

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco ONS 15600 SONET/SDH Multiservice Switching Platform

The Cisco ONS SONET/SDH 15600 Multiservice Switching Platform (MSSP) provides flexibility in designing next-generation metropolitan (metro) networks. Fully engineered and optimized for metro applications, the Cisco ONS 15600 MSPP simplifies and revolutionizes bandwidth management in the metro core by allowing service providers to transparently integrate their metro core and metro edge networks, while dramatically reducing initial turn-up costs. The any service, any port (ASAP) interface cards of the Cisco ONS 15600 provide 1 to 16 ports of capacity per slot to aggregate and transport mission-critical regional and metro-area traffic using a modular, flexible, and scalable design that allows single- and multiple-rate optics from OC-3/STM-1 to OC-192/STM-64, including Gigabit Ethernet SFP optics.
Delivering scalability to 960 Gbps of traffic in a single rack, it complements the market-leading Cisco ONS 15454 MSPP by taking advantage of its proven architecture and operating software, allowing service providers to dramatically simplify their metro networks and realize immediate cost, space, and operational benefits. The Cisco ONS 15600 MSPP provides complete integration of metro core and edge networks for service provisioning and network management.

For More Information
http://www.cisco.com/go/ons15600

Cisco ONS 15454 SONET/SDH Multiservice Provisioning Platform

The Cisco ONS 15454 Multiservice Provisioning Platform (MSPP) provides key building blocks in optical networks because of its unprecedented transport performance and economics. It offers supercharged transport capability by combining the best of traditional SONET/SDH time-division multiplexing (TDM) and statistical multiplexing in single units. The Cisco ONS 15454 aggregates traditional facilities such as E-1/DS-1, E-3/DS-3, VC-3/VC-4/STS-1, STM-1/OC-3, STM-4/OC-12, and STM-16/OC-48, including multi-wavelength dense wavelength-division multiplexing (DWDM) optics, and also supports data interfaces for 10 Gigabit Ethernet, 100 Gigabit Ethernet, and Gigabit Ethernet data and video. This drastically improved efficiencies in the transport layer and breakthrough cost savings for initial and life-cycle deployment. A single Cisco ONS 15454 shelf can support combinations of STM-1/OC-3/c, STM-4/OC-12/c, STM-16/OC-48/c, and STM-64/OC-192. It also offers an international optical transport solution that combines the best of traditional SONET/SDH time-division multiplexing (TDM) and statistical multiplexing in a single platform.

For More Information
http://www.cisco.com/go/ons15454

Cisco ONS 15454 Multiservice Transport Platform (MSTP)

The Cisco ONS 15454 Multiservice Transport Platform (MSTP) sets the industry benchmark for metropolitan and regional dense wavelength-division multiplexing (DWDM) solutions by using proven Cisco MSPP networking technologies to deliver simple, fast, and intelligent DWDM capabilities and lower capital expenditures (CapEx) and operating expenses (OpEx). A metropolitan network, being close to or on a customer's premises -- unlike its long-haul counterpart -- requires support for a great diversity of service interfaces. The service interfaces allow network providers to offer new tariffs and allow enterprise customers to natively transport a wide variety of services over a common transport network without unnecessary conversion stages and equipment. Additionally, a wide service mix simplifies the planning for services. The Cisco ONS 15454 MSTP, with its multiservice provisioning platform (MSPP) capabilities, supports a broad range of standards-based services in a single platform.

The Cisco ONS 15454 MSTP, extends the traditional point to point service capability of the DWDM into sub-wavelength grooming with its next generation aggregation cards. Sub-wavelength grooming is available at both TDM and data level (OC3/STM1, OC12/STM4, OC48/STM16, GE) enabling lambda sharing across multiple services in mesh networks, keeping the high availability characteristic, and complementing Carrier Ethernet over DWDM transport.

Critical to offering a wide service mix is the ability of a DWDM system to offer the level of transparency required by the service. The ultimate in network-management flexibility is achieved through an industry-leading, fully reconfigurable optical add/drop multiplexer (ROADM) that allows 0 to 32, 40, 72, or 80 channels of pass-through or add/drop, A-to-Z wavelength provisioning, and full, real-time power monitoring of each individual wavelength. The Cisco ONS 15454 MSTP solution offers the choice of multiservice aggregation, wavelength aggregation, and wavelength transport, combined with integrated, intelligent DWDM transmission, in a single platform to optimize network costs for any mix of service types. Using digital-wrapper technology (defined in ITU-T G.709) facilitates transparency while still allowing enhanced wavelength management and providing extended optical reach with integrated Forward Error Correction (FEC). The Cisco ONS 15454 MSTP is also used to build IP over DWDM (IPoDWDM) architectures. Cisco routers with integrated optics such as the Cisco CRS-1 Carrier Routing System (10 Gigabit Ethernet and OC-768), Cisco 12000 Series (10 Gigabit Ethernet), Cisco ASR9000 Series (10 Gigabit Ethernet) and Cisco 7600 Series (10 Gigabit Ethernet) have integrated, ITU-grid optics that allow for direct connection to the Cisco ONS 15454 MSTP without using external transponders.

For More Information
http://www.cisco.com/en/US/products/hw/optical/ps2006/ps5320/index.html

Cisco ONS 15216 Metropolitan/Regional DWDM System

The Cisco ONS 15216 Metropolitan/Regional DWDM System supercharges wavelength services by supporting up to 32 ITU-grid wavelengths, and provides unprecedented transport flexibility with optical filtering, optical add/drop multiplexer (OADM), optical performance monitoring, and amplification. It allows service providers to deliver more services per wavelength and more wavelengths per fiber.

The Cisco ONS 15216 Metropolitan Dense Wavelength-Division Multiplexing (DWDM) FlexLayer filter solution is an ultraflexible filter architecture that allows cable multiple system operators and service providers to build "pay-as-you-grow" networks with the flexibility to upgrade in service without preprovisioning channels that are not required. This approach creates a more desirable per-wavelength cost.

The FlexLayer architecture allows for deployment of point-to-point, point-to-multipoint, ring, bus, and tree-and-branch architectures. These networks can be deployed as unprotected or protected networks, and they can also be deployed in transmit-only applications for broadcast networks. This flexibility is inherent in the design of the FlexLayer architecture.

For More Information
http://www.cisco.com/en/US/products/hw/optical/ps1996/ps1999/index.html

Cisco ONS 15310-MA SONET Multiservice Platform

The Cisco ONS 15310-MA SONET Multiservice Platform is a compact but high-density SONET device capable of multiservice time-division multiplexing (TDM) and data aggregation and transport. The Cisco ONS 15310-MA offers tremendous service flexibility, supporting DS-1, DS-3/EC-1, Layer 1, and Layer 2/3 Ethernet (10, 100, and 1000 Mbps), and Small Form-Factor Pluggable (SFP)-enabled optics for OC-3, OC-12, and OC-48. The Cisco ONS 15310-MA is a hardened design, and supports up to 99.999-percent reliability for both access and edge networks. The Cisco ONS 15310-MA is a carrier-class multiservice provisioning platform (MSPP) that efficiently switches Ethernet and TDM traffic for use in metropolitan and regional optical networks. The Cisco ONS 15310-MA can be managed using the Cisco Transport Controller element management system and Cisco Transport Manager for network management.

Cisco ONS 15310-MA SDH Multiservice Platform

The Cisco ONS 15310-MA SONET Multiservice Platform is a compact but high-density SDH device capable of multiservice time-division multiplexing (TDM) and data aggregation and transport. The Cisco ONS 15310-MA SDH offers tremendous service flexibility, supporting E-1, E-3/DS-3, Layer 1, and Layer 2/3 Ethernet (10, 100, and 1000 Mbps), and Small Form-Factor Pluggable (SFP)-enabled optics for STM-1, STM-4, and STM-16. The Cisco ONS 15310-MA SDH is a hardened design, and supports up to 99.999-percent reliability for both access and edge networks. The Cisco ONS 15310-MA is a carrier-class multiservice provisioning platform (MSPP) that efficiently switches Ethernet and TDM traffic for use in metropolitan and regional optical networks. The Cisco ONS 15310-MA can be managed using the Cisco Transport Controller element management system and Cisco Transport Manager for network management.

For More Information

http://www.cisco.com/go/ons15300

Cisco ONS 15310-CL SONET Multiservice Platform

By extending the metropolitan (metro) edge to customer premises and providing direct high-speed LAN connectivity, the Cisco ONS 15310-CL SONET Multiservice Platform allows service providers to cost-effectively offer scalable, high-speed data services over their transport networks. For the enterprise, the Cisco ONS 15310-CL offers the efficiency, scalability, and high availability to meet the bandwidth demands of the mission-critical e-business infrastructure. These features are available without implementing new technology or upgrading the existing transport network infrastructure.

Optimized for the customer location, this evolutionary platform is based on the same technology as the industry-leading Cisco ONS 15454, Cisco ONS 15600 and ONS 15310-MA, supporting high optical bandwidth, and it can support DS-1, DS-3, and Layer 1/2 10/100 Ethernet. The Cisco ONS 15310-CL also provides comprehensive STS- and VT-level bandwidth management and integrated data switching.

The integrated multiservice optical networking functions of the Cisco ONS 15310-CL dramatically reduce service-delivery costs. Packaged in a 1-rack unit (1RU), industrially temperature-hardened Network Equipment Building Standards (NEBS) 3-compliant assembly, the Cisco ONS 15310-CL delivers fast provisioning and low initial cost, while maintaining a small footprint and low operational cost throughout the life of the product. It can be managed using the Cisco Transport Controller element management system and Cisco Transport Manager for network management.

For More Information

http://www.cisco.com/go/ons15300

Cisco ONS 15305 SDH Multiservice Provisioning Platform

The Cisco ONS 15305 Multiservice Provisioning Platform (MSPP) customer premises equipment (CPE) and aggregation solution is an ultra-compact, integrated system that offers cost-effective solutions. The platform provides native multiservice capabilities (that is, time-division multiplexing [TDM] interfaces, multiplexing, and Ethernet data interfaces).

The Cisco ONS 15305 aggregation platform provides the following TDM interfaces: protected or unprotected optical interfaces (8-port S-1.1 optical module, 2-port S-4.1 optical module, 1-port S-16.1 optical module, 1+1 MSP, SNCP, and 2F MS-SPRing for STM-16) and electrical customer interfaces (8- and 63-port E1 modules and a 6-port E3/DS-3 module). This product also provides native Ethernet customer access through an 8-port 10/100BASE-T module and a 2-port Gigabit Ethernet module (supports full Layer 2 capacity, bridging, VLANs, spanning tree, and priority management). An optional WAN module is available for point-to-multipoint applications.

For More Information

http://www.cisco.com/go/ons15300

Cisco Transport Manager 9.2

Cisco Transport Manager is an integrated optical element management system for Cisco ONS 15000 optical networking platforms. The software manages configuration, fault isolation, performance, and security for Cisco optical network elements. With integrated support for SONET, SDH, dense wavelength-division multiplexing (DWDM) and Ethernet, along with open interfaces to operations support systems (OSSs), Cisco Transport Manager delivers the full power of the wide range of advanced optical systems that Cisco offers today's network operators and enterprises.

Cisco Transport Manager is a powerful tool that increases the productivity of the network operations staff. The system provides GUI-based point-and-click network management. As such, the solution has a low learning

curve while providing advanced management capabilities such as A-to-Z circuit provisioning. Explorer-style navigation, the extensive use of wizards, tool tips, legends, and online help make it easy for an operator to perform tasks quickly and efficiently. Many otherwise tedious, time-consuming, and error-prone tasks can be fully streamlined using the features of this software.

Cisco Transport Manager works for small networks, but can also scale up to 4000 network elements and 100 concurrent clients per server. This solution is appropriate for small enterprise networks as well as large service provider networks. Cisco Transport Manager is extremely cost-effective (uses industry-standard platforms such as Sun Solaris, Oracle, and Microsoft Windows). It fits smoothly into most companies' information technology environments. Using scalable Sun server platforms, customers can minimize initial investment, but still accommodate growth by adding additional processors, memory, and disk space.

For More Information

http://www.cisco.com/en/US/products/sw/opticsw/ps2204/index.html

Chapter 9: Network Management

This chapter provides only a subset of Cisco products and part numbers.

Network Management At-a-Glance

Product	Features	Page
NETWORK MANAGEMENT SOLUTIONS		
Cisco Carrier IP NGN Management Solution (CIMS) ***NEW PRODUCT***	· Solution provides service life cycle management for Cisco Carrier Ethernet and IP RAN systems · Network and service discovery · Flexible service activation wizard with predefined support for Carrier Ethernet and IPRAN end to end service activation · Sophisticated analysis of both root-cause and service impact · Easy-to-use customer centric service dashboard for diagnostic routines	9–4
Cisco Network Application Performance Analysis (NAPA) Solution	· Solution provides comprehensive application and network performance visibility to empower network managers to effectively manage end-to-end service delivery. It helps enterprise IT to improve end-user experience, enhance operational efficiency, reduce application delivery risk and optimize use of network resources	9–4
Cisco Proactive Automation of Change Execution (PACE) Solution ***NEW UPDATES***	· Solution offers products and services that accelerate operational success by helping IT organizations securely automate and control network changes and configurations · Helps enterprises meet compliance requirements, accelerate growth, ensure business continuity, and increase user productivity	9–5
Cisco Video Assurance Management Solution (VAMS)	· Provides real-time, centralized monitoring of video transport over core, distribution, and aggregation networks · Monitors any changes in the multicast trees that might affect video performance · Actively manages network events to help you maintain video service uptime and quality · Supports correlation and aggregation of events in the core, distribution, and aggregation networks · When video probes are placed at demarcation points along the video path in the network, they help identify, isolate, and troubleshoot video errors. Supported video probes include: Tektronix MTM400, Ineoquest, and Mixed Signals.	9–5
NETWORK MANAGEMENT SERVICES MODULES		
Cisco Catalyst 6500/ Cisco 7600 Series Network Analysis Modules (NAMs) 1 and 2	Integrated in the Cisco Catalyst 6500 Series Switches and Cisco 7600 Series Routers, the Cisco NAM is a service module that provides granular insight into how the network is being used and how users experience the services the network offers to help improve application and network performance. With its built-in Traffic Analyzer GUI, the Cisco NAM provides quick access to the configuration menus and presents easy-to-read performance reports on voice, video, and TCP-based traffic.	9–6
Cisco Branch Routers Series Network Analysis Module (NAM)	The Cisco Branch Routers Series NAM is a service module integrated in the Cisco 2800, 2900, 3800 and 3900 Series Integrated Services Routers that provides application performance monitoring, traffic analysis, and troubleshooting in the borderless access network. It includes the Traffic Analyzer web interface, which can be accessed anywhere at any time, eliminating the need to send personnel to remote sites or to haul large amounts of data over WAN links to the central site.	
Cisco NAM 2200 Series Appliances	An extension of the Cisco NAM blades, the Cisco NAM 2200 Series Appliances offer next-generation performance, superior scalability, and maximum deployment flexibility. The NAM appliances increase the reach of the NAM in places in the network not currently served by the blades or where high performance monitoring is essential.	
Cisco WAAS NAM Virtual Service Blade (VSB)	Introduced in NAM 4.1, the Cisco WAAS NAM Virtual Service Blade is an integrated solution on the WAAS 574 and 674 Appliances. Providing a zero hardware footprint, the WAAS VSB is targeted towards Pre-deployment and Small data center environments by leveraging the embedded instrumentation of WAAS and NetFlow.	
Cisco Nexus 1000V NAM Virtual Service Blade (VSM)	Integrated with the Cisco Nexus 1010 Virtual Services Appliance, NAM VSB offers comprehensive visibility into virtual machine (VM) network to help identify performance bottlenecks, troubleshoot performance issues and optimize the use of VM network resources. Being an integrated solution, it provides investment protection, ease of deployment, and reduced network footprint.	

OPTICAL MANAGEMENT

Cisco Transport Manager 9.2	· Advanced optical transport domain manager that delivers element and network management layer functions · Offers efficient management of the entire Cisco ONS product family. · Provides a resilient, adaptable, and integrated carrier-class element-management-system (EMS) solution. · GUI-based management system makes advanced management capabilities such as A-to-Z circuit provisioning easy to learn and use. · Solution is cost-effective, using industry-standard platforms such as Sun Solaris, Oracle, and Microsoft Windows to fit smoothly into various IT environments, solution offers a variety of northbound interface options (for example, Simple Network Management Protocol [SNMP], TL1, and CORBA)	See 8–4

ROUTING AND SWITCHING MANAGEMENT

Cisco Active Network Abstraction	· Flexible and powerful multivendor network resource-management system provides an enabling platform for value-added network and service-management applications in a multitechnology, multiservice network environment	9–7

Cisco IP Solution Center	· Family of intelligent network management applications helps reduce administration, management, and network operational costs by:
	  - Providing automated resource management and rapid profile-based provisioning capabilities that speed deployment and time-to-market of Multiprotocol Label Switching (MPLS) and Metro Ethernet technologies
	  - Working with Cisco MPLS Diagnostics Expert to provide automated, workflow-based troubleshooting and diagnostic capabilities for MPLS VPN networks
		9–7

Cisco Multicast Manager
 	
NEW UPDATES
	· Simplifies multicast monitoring and troubleshooting
	· Web-based network management application is ideal for:
	  - Enterprise customers that employ multicast for financial market data
	  - Cable operators that use multicast to transport video over IP
	  - Service providers that need to manage a multicast VPN (MVPN) environment
		9–8

CiscoWorks LAN Management Solution (LMS)	· Part of the Cisco NAPA and Cisco PACE solutions, CiscoWorks LMS provides critical applications needed to manage Cisco switch-based enterprise campus networks:
	  - CiscoWorks Campus Manager
	  - CiscoWorks Device Fault Manager
	  - CiscoWorks Resource Manager Essentials and CiscoView
	  - CiscoWorks Internetwork Performance Manager
	  - CiscoWorks Portal and CiscoWorks Assistant
		9–8

CiscoWorks Health and Utilization Manager (HUM)	· Simple Network Management Protocol (SNMP)-based MIB polling application monitors network elements (such as CPU, memory, and interfaces, and links) for their availability and usage levels and provides historical reporting · CiscoWorks HUM is licensed separately and integrates with the CiscoWorks LAN Management Solution (LMS)	9–8

ENTERPRISE UNIFIED COMMUNICATIONS MANAGEMENT

Cisco Unified Communications Management Suite	· Comprehensive portfolio of communications applications integrated with a secure network infrastructure	9–9
Cisco Unified Operations Manager ***NEW UPDATES***	· Part of the Cisco Unified Communications Management Suite, Cisco Unified Operations Manager provides contextual diagnostic tools to facilitate trouble isolation and thereby increase the productivity of an organization's network managers · Provides a real-time, service-level view of the entire Cisco Unified Communications System and presents the current operational status of each element	9–9
Cisco Unified Service Monitor ***NEW UPDATES***	· Part of the Cisco Unified Communications Management Suite, Cisco Unified Service Monitor provides a low-cost, reliable method of monitoring and evaluating voice quality in Cisco Unified Communications Solutions	9–10
Cisco Unified Provisioning Manager ***NEW UPDATES***	· Part of the Cisco Unified Communications Management Suite, Cisco Unified Provisioning Manager · Provides provisioning for Cisco Unified Communications initial deployments and implementations · Remains in place to provide ongoing operational provisioning and activation services for individual subscriber changes	9–10
Cisco Unified Service Statistics Manager ***NEW UPDATES***	· Part of the Cisco Unified Communications Management Suite, Cisco Unified Service Statistics Manager provides advanced statistics analysis and reporting capabilities	9–10
CiscoWorks QoS Policy Manager	· Supports centralized management of network quality of service (QoS) · Provides comprehensive QoS provisioning and monitoring capabilities so you can manage, tune, and optimize the performance characteristics of your Cisco network	9–11
Cisco Media Gateway Controller Node Manager	· Element manager for the fault, configuration, performance, and security management of the Cisco PGW 2200 Softswitch gateway	9–12

VIDEO, CABLE, AND CONTENT-DELIVERY MANAGEMENT

Cisco Broadband Access Center	• This centralized, automated platform controls and configures residential gateways and IP devices
	• Provides:
	  - Recognition of all devices coming into the service provider network
	  - Generation and distribution of the appropriate IP lease and configuration files based on the service provider business policies
	  - Distributed architecture with central management and single point of integration
	  - Support for tens of millions of devices and designed to deal with performance impacting avalanche scenarios
	  - Support for DOCSIS, PacketCable, CableHome, and TR-069 device types
		9–12

Cisco Broadband Troubleshooter	• Provides a diagnostic tool for RF technicians to quickly and easily isolate problems in the cable plant
	• Performs the following functions:
	  - Analyzes and sorts RF conditions into specific categories such as attenuation, provisioning, and noise or packet corruption (cyclic redundancy check [CRC]) errors
	  - Provides dashboard views of network health, cable modem termination system (CMTS), and cable modem statistic and snapshots
	  - Correlates cable modem to subscriber information
	  - Works with an optional tool to map cable modems and status to subscriber street-level views
		9–12

SECURITY AND ACCESS MANAGEMENT

Cisco Security Management Suite	• Offers best-of-class management applications as part of a self-defending network including; Cisco Security Manager, a policy-based configuration-management system designed to efficiently provision small- to large-scale Cisco firewall, VPN, and intrusion-prevention-system (IPS) deployments and Cisco Security Monitoring, Analysis and Response System (MARS), which delivers sophisticated monitoring, analysis, and mitigation functions for multivendor networks. • Together, these two products form the Cisco Security Management Suite that delivers security administration and enforcement for the Cisco Self-Defending Network.	9–12
Cisco Access Registrar	• Cisco Access Registrar is the flagship Cisco RADIUS and Diameter authentication, authorization, and accounting (AAA) server for the service provider market • Supports service provider deployment of access services by centralizing AAA information and simplifying provisioning and management	9–13
Cisco Security Monitoring, Analysis, and Response System (MARS)	• Appliance-based, all-inclusive solution provides exceptional insight into and control of an organization's existing security deployment	See 5–33

BUILDING MANAGEMENT

Cisco Network Building Mediator	• Solution that extends the network as a platform to transform the way buildings are built, operated, and experienced. The mediator is the intelligence powering the new Energy Intranet by interconnecting and enabling four critical elements: the convergence of building systems and IT and the dynamic balance of energy supply and energy demand. The integration of these disparate systems onto an IP network leads to a truly converged, energy-efficient building.
	• The strategy of the Cisco Mediator is built on:
	  - Any-to-any connectivity—Building, IT, and green technologies
	  - End-to-end management—Efficiency, conservation, and de-carbonization
	  - Extensible platform—Third-party applications and cloud services
		9–13

Cisco Network Building Mediator Manager ***NEW PRODUCT***	• Allows organizations to centrally manage their geographically dispersed buildings over an IP network • Displays network presence information, providing operators real-time visibility into the status and accessibility of their facilities • Each building or site that needs to be managed uses one or more Cisco Network Building Mediators to integrate all the building systems within that facility • Connects, monitors, aggregates, and manages this distributed network of mediators	9–15

NETWORK CONFIGURATION AND CHANGE MANAGEMENT

CiscoWorks Network Compliance Manager (NCM)	• Part of the Cisco Proactive Automation of Change Execution solution, CiscoWorks Network Compliance Manager tracks and regulates configuration and software changes throughout a multivendor network infrastructure (including Cisco routers, switches, firewalls, load balancers, and wireless access points) • Provides exceptional visibility into network changes and can track compliance with a broad variety of regulatory, IT, corporate governance, and technology best practices	9–16

Cisco Network Registrar	• Provides fast, scalable, and highly-available naming and addressing services for service provider and large enterprise networks • Cisco CNS Address and Name Registrar Dynamic Host Configuration Protocol (DHCP) server supports DHCP Safe Failover (redundant DHCP servers), dynamic Domain Name Server (DNS) updates, DOCSIS cable modems, and integration with directory services using Lightweight Directory Access Protocol Version 3 (LDAPv3)	9–16
Cisco Mobile Wireless Transport Manager	• Performs real-time updates of any system changes such as inventory, events, and performance counters • Accelerates time to service by providing GUI-based editing • Allows the operator to immediately view events from the Cisco Radio Access Network (RAN) Optimization solution and Cisco IP Transfer Point (ITP) networks • Improves network serviceability by allowing operators to proactively assess the readiness and general health of Cisco RAN and Cisco ITP enables easier network problem identification and troubleshooting • Provides northbound XML application programming interfaces (APIs) • Helps maintain system integrity by preventing accidental or malicious operations from unauthorized users	9–16
Lifecycle Services for Network Management Products and Solutions	• Technical support services that help you maximize the availability, security, and performance of your Cisco network management products	9–17
Technical Services for Operating Network Management Products	• Technical support services that help you maximize the availability, security, and performance of your Cisco network management products.	9–17

FOR MORE INFORMATION

Product Ordering
To place an order, visit: http://www.cisco.com/en/US/ordering/index.shtml.

End-of-Life and End-of-Sale
Please visit the end-of-life and end-of-sale website for a complete and up-to-date listing of products that are no longer being sold or supported, what replacement products are available, and information about product support.
http://www.cisco.com/en/US/products/prod_end_of_life.html

NOTE: This chapter provides only a subset of Cisco products and part numbers. For the most up-to-date and comprehensive information, refer to the Cisco website at http://www.cisco.com, the Cisco ordering website at http://www.cisco.com/en/US/ordering/index.shtml, or reference the URL listed in the "For More Information" section of each product.

Cisco Carrier IP NGN Management Solution (CIMS)

The Cisco Carrier IP NGN Management Solution (CIMS) abstracts service complexities and transforms them into easy-to-understand service activation and assurance routines. The correlation of faults and event reduction in CIMS helps service providers easily identify important faults and resolve issues without having detailed technical knowledge of every service type.

Ideal for Companies That Need These Features

Cisco Carrier IP NGN Management Solution (CIMS)	• Service lifecycle management with abstraction of network service • Flexible device activation • Carrier Ethernet/IP RAN service-centric debugging and service dashboard • Increased operational efficiency

Key Features and Benefits

• Point-and-click, GUI-based service activation that simplifies and helps ensure a standardized, reliable, and repeatable service activation process regardless of technology and service type
• Service at-a-glance dashboard that allows operators to easily see which services have been affected because of problems on the network
• Allows operators to run standardized diagnostics regardless of the network and service technology
• Enables standardized processes and procedures independent of technical implementations and provides built-in support for Ethernet CFM
• Extensive platform support and multivendor "ready" that provides built-in support for Cisco hardware and supports multivendor extensibility that can be developed through Cisco Advanced Services.

For More Information
http://www.cisco.com/go/ctm

Cisco Network Application Performance Analysis Solution

The Cisco Network Application Performance Analysis (NAPA) solution provides comprehensive application and network performance visibility across the Cisco Borderless Network to empower network managers to solve next-generation application delivery challenges and improve the end-user experience.

Key Features and Benefits

- Improves application performance with effective use of Cisco control and optimization mechanisms, such as QoS and Cisco Wide Area Application Services (WAAS)
- Accelerates problem resolution and increases operational efficiency with advanced troubleshooting
- Preempts performance issues with threshold-based, proactive alerts
- Assesses impact on application and network behavior from changes such as WAN optimization, VM migration, application roll-out, and so on
- Gains visibility into virtual machine (VM) network including real-time monitoring of VMs while being migrated with VMotion

For More Information

http://www.cisco.com/go/napas

Cisco Proactive Automation of Change Execution (PACE) Solution

The Cisco Proactive Automation of Change Execution solution combines products and services that accelerate operational success by helping IT organizations securely automate and control network changes and configurations. This solution helps enterprises meet compliance requirements, accelerate growth, ensure business continuity, and increase user productivity. The solution is optimized to help medium-sized to large enterprises with challenges relating to compliance, in-house expertise, network complexity, and growth.

Solution Overview

- Cisco PACE Portal and Components
- CiscoWorks Network Planning Solution
- EMC Voyence Control
- CiscoWorks LAN Management Solution
- CiscoWorks Quality of Service (QoS) Policy Manager
- Cisco PACE Advanced Services

Key Features and Benefits

The Cisco PACE solution is optimized to help medium-sized to large enterprises address the challenges of compliance, growth, network complexity, and in-house expertise.

- Compliance—Adapt quickly to changing regulations such as:
  - Sarbanes Oxley (SOX)
  - Control Objectives for Information and Related Technology (COBIT)
  - IT Infrastructure Library (ITIL)
  - Gramm-Leach-Bliley Financial Modernization Act (GLBA)
  - Visa Cardholder Information Security Program (Visa CISP)
  - Payment Card Industry (PCI) Data Security Standards
  - Health Insurance Portability and Accountability Act (HIPAA)
  - Committee of Sponsoring Organizations (COSO) of the Treadway Commission
  - Custom regulations

For More Information

http://www.cisco.com/go/pace

Cisco Video Assurance Management Solution

Get real-time centralized monitoring of your core, distribution, and aggregation networks for broadcast video transport. The Cisco Video Assurance Management Solution (VAMS) provides the framework for a flexible end-to-end assurance management platform for video

The Cisco Video Assurance Management Solution comprises the following building blocks:

- Cisco Multicast Manager—Monitors any changes in the multicast trees that might affect video performance.
- Cisco Info Center—Actively manages network events to help you maintain video service uptime and quality.
- Cisco Active Network Abstraction—Supports correlation and aggregation of events in the core, distribution, and aggregation networks.
- Third-party video probes—Help you identify, isolate, and troubleshoot video errors at demarcation points along the video path in the network; supported video probes include: Tektronix MTM400, Ineoquest, and Mixed Signals

Ideal for Companies That Need These Features

Cisco Video Assurance Management Solution

- Reduced mean time to repair (MTTR)
- Proactive video-transport monitoring
- Enhanced video quality of experience
- Increased operational efficiency

Key Features and Benefits

- Dynamic visualization of video metrics
- Custom service views
- Root-cause analysis
- Integration with other operations-support-system (OSS) and business-support-system (BSS) solutions
- Proactive video transport monitoring
- Data collection from probes
- Multicast data collection

For More Information

http://www.cisco.com/go/vams

Cisco Catalyst 6500 Series/Cisco 7600 Series Network Analysis Modules 1 and 2
Cisco Branch Series Routers Network Analysis Module
Cisco NAM 2200 Series Appliances
Cisco WAAS NAM Virtual Service Blade
Cisco Nexus 1000V NAME Virtual Service Blade

The Cisco Network Analysis Modules (NAMs) provides comprehensive performance monitoring, exceptional traffic analysis, and insightful troubleshooting to help today's dynamic, evolving enterprises manage and improve application and network performance. The broad portfolio of Cisco NAMs, which encompasses integrated services modules, self-contained appliances, and now virtual service blades, arms you with what you need to manage performance throughout the Cisco borderless network.

Ideal for Companies That Need These Features

Cisco Network Analysis Modules

- Consistent and efficient delivery of applications and services to end users
- Improved operational effectiveness of switch, server, client, and application resources
- Assured delivery of VoIP services
- Visibility into Cisco WAAS improvements on application delivery
- Operational insight into virtual machine (VM) network including VM-to-VM interactions
- Quantification of the "before and after" of a business change on networks and applications
- Deployment flexibility with integrated service modules, virtual service blades and standalone appliances

Key Features and Benefits

- Transaction-aware Intelligent Application Performance (IAP)—Provides granular application performance metrics in both WAAS and non-WAAS environments to accurately characterize and improve the end user experience
- Comprehensive flow-based monitoring—Automatically identifies hundreds of protocols and provides real-time and historical usage reports on the traffic with the greatest potential impact on critical resources - top applications, top hosts, top conversations
- Web-based captures for deep, insightful data analysis—Captures the packets to help resolve acute problems before they affect users. Extensive capture features, including trigger-based captures, decodes, filters, and a capture analysis toolset, help to quickly pinpoint and resolve problem areas.
- Superior voice-quality monitoring—Uses mean opinion score (MOS) and critical performance indicators such as packet loss and jitter to help improve the quality of voice service. In addition, the NAM provides RTP-based analytics to help provide a view of the realtime media data path.

For More Information

http://www.cisco.com/go/nam

Cisco Active Network Abstraction

Cisco Active Network Abstraction (ANA) is a flexible and powerful multivendor network resource management system. Cisco ANA enables value-added network and service management applications in a multitechnology, multiservice network environment.

The core technology of Cisco ANA includes a unique Virtual Network Element abstraction model that dynamically discovers and identifies basic network components, while obtaining end-to-end visibility of network resources, connections, and dependencies. The building blocks of this model are autonomous, virtual software-based network devices, each one cloning the characteristics and properties of its real-world counterpart. The aggregation of these devices creates the virtual model in the same way an aggregation of network elements creates a real-world network.

Ideal for Companies That Need These Features

Cisco Active Network Abstraction

- Multivendor network resource management
- A common device management infrastructure that will be compatible with future versions
- Simplified integration of OSS applications from one authoritative source
- Vendor-neutral management platform
- Consistent procedures and interfaces for all network elements
- Standards-based access to near real-time device and network information
- Integration software development kit for developers

Key Features and Benefits

- Cisco Configurable Device Management Platform—The device management platform provides a single solution for multidevice, multitechnology, and multivendor element management. The platform features unified monitoring and configuration, and comes complete with prepackaged, commonly used element-management-system (EMS) functions.
- Cisco Network Fault Isolation and Service Fault Isolation—This technology provides extensive fault-analysis capabilities for quick and accurate fault detection, isolation, and correlation. It reduces trouble-ticket flooding by analyzing the structure, configuration, and dependencies (logical and physical) of the virtual network to track down the virtual source of the fault to accurately reveal the real problem. With this technology, no costly rule maintenance is required.
- Cisco Network Discovery and Service Discovery—This technology provides accurate, real-time discovery of the network inventory, topology, and services. It allows users to view physical network aspects and topological relationships, and it accurately displays the logical inventory, complete with a service view, that spans network layers.
- Cisco Service Activation—This feature facilitates automatic configuration of any device regardless of vendor, model, or software version. The combined activation and configuration process dramatically quickens deployment, while eliminating unnecessary and error-prone manual processes. All activation and configuration activities are done in parallel with no single point of congestion.

For More Information

http://www.cisco.com/go/ana

Cisco IP Solution Center

Cisco IP Solution Center is a family of intelligent network-management applications that help reduce administration, management, and network operational costs

Ideal for Companies That Need These Features

Cisco IP Solution Center

- Scalable and reliable architecture for large-scale operations
- Single server solution and web GUI
- Open APIs and OSS interfaces that help:
    - Integrate IP VPN services into existing infrastructure
    - Integrate Cisco fault-management products with independent software vendor products for VPN-aware performance reporting

Key Features and Benefits

- Tracking of Layer 3 and Layer 2 resources
- Rapid profile-based provisioning
- Autodiscovery of Layer 3 VPN and Layer 2 VPN services
- Ability to recognize incorrect service configuration
- Investment protection from Cisco IOS Software and Cisco IOS XR Software and line card changes

For More Information

http://www.cisco.com/go/isc

Cisco Multicast Manager

Cisco Multicast Manager is a web-based network-management application that simplifies the holistic discovery, visualization, monitoring, and troubleshooting of multicast networks to help ensure business continuity. This solution is appropriate for enterprise customers that employ multicast for financial market data for multiple system operators (MSOs) use multicast to transport video over IP, and for service providers that need to manage their multicast VPN (MVPN) environment.

Ideal for Companies That Need These Features

Cisco Multicast Manager
- As enterprise customers, the ability to employ multicast for financial market data
- As a cable operator, the ability to use multicast to transport video over IP
- As a service provider, the ability to manage multicast VPN (MVPN) environment

Key Features and Benefits

- Video operations solution—Provides monitoring support for video probes to detect poor-quality video
- Enhanced address management database—Indicates which video channels are being affected when problems with specific multicast groups are detected
- Monitoring and diagnostics for MVPNs
- Support for one-time passwords with TACACS
- Support for the Cisco Carrier Routing System (CRS) and Cisco Advanced Services Routers (ASR)

For More Information
http://www.cisco.com/go/cmm

CiscoWorks LAN Management Solution (LMS)

CiscoWorks LAN Management Solution (LMS) is an integrated suite of management tools that simplify the configuration, administration, monitoring, and troubleshooting of Cisco networks. Built on popular, Internet-based standards, CiscoWorks LMS applications help network operators manage the network through a browser-based interface that can be accessed anytime and from anywhere within the network. CiscoWorks LMS maintains a centralized list of all Cisco network devices and their credentials. The list serves as a single repository for all CiscoWorks applications, whether they are installed locally or distributed in a multiserver deployment. CiscoWorks LMS Portal facilitates functional views that can be tailored to meet the needs of an individual or group of network operations staff, simplifying integration and navigation between Cisco network products and other third-party application functions.

Ideal for Companies That Need These Features

CiscoWorks LAN Management Solution
- A centralized system for sharing device information across all LMS applications
- Network discovery, topology views, end-station tracking, and VLAN management
- Real-time network discrepancy analysis with easy-to-deploy, device-specific best-practices templates
- Hardware and software inventory management, centralized configuration tools, and syslog monitoring
- Network response time and availability monitoring and tracking
- Real-time device, link, and port traffic management, analysis, and reporting
- Flexible license model

Key Features and Benefits

- CiscoWorks Device Fault Manager provides detailed, real-time detection, analysis, and reporting of device faults. It often identifies problems before users realize they exist.
- CiscoWorks Campus Manager configures, manages, and visualizes complex physical and logical Layer 2 infrastructures, including VLAN, user tracking, and topology visualization tool.
- CiscoWorks Resource Manager Essentials provides network inventory, device configurations and changes, software updates, and syslog analysis.
- CiscoWorks Internetwork Performance Monitor offers proactive measurement of network response time and availability as well as real-time and historical analysis of congestion and latency problems.
- In CiscoWorks CiscoView, front-panel graphical displays of Cisco devices simplify user interaction with device components to change configuration parameters and monitor statistics.
- CiscoWorks Common Services provides a common model for data storage, login, user-role definitions, access privileges, and security protocols, as well as navigation and launch management.

For More Information
http://www.cisco.com/go/lms

CiscoWorks Health and Utilization Manager (HUM)

CiscoWorks Health and Utilization Manager is a Simple Network Management Protocol (SNMP)-based MIB polling application that monitors network elements (such as CPU, memory, and interfaces or links) for their availability and usage levels and provides historical reporting. The application is offered separately and integrates with the CiscoWorks LAN Management Solution (LMS)

Ideal for Companies That Need These Features

CiscoWorks Health and Utilization Manager
- An add-on to CiscoWorks LMS for monitoring the health and usage of critical MIB parameters, such as CPU usage, interface and port availability, and so on, with historical trending and reporting

Key Features and Benefits

- Monitors CPUs, memory, and interfaces and ports for usage and availability levels
- Provides historical trending on a daily, weekly, monthly, and annual basis
- Supports integration with CiscoWorks LMS
- Offers comprehensive reporting through, for example, a device dashboard, custom reports, and Top-N/Bottom-N reports
- Provides threshold breach event notification, reporting, and event handler support

For More Information

http://www.cisco.com/en/US/products/ps9303/index.html

Cisco Unified Communications Management Suite

Cisco Unified Communications Management Suite is a comprehensive portfolio of communications applications integrated with a secure network infrastructure. To take full advantage of such a system, organizations need a communications-management solution that provides a dashboard view of the entire system status.

Solution Overview
- Cisco Unified Provisioning Manager
- Cisco Unified Operations Manager
- Cisco Unified Service Monitor
- Cisco Unified Service Statistics Manager

Key Features and Benefits

Cisco Unified Communications Management Suite allows you to:
- Collect, analyze, and report statistical information from the network
- Manage moves, adds, and changes
- Track and report on user experience and mean opinion scores
- Monitor network elements, including Cisco Unified Communications Manager, the Cisco Unity system, gateways, and endpoints, including the underlying network
- Identify and diagnose problems, and test and track changes
- Maintain network inventory
- Deploy and provision the network

For More Information

http://www.cisco.com/en/US/products/ps5747/Products_Sub_Category_Home.html

Cisco Unified Operations Manager

Part of the Cisco Unified Communications Management Suite, Cisco Unified Operations Manager features out-of-the-box, real-time, service-level monitoring of all system elements. It performs automatic discovery for the entire system and provides contextual diagnostics for rapid troubleshooting. With Cisco Unified Operations Manager there are no rules to write, no thresholds to define, and no extensive, time-consuming initial setup

Ideal for Companies That Need These Features

Cisco Unified Operations Manager
- Real-time notifications and reports about the status of the network monitored to a higher-level entity
- Ability to manage multisite and multicluster unified communications environments
- Reduced administrative overhead through sharing device and credential information with other CiscoWorks tools deployed in the enterprise

Key Features and Benefits

- Real-time visualization and monitoring of the entire Unified Communications system supports more efficient troubleshooting
- Active service assurance ensures that devices and applications are functioning as they should, and reveals faults and performance issues before they affect service
- Powerful diagnostic tests and troubleshooting capabilities rapidly isolate faults and increase productivity
- Correlation, analysis, and presentation of voice service quality data and alerts make use of information available through Cisco Unified Service Monitor
- Inventory and change monitoring enable tracking of complete details of unified communications devices and IP phone inventory
- Cisco Unified Operations Manager does not deploy any agent software on the devices being monitored, so it will not disrupt system operations

Cisco Unified Service Monitor

Part of the Cisco Unified Communications Management Suite, Cisco Unified Service Monitor offers an affordable, reliable way to continuously monitor active calls supported by the Cisco Unified Communications System. Cisco Unified Service Monitor also provides near real-time notification when the voice quality of a call fails to meet a user-defined quality threshold.

Ideal for Companies That Need These Features

| Cisco Unified Service Monitor | · Real-time management information and diagnostic tools to help ensure an efficient deployment and subscriber satisfaction |
| | · Immediate monitoring and assessment of the quality of IP-based calls without elaborate setup or complicated installation problems |

Key Features and Benefits

- Flexible and comprehensive voice-quality measurements through a combination of Cisco Voice Transmission Quality (VTQ) metrics from Cisco IP phones, Cisco 1040 sensors, and Network Analysis Module version 4.0 and above
- Ability to pinpoint the network segment causing call-quality degradation
- Top N reports and enhanced data filters for call-quality analysis
- Advanced quality thresholds
- Near real-time Simple Network Management Protocol (SNMP) alerts on quality threshold violations
- Integrates with Cisco Unified Operations Manager to display call-quality violations on Service Quality Alerts display
- Integrates with Cisco Service Statistics Manager for long-term trend and capacity planning reports

For More Information

Cisco Unified Provisioning Manager

Part of the Cisco Unified Communications Management Suite, Cisco Unified Provisioning Manager supports the implementation of Cisco Unified Communications, as well as ongoing, simplified operational provisioning and activation services for individual subscriber changes.

Ideal for Companies That Need These Features

Cisco Unified Provisioning Manager	· Ability to perform initial installation and deployment of Cisco Unified Communications network elements and services
	· Ability to perform ongoing operational provisioning and activation of services and subscriber changes
	· Cost control for deployments and ongoing service provisioning
	· Policy control of management and services

Key Features and Benefits

- Activation services for full lifecycle management
- Provides a consolidated view of subscribers across the organization
- Manages subscriber services across the Cisco Unified Communications infrastructure using policy-driven, business-level management abstractions
- Drives down initial deployment costs by permitting reuse of defined configurations for new site or location deployments
- Batch provisioning permits the rollout of large numbers of subscribers at once, avoiding inefficient and repetitive tasks
- Policy-driven, delegated management reduces ongoing costs, and expertise required to manage network changes yet retains management oversight

For More Information

Cisco Unified Service Statistics Manager

Part of the Cisco Unified Communications Management Suite, Cisco Unified Service Statistics Manager provides advanced statistics analysis and reporting capabilities for Cisco Unified Communications deployments. Cisco Unified Service Statistics Manager is an easy -to-use, web-based software product that provides a variety of easy-to-use, yet advanced executive and operational reports, enhancing capacity planning and budgeting.

Ideal for Companies That Need These Features

Cisco Unified Service Statistics Manager
· Statistical reporting, trending, and analysis for small, medium, and large Cisco Unified Communications deployments

Key Features and Benefits

· Optimizes network resources and increases operational efficiency by providing visibility into key metrics such as call volume, service availability, call quality, resource utilization, and capacity
· Allows users to collect and analyze statistics from a variety of sources to define service-level agreement (SLA) constructs
· Trend analysis capabilities can help identify potential adverse developments before they impact service
· Provides customizable report templates and automatic report invocation and scheduling features
· Enables the export of data and reports in a variety of file formats, including HTML, PDF, and comma-separated value (CSV)

For More Information

http://www.cisco.com/go/cussm

CiscoWorks QoS Policy Manager

CiscoWorks QoS Policy Manager (QPM) allows administrators to centrally define and administer Cisco IOS Software and Cisco Catalyst Operating System parameters needed for differentiating network traffic. This application helps to ensure high availability and predictable performance for business-critical applications that rely on advanced voice and video services.

Ideal for Companies That Need These Features

CiscoWorks QoS Policy Manager
· End-to-end QoS configuration and automated, reliable policy deployment, while eliminating device-by-device command streams
· Rules-based policies that combine static and dynamic port applications and host system traffic filters
· Cisco QoS Policy Manager services, including congestion management and avoidance and traffic shaping
· Ability to efficiently translate policies to specific QoS configuration commands to ensure consistency across domains
· Ability to validate policies quickly and reliably to LAN and WAN policy domains prior to deploying them
· Ability to generate web-based reports on QoS policies deployed in the network

Key Features and Benefits

· Cisco QPM measures traffic throughput for top applications and service classes and troubleshoots problems with real-time and historical quality-of-service (QoS) feedback.
· Cisco QPM centrally defines roles and permissions for use with the Cisco Secure Access Control Server (ACS) privilege control. Policy views can be modified and deployed for different device groups.
· The application partitions the network into administrative and deployment domains and uses policy libraries for global QoS configuration. It modifies, scales, and monitors Cisco IOS AutoQoS voice policies on routers.
· Cisco QPM uses the secure, web-based GUI for accurate end-to-end QoS configuration and automated, reliable policy deployment, while eliminating device-by-device command streams. The Setup wizard intelligently determines QoS policies and properties at each network point that requires IP telephony QoS configuration based on Cisco design recommendations.
· Cisco QPM exposes QoS policy conflicts, uploads existing device configurations, presents command-line-interface (CLI) syntax that corresponds to policies, allows previewing of configuration changes before deployment, supports incremental access-control-list (ACL) updates, defines ACL ranges, and restores or applies a previous version of a policy database and backup to a remote server.
· An integral part of Cisco content networking, Cisco QPM Version 3.2 delivers the appropriate service levels to business-critical applications by supporting the extension of IP packet classification to include application signature, web URLs, and negotiated ports.
· Cisco QPM facilitates congestion management, congestion avoidance, and bandwidth control by selectively activating QoS mechanisms on intelligently grouped LAN and WAN interfaces and providing support for external application programming interfaces (APIs) to trigger event-based policy distribution.
· The application extends security by defining access-control policies to permit or deny transport of packets into or out of device interfaces.
· Cisco QPM supports device inventory import from CiscoWorks Resource Manager Essentials, shortening configuration time for devices targeted for policy enforcement and QoS monitoring.

For More Information

http://www.cisco.com/go/qpm

Cisco Media Gateway Controller Node Manager

Cisco Media Gateway Controller (MGC) Node Manager is a Cisco element manager for fault, configuration, and performance management of the Cisco PGW 2200 Softswitch. It integrates management access to all node components, effectively representing them as a single entity to the network operator. The software provides views of individual managed devices and logical objects, such as trunk groups and signaling links, making it easier to manage the components that make up a voice-over-IP (VoIP) media gateway control node.

Ideal for Companies That Need These Features

Cisco Media Gateway Controller Node Manager
- Network surveillance
- Cisco MGC Node Manager Diagnostic Tools
- Provisioning and configuration
- User access and performance

For More Information
http://www.cisco.com/en/US/products/sw/netmgtsw/ps1912/index.html

Cisco Broadband Access Center

Cisco Broadband Access Center (BAC) allows service providers to centralize the provisioning and management of subscriber devices through fully redundant and distributed product architecture.

Ideal for Companies That Need These Features

Cisco Broadband Access Center
- As a service provider, the ability to manage subscribers with network services using cable and DSL CPE devices

Key Features and Benefits

- Cisco BAC automatically recognizes end-user devices coming onto the service provider network. It assigns an appropriate class of service, dynamically generates device configuration files, and activates subscribers.
- Cisco BAC supports both preprovisioning of devices (giving customers a ready-to-use experience) and autoprovisioning so that service providers can easily support self-registration of customer-provided cable and DSL access devices.
- The solution provides embedded, high-performance data storage, optimized for device provisioning.
- Cisco BAC requires no additional external database.
- The solution provides an integrated Kerberos Protocol server for CableLabs PacketCable voice service provisioning.
- Cisco BAC has a Java-based provisioning application programming interface (API).
- Cisco BAC appliance-based distributed information caching and processing servers offer true scalability.

For More Information
http://www.cisco.com/en/US/products/sw/netmgtsw/ps529/index.html

Cisco Broadband Troubleshooter

Cisco Broadband Troubleshooter is an easy-to-use tool that gives network administrators and technicians a GUI that streamlines RF problem resolution. The tool dynamically monitors RF characteristics on a per-modem or per-upstream basis, provides a measurement interface for the upstream that looks and feels like a spectrum analyzer, decentralizes RF monitoring and analysis, and automatically sorts and categorizes RF problem conditions. The product provides a fault-analysis tool that facilitates isolation of performance, cable plant, and Cisco Unified Communications Manager problems and characterizes upstream and downstream trouble patterns. Operators can quickly discern customer-premises-equipment (CPE) connectivity impairments by identifying noise, attenuation, provisioning, and packet-corruption problems.

For More Information
http://www.cisco.com/en/US/products/sw/netmgtsw/ps530/index.html

Cisco Security Management Suite

The Cisco Security Management Suite is a framework of next-generation security-management tools designed for the operational management and policy administration of the Cisco Self-Defending Network. This suite of integrated applications simplifies the management process by automating tasks associated with the functional areas of security management: configuration, monitoring, analysis, mitigation, identity, and auditing. The result is an increased level of security assurance, better organizational productivity, and lower overall total cost of ownership (TCO).

The primary components of the Cisco Security Management Suite include the Cisco Security Manager and the Cisco Security Monitoring, Analysis, and Response System (MARS). With a powerful set of applications, an integrated architecture, and a comprehensive partnering strategy, the Cisco Security Management Suite is positioned to provide organizations with a best-of-class management solution for their security networks. This solution gives administrators tools that automate and simplify operational tasks.

The Cisco Security Management Suite delivers increased security, better organizational productivity, and lower overall TCO.

Ideal for Companies That Need These Features

Cisco Security Management Suite
- Policy consistency and security assurance
- Rapid threat mitigation for improved company network uptime
- Better control of and access to security information for forensics analysis and reporting
- Accounting and tracking of user network access and authorization

Key Features and Benefits

- Provides a single integrated application for managing for managing firewall, VPN, and intrusion-prevention-system (IPS) security services on Cisco security appliances and modules, routers, and switches
- Reduces operational expenses while at the same time improving provisioning accuracy and consistency
- Collaborates with Cisco Security MARS to form a comprehensive security management solution encompassing security provisioning, event monitoring, threat detection, and mitigation
- Allows faster response to threats by defining and assigning new security policies to thousands of devices in a few simple steps
- Provides ease-of-use with a rich GUI
- Supports true enterprise-class operational environments with support for multiple simultaneous security administrators with fine-grained control of access permissions; an optional "workflow" mode allows the security and network operations staff to work together effectively with the appropriate division of responsibilities
- Supports provisioning for Cisco router platforms running a Cisco IOS Software security software image, Cisco ASA 5500 Series Adaptive Security Appliances, Cisco PIX security appliances, Cisco IPS 4200 Series Sensors, Cisco Catalyst 6500 Series/7600 Series with security services modules, and Cisco Catalyst 3000 and 4000 Series Switches

For More Information

http://www.cisco.com/en/US/solutions/collateral/ns340/ns394/ns171/ns625/ns647/net_brochure0900aecd80400060.html

Cisco Access Registrar

Cisco Access Registrar is a standards-based RADIUS/Diameter and proxy RADIUS/Diameter server designed for high performance, extensibility, and integration with external data stores and systems. It provides an ideal solution for service providers with wide-area broadband (WiMax), wide-area mobile Code Division Multiple Access (CDMA), General Packet Radio Service (GPRS), Universal Mobile Telecommunications Service (UMTS), 1xRTT, 1xEV-DOrA), wired and wireless local-area networks (Wi-Fi, WiMax), dial-up, and DSL services.

Ideal for Companies That Need These Features

Cisco Access Registrar
- Service providers that are looking for a high performing and most extensible AAA server for their network.

Key Features and Benefits

- Cisco Access Registrar is RADIUS and Diameter compliant for multiple dial-in Network Access Server (NAS) devices to share a common database.
- Cisco Access Registrar provides support for IPv6 interfaces.
- Cisco Access Registrar provides many features including Authentication, Authorization, and Accounting, Proxy, database and LDP configuration, resource allocation and session management, system tuning and configuration, troubleshooting, and monitoring.

For More Information

http://www.cisco.com/go/car

Cisco Network Building Mediator

The Cisco Network Building Mediator ("Mediator") is the industry's first solution that extends the network as a platform to transform the way buildings are built, operated, and experienced. The Mediator:

- Enables sustainable energy reduction across global operations
- Takes full advantage of Cisco's expertise in collaboration, convergence, and security to foster sustainable energy use
- Helps ensure that network applications will be compatible with future versions by providing flexible integration of new technologies that deliver energy efficiency, clean energy, and environmental stewardship

The Cisco Mediator is the intelligence powering the new Energy Intranet by interconnecting and enabling four critical elements: the convergence of building systems and IT and the dynamic balance of energy supply and energy demand. The integration of these disparate systems onto an IP network leads to a truly converged, energy-efficient building.

The strategy of Cisco Mediator is built on:

- Any-to-any connectivity—Building, IT, and green technologies
- End-to-end management—Efficiency, conservation, and de-carbonization
- Extensible platform—Third-party applications and cloud services

The Cisco Mediator collects data from the building, IT, energy supply, and energy demand systems that use different protocols and are otherwise unable to communicate. The mediator then normalizes the data into a common data representation, enabling it to perform any-to-any protocol translation and provide information to the end user in a uniform presentation.

This network-based framework creates a common, standards-based, open platform that then allows enterprise applications, cloud services, and building and IT systems to communicate. Protocol agnostic, Cisco Mediator extends the network to serve as an effective foundation for sustainability management.

Key Features and Benefits

- Cisco Mediator supports Cisco EnergyWise technology to manage energy across IT and facilities.
- The mediator supports network protocols such as Simple Network Management Protocol (SNMP), Simple Object Access Protocol (SOAP), and XML.
- The solution supports open standard building automation protocols such as BACnet and Modbus.
- Cisco Mediator supports other third-party building automation protocols.
- Any-to-any protocol translation allows communication between multivendor systems.
- Cisco Mediator supports energy meters, including pulse meters and smart meters (Modbus or IP).
- The solution allows for flexible integration of energy-generating and energy-consuming devices.
- The solution provides tools to both monitor real-time energy consumption and create automated policies to control it.
- The solution supports automated demand response and automated fault diagnostics.
- The platform is hardened and secured through the Cisco Self-Defending Network.
- Role-based access control offers increased user security.
- Communication is secured through certificate encryptions.
- Cisco Mediator provides interactive, menu-directed tools that allow you to:
  - Configure the interfaces and protocols on the mediator
  - Create and edit schedules, alarms, logs, and trends
  - Perform remote installation
  - Back up and restore configuration
- The solution provides a graphical programming tool that allows users with a working knowledge of controls and automation to translate their knowledge into efficient and powerful control logic.
- The management framework is web-based.
- With this solution you can control and manage devices over the Internet.
- Cisco Mediator presents real-time information in web-based graphical views.
- With Cisco Mediator you can create customized webpages for facility operations management.
- Cisco Mediator provides a standards-based open interface that allows third-party applications to integrate with the mediator and offer services "over the cloud". Examples of such cloud services include:
  - Remote energy management
  - Automated demand response
  - Automated fault diagnostics
  - Remote facility management

Specifications

Feature	Cisco Network Building Mediator
Processor	Pentium-class @ 266 MHz
Memory	512 MB of SDRAM and 512 MB of Compact Flash
Communications	• 1- console port (RS-232) • 2- RS-232 • 4- RS-485 • 2- 10/100 BASE-T Ethernet ports • 4- Dallas 1-Wire® ports (for distributed I/O points) • 2- USB ports
Inputs	4- Counters (optionally, general purpose digital inputs)
Outputs	2- Solid-State single-pole relay outputs (0-60V, 1.0A AC/2.0A DC outputs, opto-isolated)
Power	24V DC or AC (24 universal DC power supply provided with unit)
Wattage	Typically 6 Watts (maximum10 Watts)
Weight	Approximately 35 oz.
Size	Approximately 8" x 6" x 1" (housing cover)
Temperature	Recommended ambient range: 0° to 70°C (32° to 158°F)
Agency listings	Safety—UL 60950-1, CAN/CSA-C22.2 No. 60950-1 EMC Emissions—47CFR Part 15 (CFR 47) Class A, CISPR2 2 Class A, EN55022 Class A, ICES003 Class A, EN61000-3-2, EN61000-3-3

Selected Part Numbers and Ordering Information

NBM4800-K9	Cisco Network Building Mediator 4800-Include 2000 Pts
NBM4800-PL	Cisco Network Building Mediator 4800-Add 1000 Pts License
NBM4800-INT	Cisco Network Building Mediator 4800-Intermediate Protocols
NBM4800-ADV	Cisco Network Building Mediator 4800-Advanced Protocols
NBM2400-K9	Cisco Network Building Mediator 2400-Include 250 Pts
NBM2400-PL	Cisco Network Building Mediator 2400-Add 250 Pts License
NBM2400-INT	Cisco Network Building Mediator 2400-Intermediate Protocols

For More Information
http://www.cisco.com/go/mediator

Cisco Network Building Mediator Manager

Each building or site that needs to be managed uses one or more Cisco Network Building Mediators to integrate all the building systems within that facility. The Cisco Network Building Mediator Manager connects, monitors, aggregates, and manages this distributed network of mediators. The mediator manager includes a global navigator that provides visualization and presence for the dispersed deployment, global alarm monitoring for centralized event management, and tools for defining schedules and set points that apply across all facilities, helping to standardize facility operations and increase efficiencies in facility management.

Key Features and Benefits

- Provides global navigator that includes network presence information for enterprise-wide visibility of facility operations
- Provides global set-point control for changing system set points across all facilities
- Offers global alarm monitoring portal with the ability to redirect or route alarms to workflow management systems
- Provides global, unified schedules that apply across all facilities and across all subsystems
- Offers navigation capability from global site view to local site view
- Provides site dashboard highlighting important site parameters
- Provides site view that includes graphical equipment status pages for critical systems such as heating, ventilation, and air conditioning (HVAC), lighting, and metering
- Offers direct control of local site and equipment set points from enterprise portal

Specifications

Processor	Quad-core Intel Xeon (Nehalem)
Memory	6 GB
Hard Disk	2 x 300-GB SAS RAID drives
Ethernet	Ethernet network interface cards (NICs): 2 x Integrated NICs, 2 x Gigabit NICs (PCI-X)
Interfaces	1 serial port, 4 USB 2.0 ports, 1 keyboard port, 1 video port, 1 mouse port
Form Factor	Rack-mounted 1 RU
Weight	35 lb (15.87 kg) fully configured
Dimensions	1.70 x 16.78 x 27.75 in

Selected Part Numbers and Ordering Information

NBM-MGR-6300-K9	Cisco Network Building Mediator Manager 6300
NBM-MGR-50N-LIC	Cisco Network Building Mediator Manager (50-node license)

For More Information
http://www.cisco.com/go/mediator

Cisco Network Compliance Manager (NCM)

Cisco Network Compliance Manager identifies and corrects trends that could lead to problems such as network instability and service interruption.

Ideal for Companies That Need These Features

Cisco Network Compliance Manager
- Tracks and regulates configuration and software changes throughout your multivendor network infrastructure (including routers, switches, firewalls, load balancers, and wireless access points)
- Improves visibility into network changes
- Tracks compliance with a broad variety of regulatory, IT, corporate governance, and technology best practices

Key Features and Benefits

- Flexible incremental licensing based on number of nodes
- Software image management with validation and recommendation
- End of Sale and End of Life reporting and notification
- Policy- and rule-based compliance reporting and management
- Rule-based prevalidation and configuration
- Sophisticated search capability
- Extensive support for a broad range of vendor equipment

For More Information

www.cisco.com/go/ncm

Cisco Network Registrar

Cisco Network Registrar is a full-featured Domain Name Server/ Dynamic Host Configuration Protocol (DNS/ DHCP) system that provides scalable naming and addressing services for service provider and enterprise networks. The application dramatically improves the reliability of naming and addressing services for enterprise networks.

Ideal for Companies That Need These Features

Cisco Network Registrar
- Usability, better lease reservation performance, and an enhanced IPv6 capability to facilitate DOCSIS 3.0 deployment

Key Features and Benefits

- Real-time server status dashboard
- Carrier-class lease reservation performance
- Sanity check before installation
- Configuration wizard—A configuration wizard helps users navigate through different Cisco Network Registrar configuration steps
- Searching capability improvement
- Installation wizard
- Lease query conformance
- Enhanced error reporting
- DHCPv6 enhancements

For More Information

http://www.cisco.com/en/US/products/sw/netmgtsw/ps1982/index.html

Cisco Mobile Wireless Transport Manager

With the Cisco Mobile Wireless Transport Manager (MWTM), Cisco offers monitoring and management capabilities for the Cisco Global System for Mobile Communications (GSM) Radio Access Network (RAN) Optimization solution, Cisco IP Transfer Point (ITP) networks, and Cisco Mobile Service Exchange Framework (mSEF).

Ideal for Companies That Need These Features

Cisco Mobile Wireless Transport Manager
- Easy navigation through the various management and troubleshooting tasks required to support the GSM backhaul infrastructure

Key Features and Benefits

- Event monitoring
- Performance reporting
- Troubleshooting

- Operations-support-system (OSS) integration
- Wizard-based provisioning
- Autodiscovery and topology
- Security
- Client/server architecture and OS support

For More Information

http://www.cisco.com/go/mwtm

Lifecycle Services for Network Management Products and Solutions

Cisco and our authorized partners provide a comprehensive portfolio of services for your network management solutions across the planning, design, implementation, and operate phases of the Cisco Lifecycle Services approach.

Planning, Design, and Implementation Services

Cisco and our global network of partners help you increase your success through world-class professional services delivery. Proven methodologies and leading practices help you better understand and improve the state of your operations and your Cisco network management solutions and processes. In addition to increased customer satisfaction, these services help reduce the complexities of deploying network services and reduce excess operating costs for your business. These innovative service programs are delivered through a unique combination of consulting engineers, processes, tools, and partners to address your planning needs. Implementation service activities are delivered primarily through Cisco Certified Partners.

Cisco Services for Operations and Network Management

- Accelerate your design and implementation of network management solutions
- Increase the accuracy and efficiency of your Cisco Operations and Network Management solution deployment by providing expertise and methodologies
- Help to ensure the Cisco Operations and Network Management solution delivers expected features and functions through involvement in all aspects of the plan, design, and implementation activities
- Improve your operations staff's productivity by enhancing staff skills to support the Cisco Operations and Network Management solution

For More Information

http://www.cisco.com/en/US/products/ps6835/serv_group_home.html

Technical Services for Operating Network Management Products

Cisco and our authorized partners offer technical support services that help you maximize the availability, security, and performance of your Cisco network management products. These services are available through your Cisco account manager or your local authorized partner.

Application Support

Application software support services are essential to keeping business-critical applications available, secure, and operating at optimal performance. They can help you reduce security, operational, and business risk by simplifying the process of keeping software releases current and supporting your staff with Cisco expertise and online tools.

Cisco Application Support for Network Management products include Software Application Support (SAS) and Software Application Support plus Upgrades (SASU).

Cisco Software Application Support provides:

- Around-the-clock, global access to certified Cisco Technical Assistance Center (TAC) engineers with specialized expertise in application software problems
- Unrestricted access to the extensive Cisco.com knowledge base, automated troubleshooting tools, and online support communities
- Access to ongoing application software updates for your licensed applications
- Software Application Support plus Upgrades includes all the deliverables of SAS plus access to major software application upgrades on your licensed applications, which can include significant new features and network management functions

Hardware Support

Cisco SMARTnet Service delivers rapid problem resolution, flexible device-by-device coverage, and premium service options to help maximize operational efficiency. SP Base provides similar device-level support tailored specifically for service provider customers.

Cisco SMARTnet Service and SP Base provide:

- Around-the-clock, global access to the Cisco TAC
- Registered access to the extensive Cisco.com knowledge base and tools
- Next-business-day advance hardware replacement (premium options available for business-critical devices, such as 2-hour replacement and onsite parts replacement and installation)
- Access to ongoing operating system software updates and upgrades

- Cisco operating system (Cisco IOS Software) software support to extend the life of Cisco devices with improved security, increased performance, bandwidth management, new protocol support, and greater interoperability
- Proactive diagnostics and real-time alerts on select devices with Smart Call Home

For More Information

http://www.cisco.com/go/services/applicationsupport

http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/ps2960/serv_group_home.html

To find the specific technical services available for your hardware product or software application, visit the Cisco Service Finder tool at http://www.cisco-servicefinder.com.

To find a Cisco partner near you, visit: http://www.cisco.com/go/partnerlocator.

Technical Support Offerings for Network Management Products		
	Application Support: SAS or SASU	Hardware Support: Cisco SMARTnet or SP Base Service
Cisco Catalyst 6500/7600 Series Network Analysis (NAM) Modules 1 and 2		Cisco SMARTnet or SP Base Service
Cisco Branch Routers Series NAM		Cisco SMARTnet or SP Base Service
Cisco NAM 2200 Series Appliances		Cisco SMARTnet or SP Base Service
Cisco Transport Manager	SAS	
Cisco Active Network Abstraction	SAS	
Cisco IP Solution Center	SAS	
Cisco Multicast Manager	SAS	
Cisco Video Assurance Management Solution (VAMS)	SAS	
CiscoWorks LAN Management Solution (LMS)	SAS	
CiscoWorks Health and Utilization Manager	SAS	
Cisco Unified Communications Management Suite	SAS	
Cisco Unified Operations Manager	SAS	
Cisco Unified Service Monitor	SAS	
Cisco Unified Provisioning Manager	SAS	
Cisco Unified Service Statistics Manager	SAS	
CiscoWorks QoS Policy Manager	SAS	
Cisco Media Gateway Controller Node Manager	SAS*	Cisco SMARTnet or SP Base Service*
Cisco Broadband Access Center	SAS	
Cisco Broadband Troubleshooter	SAS and SASU	
Cisco Secure Access Control Server (ACS)	SAS*	Cisco SMARTnet or SP Base Service*
Cisco Security Management Suite-Cisco Security Manager	SAS	
Cisco Access Registrar	SAS	
Cisco Security Monitoring, Analysis, and Response System (MARS)		Cisco SMARTnet or SP Base Service

CiscoWorks Wireless LAN Solution Engine and CiscoWorks Wireless LAN Solution Express	SAS*	Cisco SMARTnet or SP Base Service*
CiscoWorks Network Compliance Manager	SAS	
Cisco Network Registrar	SAS	
Cisco Mobile Wireless Transport Manager	SAS	

*Products with SAS or SASU and Cisco SMARTnet or SP Base Service have hardware devices and software applications. Cisco SMARTnet or SP Base Service is the support service for the hardware and OS and SAS is the support for the software application. Both are required to ensure that the product is completely covered.
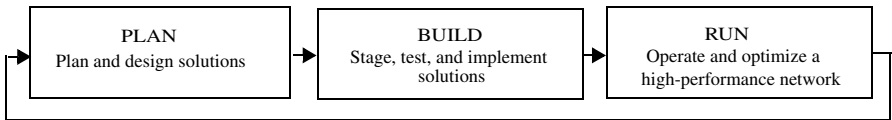
Chapter 10: Services

Services from Cisco and our partners enable you to realize the full business value of your technology investments by harnessing the network as a powerful business platform enabled by smart, personalized services that solve your toughest business challenges.

Backed by deep networking expertise and a broad ecosystem of partners, Cisco Services enable you to successfully plan, build, and run your network as a powerful business platform. Whether you are looking to quickly seize new opportunities to meet rising customer expectations, improve operational efficiency to lower costs, mitigate risk, or accelerate growth, we have a service that can help you.

> **Put Cisco expertise to work for you:**
> - Faster Time to Value
> - Better Serve Your Customers
> - Improve Operational Efficiency'
> - Accelerate Growth
> - Mitigate Risk

Plan, Build, Run Your Network

PLAN	BUILD	RUN
Plan and design solutions	Stage, test, and implement solutions	Operate and optimize a high-performance network

Plan

Early preparation, planning, and sound design are critical—whether you are revamping your architecture or integrating new technologies. Cisco and our partners can work with you to explore your business opportunities and challenges, design a solution architecture, and develop a strategy and architecture roadmap tied to your business goals. To help equip your staff to manage the network and support new technologies and applications, we can review your operational processes pertaining to critical areas of service management and provide recommendations.

These services will help you:

- Reduce cost and optimize performance
- Effectively manage change
- Smoothly integrate new technologies
- Enhance design and implementation value of migrations and ongoing operations
- Meet business requirements with proven tools and methodologies
- Deploy fully tested network solutions

Build

Services from Cisco and our partners help you adapt the implementation to your requirements to quickly and cost-effectively deploy a fully integrated solution. These services can simplify the migration to new technologies and assist your staff with configuration and post deployment validation. Based on proven methodologies and deep networking expertise, these services can help you take better advantage of your product features and benefits.

Run

Cisco and our partners have a portfolio of technical, remote management and optimization services that help maintain the health and performance of every Cisco product.

Technical Services

Technical services range from traditional maintenance to proactive and predictive services that utilize smart services capabilities. These capabilities provide actionable, proactive intelligence to help you discover, predict, and resolve network issues faster; improve network availability, and lower operating costs. Technical services help achieve the best possible network and application performance.

Figure 10-1: Technical Services Industry-leading Capabilities
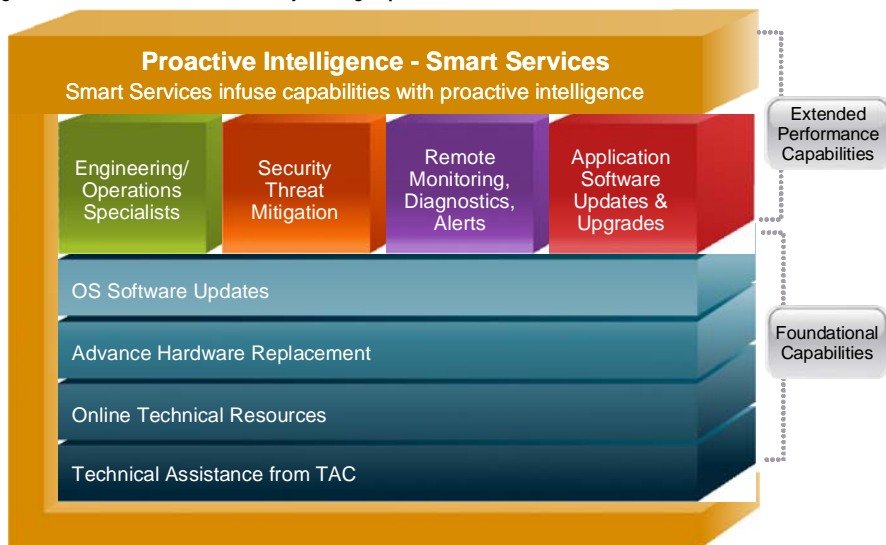
Cisco Technical Services help:

- Increase network uptime, operational efficiency, and reliability
- Maintain business continuity
- Strengthen IT security and compliance
- Lower operational costs
- Extend the value of your IT investments

Optimization Services

Optimization services can help your network remain optimized to support your business objectives. We share knowledge and leading practices, complementing your team's experience. Advanced technology optimization services are also available to help improve the performance of all the technologies on your network.

Our team of professionals complements your team and the Cisco partners you work with as we help you to:

- Strengthen your infrastructure
- Adopt new security solutions and smoothly integrate them into your network
- Improve availability and support for wireless network devices
- Prepare your network environment to support new technologies and applications and ensure alignment of your business and technical requirements

Remote Management Services

Cisco Remote Management Services simplify the adoption and ongoing management of Cisco Advanced Technologies, while enhancing the business benefits of your network and significantly reducing your total cost of ownership (TCO). Built upon the principles of co-management and out-tasking, Cisco Remote Management Services offer a happy medium between complete outsourcing and self-management. We act as an extension of your internal IT team. You retain access and control. Together we anticipate, identify, and resolve issues faster, more accurately, less expensively, and with more visibility.

Finding the Right Service

The following services are available for enterprise, service provider, and small and medium business customers:

- Cisco SMARTnet Service—Offers immediate access to Cisco engineers and an extensive range of technical resources for rapid issue resolution, flexible device-by-device coverage, and premium service options. The Cisco SMARTnet Onsite Service option provides a field engineer at your location for replacement parts installation. Smart Call Home, an embedded support feature of Cisco SMARTnet, provides proactive diagnostics, alerts, and remediation capabilities for call-home enabled devices.
- Cisco SP Base Service—Gives service providers (SPs) anytime access to Cisco engineers and Cisco.com resources to help ensure the fast, expert response needed to resolve critical network issues. The Cisco SP Base Onsite option adds the services of a trained field engineer to install replacement parts on location.
- Cisco Smart Care Service—Gives small and medium-sized business (SMB) customers proactive support for the entire Cisco network in a single contract. Increases network visibility; supports continuous improvement; and verifies network security, reliability, and functionality.

- Cisco Smart Foundation Service—Provides cost-effective network support on select devices for SMB customers.
- Cisco Software Application Support Services—Strengthens the availability, functionality, and security of your Cisco software applications with Cisco Software Application Support (SAS) Service, Cisco Software Application Support plus Upgrades (SASU) Service, and Cisco Unified Communications Essential Operate Service (ESW).
- Cisco Focused Technical Support Services—Expedites the resolution of network operations issues with priority handling by Cisco network experts who have comprehensive knowledge of the customer's network. Cisco SMARTnet or SP Base is a prerequisite for this service.

Cisco Technical Services also include the following technology-specific services:

- Cisco Unified Communications Operate Services—Maintains high availability, security, and operational efficiency of Cisco Unified Communications solutions.
- Cisco TelePresence™ Essential Operate Service—Provides system-level technical support that safeguards critical components and resolves issues with your Cisco TelePresence solution.
- Cisco Services for IPS—Keeps your Cisco Intrusion Prevention System (IPS) solution current on the latest threats so malicious or damaging traffic is accurately identified, classified, and stopped.
- Cisco Security IntelliShield Alert Manager Service—Provides easy access to customized, timely, accurate, vendor-neutral security intelligence to prevent, mitigate, and quickly remediate potential attacks.
- Cisco SMARTnet Service for SBCS—Delivers rapid issue resolution and complete solutions-level technical support for the Smart Business Communications System (SBCS).
- Cisco Unified Computing Support and Warranty Services—Helps you get the most from your unified computing investment with multiple service levels offering features tailored for unified computing needs.
- Cisco Remote Management Services—Provides 24-hour remote monitoring, management, and issue resolution for unified communications (Cisco Unified Communications Remote Management Services) and security applications (Cisco Security Remote Management Services).

To find the right technical service for any Cisco product, use the Service Finder tool at http:// www.cisco-servicefinder.com. Enter a product description or SKU or search by product series family for a list of suggested services and support coverage options.

For More Information

- Cisco Customers—Contact your Cisco representative or authorized Cisco partner to discuss recommended services to protect and extend your technology investment. To learn more about Cisco Services, visit http://wwwcisco.com/go/services.
- Locate a Cisco Partner—For customers looking for a Cisco Partner who will help you with specialized network design, consultation, installation and support services, visit http://www.cisco.com/go/partnerlocator.
- Cisco Authorized Partners—If you are an authorized partner, find information and resources to help you develop, sell and/or deliver services for Cisco products and solutions at http://www.cisco.com/go/partnerservices.