



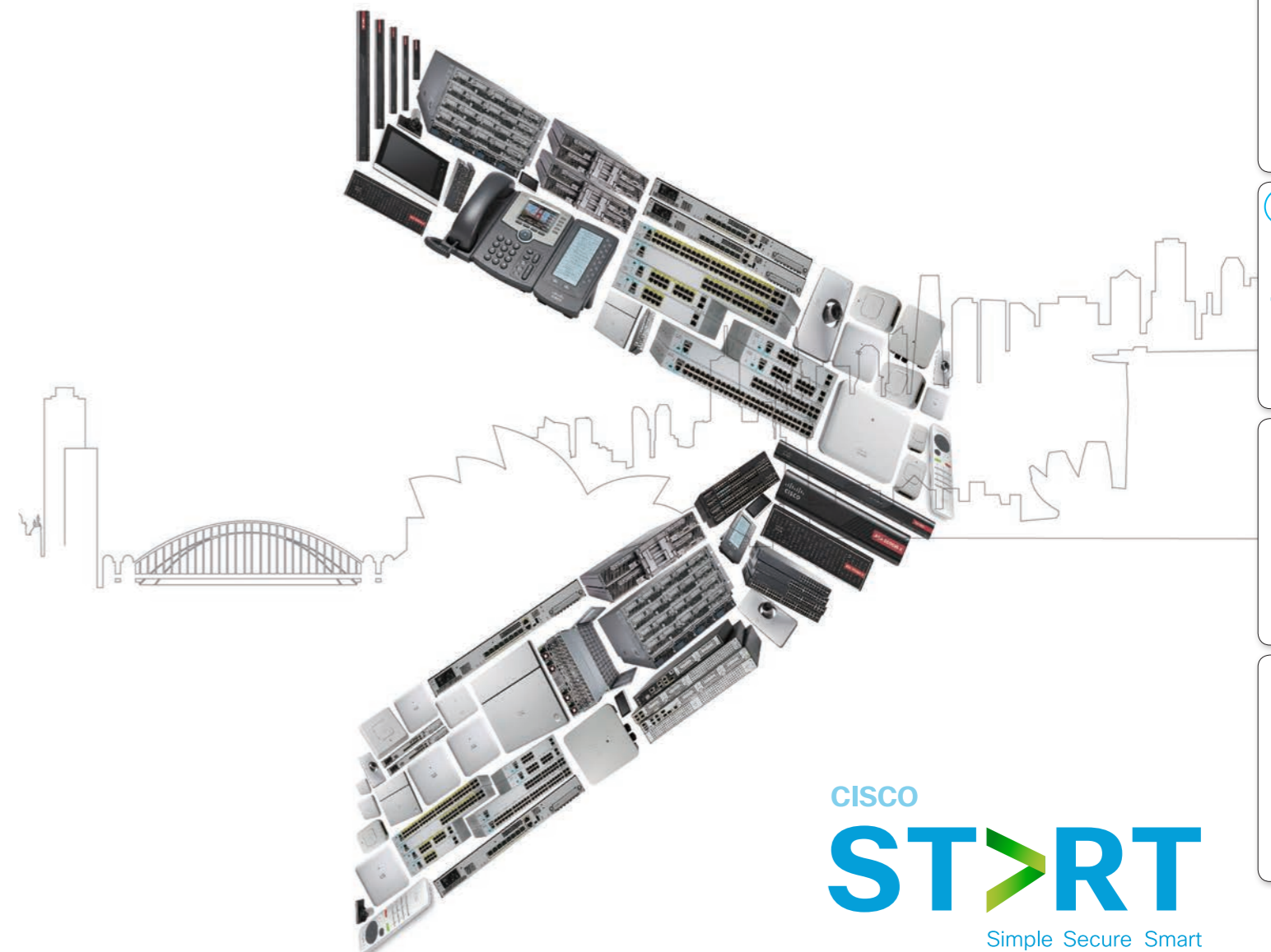
Cisco ST>RT Catalog

Asia Pacific

Vol.1 2016 December - 2017 March

Cisco ST>RT Website & Helpline

Country	Website	Helpline
Australia	http://www.cisco.com/au/ciscostart	csg-au@cisco.com
Japan	http://www.cisco.com/jp/go/start	-
India	http://www.cisco.com/in/ciscostart	csg-in@cisco.com
Indonesia	http://www.cisco.com/id/ciscostart	csg-id@cisco.com
Korea	http://www.cisco.com/kr/ciscostart	csg-kr@cisco.com
Malaysia	http://www.cisco.com/my/ciscostart	csg-my@cisco.com
New Zealand	http://www.cisco.com/au/ciscostart	csg-nz@cisco.com
Philippines	http://www.cisco.com/ph/ciscostart	csg-ph@cisco.com
Singapore	http://www.cisco.com/sg/ciscostart	csg-sg@cisco.com
Thailand	http://www.cisco.com/th/ciscostart	csg-th@cisco.com
Vietnam	http://www.cisco.com/vn/ciscostart	csg-vn@cisco.com



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

*THERE'S NEVER BEEN A BETTER TIME
to start your IT journey with Cisco*



Secure



Connect



Collaborate



Compute

Meraki

Services

The Cisco Start Journey from Japan



Cisco Start in Japan: Helping Small Business Think Big



Michiko Kamata, Marketing Director, Cisco Japan

"Today, small and midium-sized businesses (SMBs) spend USD \$ 900 million to 1 billion in IT every year - an opportunity Cisco had been missing out on because of its premium image," said Michiko Kamata, Marketing Director, Cisco Japan. "For Cisco to enter this market, we knew we had to come up with something different to make our high-end technology accessible to every business. That is why we launched Cisco Start in Japan in September 2015, a complete portfolio of networking solutions, affordable and tailor-made for SMBs. Cisco Start is simple, smart and secure, making it a lot more easy for SMBs and midmarkets to attain the benefits of digitization. Cisco Start is gaining traction in the SMB market in Japan, where we'll continue to expand the portfolio, IT capabilities and Cisco support."

"We are committed to our customers regardless of their size," said Dave West, Vice President of Cisco APJ, Architecture Sales and CTO. "For SMBs and midmarket businesses in Japan, we wanted to make it very easy for them to use and deploy Cisco technology - as easy as 5 steps and all in Japanese. The simplicity, quality and reliability of Cisco ST>RT portfolio results of decades of expertise and close relationship with our partners and distributors. Together, we will continue very focused on the SMB market in Japan and will continue to invest in the best products and solutions to continuously meet their specific needs."

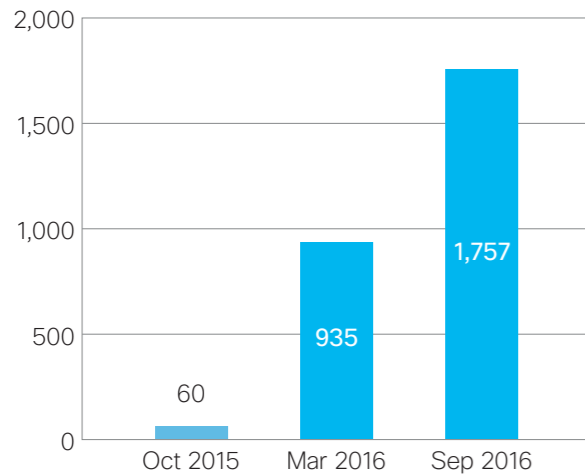


Dave West, Vice President of Cisco APJ, Architecture Sales and CTO

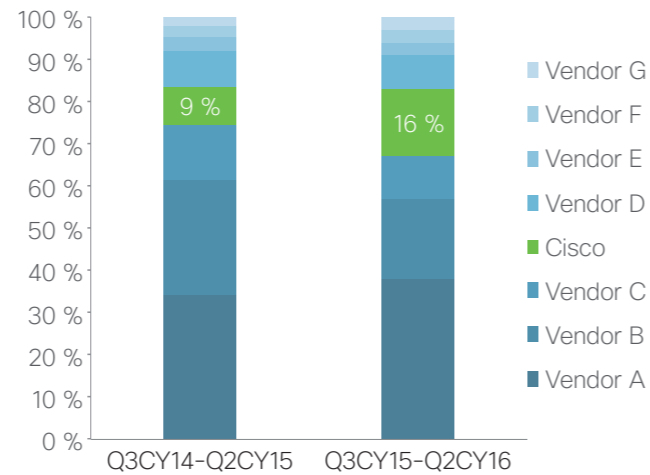
1 Year of Cisco Start in Japan

Cisco Start exceeded all expectations in Japan. In 1 year only, thousands of small-medium sized companies have deployed Cisco Start, the number of partners selling this portfolio increased from 60 to 1,757 and our market share in SMB routing category went up by 7 points.

■ Number of Cisco Start Partner Companies in Japan

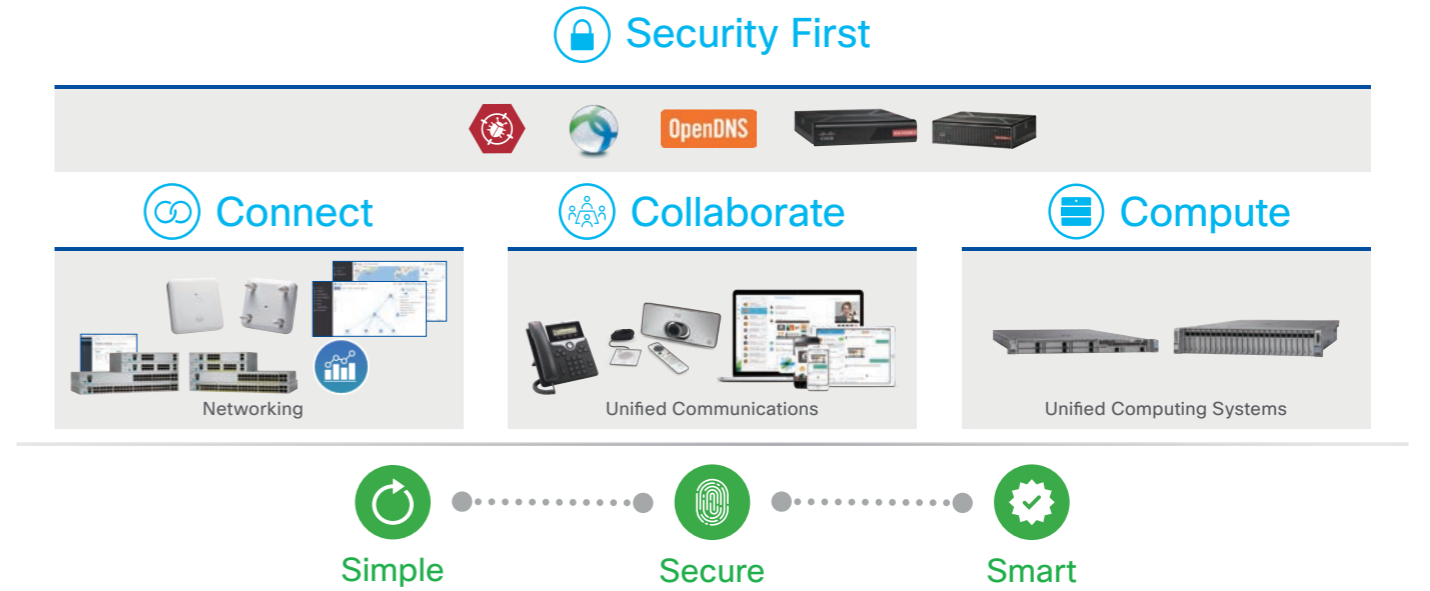


■ Our Market Share in SMB Routing Category*1



*1 Source: IDC Japan, Japan Quarterly Router Tracker 2016Q2.

Cisco ST>RT Portfolio Overview



Cisco ST>RT Catalog - Asia Pacific

Vol.1 2016 December - 2017 March

Index



APJ Cisco ST>RT Team

Cisco ST>RT
Today, Technology is Giving
Special Advantage to the Small

P04

What's New

P06

1 Training Provider
5 Architecture Specializations
Enterprise Networking • Security • Collaboration
• Data Center • Service Provider
www.gkapac.com

Global Knowledge



Security

Cisco Umbrella	P09
Cisco Firepower Next-Generation Firewall (NGFW)	P10
Cisco AnyConnect Secure Mobility Client	P12
Cisco Advanced Malware Protection (AMP) for Endpoints	P13



Switches

Cisco 95 - 500 Series	P16
Cisco Catalyst 2960-L Series	P19
Cisco Catalyst 2960-Plus Series	P19
Cisco Catalyst 2960-CX Series	P21
Cisco Catalyst 3560-CX Series	P21
Cisco Catalyst 2960-X Series	P22
Cisco Catalyst 3650 Series	P23
Cisco Catalyst 3850 Series	P25
Modules & Accessories	P27

Wireless

Cisco WAP Access Points	P30
Cisco Aironet Access Points	P31
Cisco Wireless Controllers	P36
Mobility Services & Wireless Management	P38

Routers

Cisco RV Series	P42
Cisco ISR 800 Series	P43
Cisco ISR 4000 Series	P44
Modules & Accessories	P45



Collaboration

Cisco Business Edition 6000 (BE6000)	P49
Cisco IP Phones	P50
Cisco TelePresence SX Series	P52
Cisco Jabber	P53
Cisco WebEx	P54
Cisco Spark	P55



Servers - Unified Computing

Cisco UCS C-Series Rack Servers	P56
---------------------------------------	------------

Meraki

Cisco Meraki	P58
--------------------	------------

Services

Cisco Smart Net Total Care Service	P62
------------------------------------------	------------



Secure



Connect



Collaborate



Compute

Meraki

Services

Today, Technology is Giving Special Advantage to the Small

Tharman Shanmugaratnam, Deputy Prime Minister of Singapore spoke to Channel NewsAsia in March 2016 suggesting "Technology is in fact today, much more of an enabler for small players than it used to be. The big players always had an advantage because technology was expensive, it required large systems to be set up, investing over a period of time. There was always an advantage in being large. But today, technology is giving special advantage to the small."



Kartika Prihadi
Director of Cisco APJ Commercial Sales

— Why Cisco ST>RT?

"Cisco in December 1st, 2016 launched Cisco ST>RT, a new initiative to support owners of Asia's midmarket and small and medium-sized businesses (SMBs) to take advantage of this region's booming digitization," explained Kartika Prihadi, Director of Cisco APJ Commercial Sales. "Cisco ST>RT provides midmarket and SMBs businesses with access to a suite of simple, secure and smart enterprise-class technologies, specifically tailored to their business size and priced to match."

More specifically, Cisco ST>RT offers:

- The right-sized, right-priced solutions wherever they are on their digital journey
- Enhanced operations, services and processes to reduce overheads and TCO
- Improved workforce productivity and innovation to meet the increased demands of today and the evolving opportunities of tomorrow

When customers, distributors and partners think of Cisco ST>RT, they think of a portfolio of products that:



Connect

Bring people together by removing the barriers to communication.



Collaborate

Empower people to engage and innovate.



Compute

Enable companies to accelerate business.



Simple

Easy to setup, manage and monitor. The latest technology tailored to any sized business. Flexible On-Premise and Cloud Solutions.



Secure

Security first network. Delivers effective security with best of breed portfolio. Extends security everywhere to protect your network, your data and your business.



Smart

User-friendly dashboards to manage devices from a single location. Provisioning, reporting and insights on hand.

Why Cisco ST>RT? Cisco ST>RT makes it easy for you. It is...



Yun Bai
Business Development Manager, Cisco APJ Architecture Sales

— About Cisco ST>RT Portfolio

"Why do SMB market businesses often fail to use the full potential of IT?" asked Yun Bai, Business Development Manager, Cisco APJ Architecture Sales. "It can be the unsuccessful implementation or deployments they had experienced in the past, management burdens got added on top of an already existing complex operation, or the absence of IT savvy talents. If one person in the company has to look after business applications, and all IT devices, including IT clients, in addition to the network, then it is likely the network will be under invested due to lack of visibility. Now Cisco ST>RT is offering something to everyone starting from supporting entrepreneurs and start ups. For example, whether you are a company of 5 or 500 employees, security risks remain the same. Cisco ST>RT has affordable Enterprise quality security solutions to address that." She continues, "Not only affordable, but make it simple and smart. For example, want to set up a wireless network? Easy, it can be provisioned in less than 10 minutes; Install a switch? Easy, seven steps; Add a security appliance across the network? Nine clicks. That's the beauty of our technology - it takes the hard work out of IT."

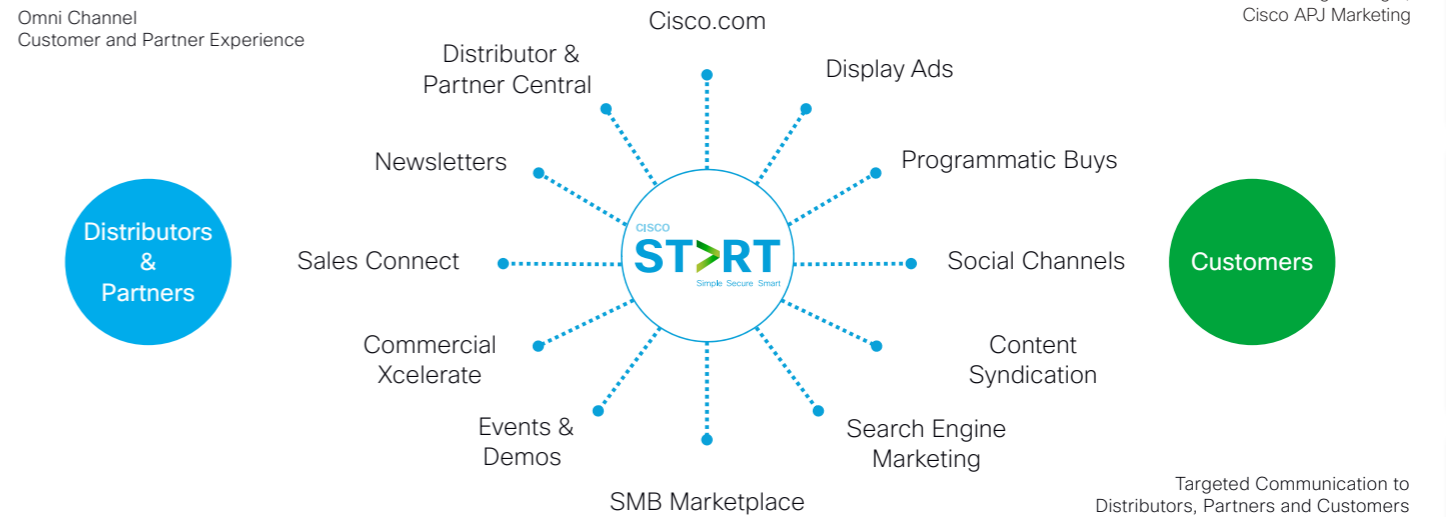
— About Cisco ST>RT Marketing

"This is a fast-paced digital age," explained Sharon Koo, Partner Marketing Manager, Cisco APJ. "People are increasingly connected, collaboration becomes even faster and new services continue to evolve. As midmarket and SMBs strive to meet the demands of digitization in order to remain competitive, they are looking for the right technology partner to help them build the foundation for digital businesses. That's why we are delighted to introduce Cisco ST>RT, a portfolio of enterprise-class technology that is fit and made for midmarket and SMBs."

She continues "In addition, we know that 60 % of buying decisions are made online, that is why it is crucial that we take an Omni-channel approach to how we are making Cisco ST>RT available to our Distributors, Partners and Customers."



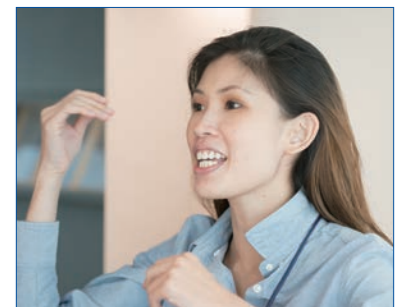
Sharon Koo
Partner Marketing Manager, Cisco APJ Marketing



"There's never been a better time to start your IT journey with Cisco ST>RT." — We are APJ Cisco Start Team

— About Cisco ST>RT Operations

"Cisco ST>RT is our renewed focus to bring a total simplified customer, partner and distributor experience, complementing to our suite of simple, safe, and secure enterprise-class technologies," asserted Celine Man, Operations Manager, Cisco APJ. "We pay attention to any given task or interaction across all touchpoints; how many steps does it take to get what you need and how long does that take? We have done numerous changes, and you will continue to see evidence of our efforts to simplify your Cisco ST>RT through your IT journey with us."



Celine Man
Operations Manager, Cisco APJ Commercial Sales



What's New

This catalog introduces the full lineup of new products designed to deliver enterprise-class network solutions that help steer small and medium-sized companies toward business success.

 Please contact your authorized Cisco partner, authorized Cisco distributor or Cisco reseller for details on the release date.

Switches

Build Your Enterprise-class Network with Simplicity and Value

The **Cisco Catalyst 2960-L Series** are fixed-configuration, Gigabit Ethernet switches that provide entry-level enterprise-class Layer 2 access for branch offices, conventional workspaces, and out-of-wiring closet applications. Designed for operational simplicity to lower total cost of ownership, they enable secure, and energy-efficient business operations with a range of Cisco IOS Software features.

Cisco Catalyst 2960-L Series*  P19

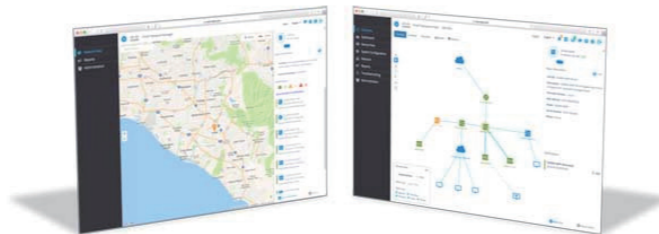


* Not orderable in Australia and New Zealand.

Manage One Network, Not a Collection of Devices

In addition to the proven **Cisco FindIT Network Discovery Utility**, Cisco introduces the new network management tool, **Cisco FindIT Network Manager**. It is purpose-built for managing networks of Cisco 100 to 500 Series switches, routers, and wireless access points. You can proactively manage the network instead of just reacting to events.

Cisco FindIT Network Manager  P17



Routers

4G LTE 2.5 Integrated Services Routers

The **Cisco 890G Series 4G LTE 2.5 Integrated Services Routers (ISRs)** and the **Cisco 819 Non-Hardened 4G LTE 2.5 M2M ISRs** offer support for integrated **4G LTE wireless WAN** (mobile broadband backhaul) and cutting-edge capabilities. These ISRs are the industry leader in bringing enterprise-grade wired-line-like functionality such as quality of service (QoS) for cellular, Multi-VRF, advanced VPN, and unified communications solutions over LTE.

Cisco ISR 819G 4G LTE 2.5 M2M Model  P43
Cisco ISR 819G 4G LTE 2.5 Wireless M2M Model


Cisco ISR 897VAG/898EAG/899G 4G LTE 2.5 Model  P43



Security

OpenDNS Umbrella is now Cisco Umbrella

The **Cisco Umbrella** is a cloud security platform that provides the first line of defense against threats on the internet wherever users go. Our global infrastructure handles over 80 billion internet request a day, which our security engine analyzes to learn where attacks are being staged even before the first victim is hit.

Cisco Umbrella  P09




208.67.222.222 + 208.67.220.220


Meraki

New Models for Wireless & Switching

The **Cisco Meraki MR30H/MR33/MR84** are new cloud-managed MU-MIMO 11ac Wave 2 access points. Specifically, the **Cisco Meraki MR84** is designed for high-performance next-generation deployments — in high-density environments with tough RF — it offers a combined dual-radio aggregate frame rate of **2.5 Gbps**, and integrates a **multigigabit** uplink that ensures maximum capacity for this high performance 11ac Wave 2 hardware configuration.

Cisco Meraki MR30H/MR33/MR84  P60
Cloud Managed Wireless Access Point

The **Cisco Meraki MS225/250** are new cloud-managed layer 2 access switches and basic layer 3 access switches. They are the newest Meraki cloud managed switches, replacing the MS220 and MS320 Switches. The MS225/250 Switches now support SFP+ up-links and physical 80 Gbps stacking.

Cisco Meraki MS225/250  P60
Cloud Managed Switches



Meraki Magic for the Video Security World

With an unobtrusive industrial design suitable for any setting—and available in indoor (**MV21**) and outdoor (**MV71**) models—the **Cisco Meraki MV Cloud Managed Security Cameras** simplify and streamline the unnecessarily complex world of security cameras. By eliminating servers and video recorders, they free administrators to spend less time on deployment and maintenance, and more time on meeting business needs.

Cisco Meraki MV21/71  P61
Cloud Managed Security Cameras*



* Contact your Cisco Meraki sales representative for orderability in your country.



Why Cisco?

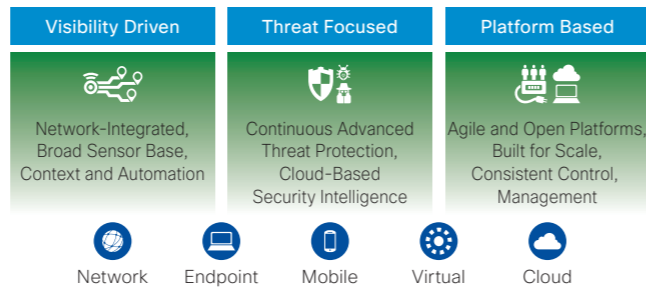
Today's threat landscape is nothing like that of 10 years ago. Simple attacks that caused containable damage have given way to modern, sophisticated, and well-funded cybercrime operations capable of disrupting and causing major loss to organizations and national infrastructure. These are difficult to detect, can remain in networks for long periods of time, and amass resources to launch attacks elsewhere.

Legacy protection methods that exclusively rely on detection and blocking are no longer adequate. It's time for a new security model that addresses the full attack continuum: before, during and after an attack.

To erect the new security model, focus on three strategic imperatives:

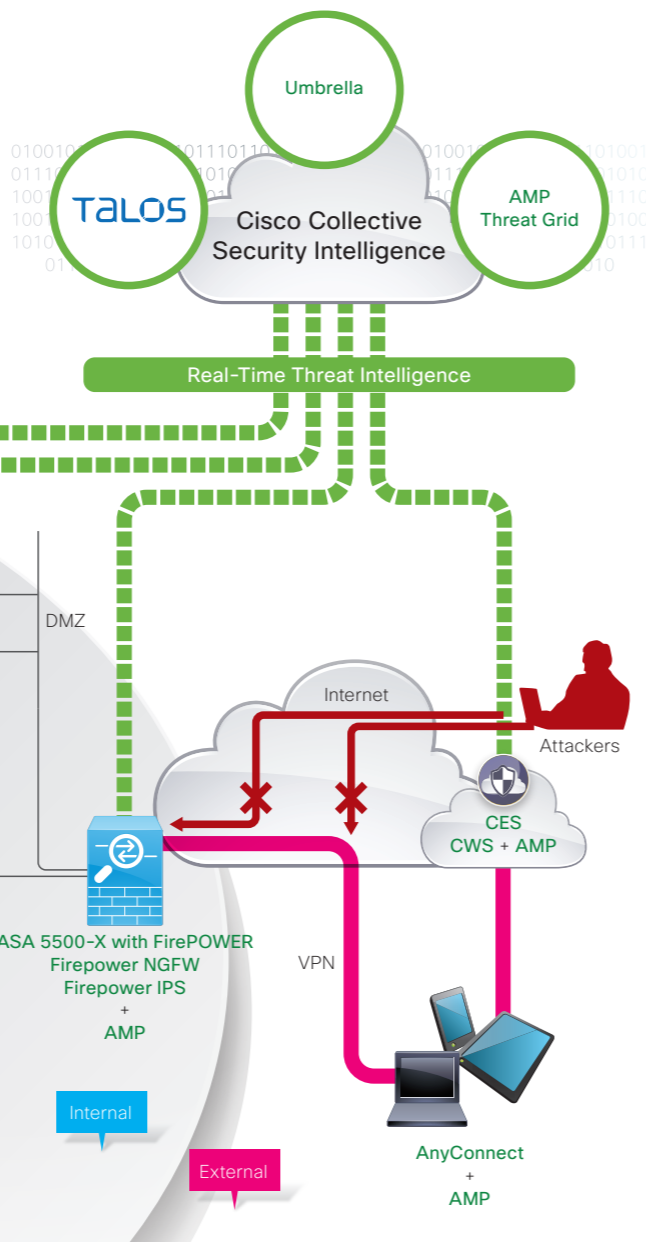
- Visibility Driven**
 Get global intelligence and context for deeper insights and better decisions.
- Threat Focused**
 Detect, understand, and stop threats across the entire attack continuum
- Platform Based**
 Reduce fragmentation by using a platform-based approach to protect the network, devices, and the cloud.

Across-the-board protection (spanning the attack continuum) requires the integration of technologies with different areas of focus. The Cisco security portfolio, offers a comprehensive range of threat-centric cybersecurity solutions that fight advanced malware, targeted attacks, and APTs. These visibility-driven, threat-focused, and platform-based solutions offer the industry's broadest set of enforcement and remediation options at attack vectors where threats manifest.

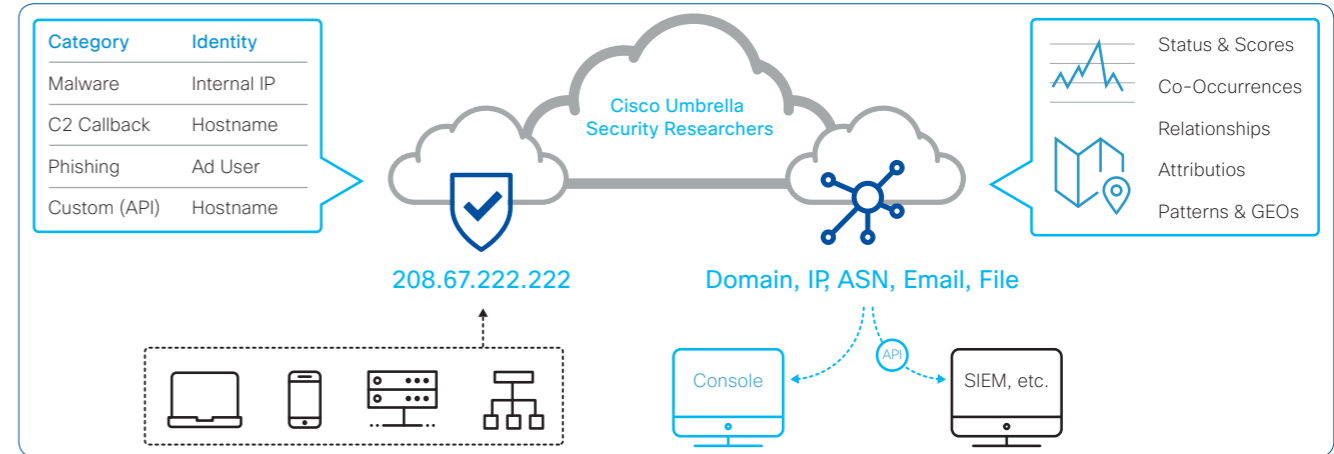


For details on Cisco Security, visit the following Web site:

<http://www.cisco.com/go/security>



Cisco Umbrella NEW



The Cisco Umbrella is a cloud security platform that provides the first line of defense against threats on the internet wherever users go. Our global infrastructure handles over 80 billion internet request a day, which our security engine analyzes to learn where attacks are being staged even before the first victim is hit.

- Cisco Umbrella**
 - First Line of Defense against Threats**
 Block malware, phishing, and command & control callbacks over any port or protocol—before threats reach you.
 - Visibility & Protection Everywhere**
 Gain the visibility needed to protect internet access across all devices on your network, all office locations, and roaming users.
 - Integrations to Amplify Existing Investments**
 Integrate with existing tools and feeds to extend protection and enrich your incident response data.
- Cisco Umbrella Investigate**
 - A Live Graph of Global & Historical Internet Activity**
 The most complete view of the relationships and evolution of internet domains, IPs, networks, and malware.
 - Pivot through Attackers' Infrastructures**
 Use our dynamic search engine or RESTful API to mine our diverse data sets and statistical models.
 - Enrich Your SIEM Data and Speed Up Workflows**
 Use our global context and predictive intelligence to prioritize incident response and stay ahead of attacks.

SKU	Description
UMB-ROAM	Umbrella Roaming Per User License

SKU	Description
UMB-BRAN-4321	Umbrella Branch License for Cisco ISR 4321
UMB-BRAN-4331	Umbrella Branch License for Cisco ISR 4331
UMB-BRAN-4351	Umbrella Branch License for Cisco ISR 4351
UMB-BRAN-4431	Umbrella Branch License for Cisco ISR 4431
UMB-BRAN-4451	Umbrella Branch License for Cisco ISR 4451

SKU	Description
UMB-PROFESSIONAL	Umbrella Professional Per User License

SKU	Description
UMB-INSIGHTS-K9	Umbrella Insights Per User License

SKU	Description
UMB-PLATFORM-K9	Umbrella Platform Per User License

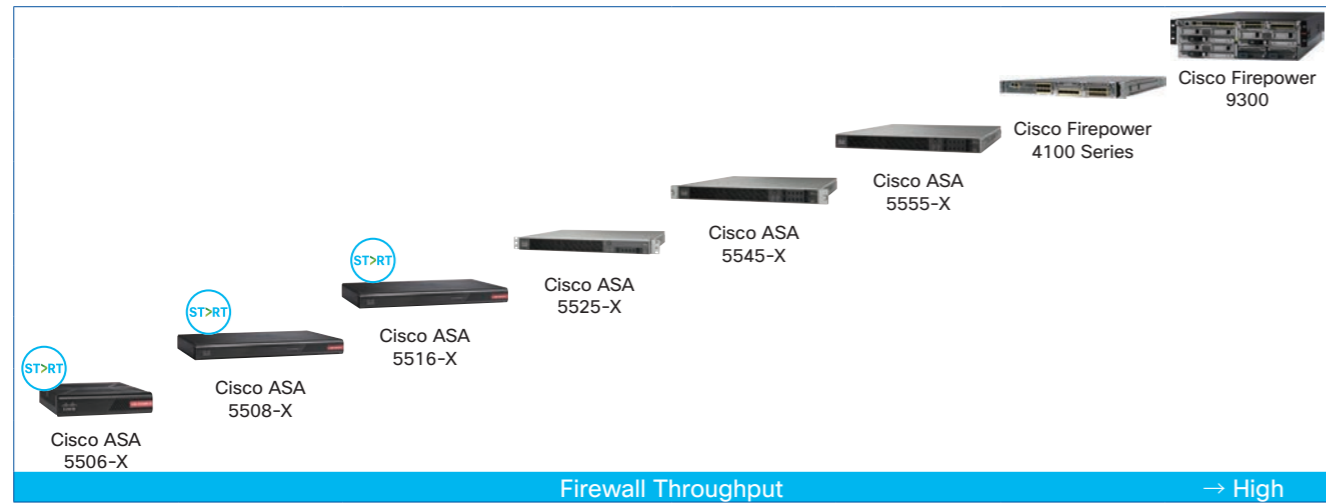
■ Cisco Umbrella Package Comparison

Package		Roaming	Branch	Professional	Insights	Platform
Best for		Cisco NGFW/ AnyConnect	Cisco ISR 4000 Series	Small Companies	Mid-sized Companies	Advanced Security Teams
Performance	100 % Cloud — No Hardware to Install or Software to Maintain 100 % Uptime — Resolves 80 B+ Requests Daily with No Added Latency 7 M+ Unique Malicious Destinations Enforced Concurrently across 25 Data Centers	●	●	●	●	●
Protection	Add a New Layer of Predictive Security for Any Device, Anywhere Prevent Malware, Phishing, and C2 Callbacks over Any Port Enforce Acceptable Use Policies Using 60 Content Categories	● ^{*2}	● ^{*3}	●	●	●
Enforcement	Block Malicious Domain Requests & IP Responses at the DNS-Layer Block Malicious URL Paths & Direct IP Connections at the IP-Layer	●	●	●	●	●
Visibility	Real-Time, Enterprise-Wide Activity Search & Scheduled Reports Identify Targeted Attacks by Comparing Local vs. Global Activity Identify Cloud & IoT Usage Risks by Reporting on 1800+ Services	●	●	●	●	●
Management	Custom Block/Allow Lists, Built-in Block Pages, and Bypass Options Enforcement & Visibility per Internal Network or AD User/Group Retain Logs Forever by Integrating with Your Amazon S3 Bucket	● ^{*4}	●	●	●	●
Platform Package Exclusive	API-based Integrations to Enforce & Manage 3rd-party Block Lists Investigate Console — Threat Intelligence on All Domains, IPs, & File Hashes	-	-	-	●	●

*1 UMBRELLA-SUB is required. *2 Off-network only. *3 On-network only. *4 Only has allow list and 1 built-in block page. *5 Only per internal network (no Active Directory).

Next-Generation Firewalls

Cisco ASA 5500-X with FirePOWER Services



The Cisco ASA 5500-X with FirePOWER Services is the industry's first fully integrated, threat-focused next-generation firewall with unified management. It includes **Application Visibility and Control (AVC)**, optional **Firepower Next-Generation IPS (NGIPS)**, **Cisco Advanced Malware Protection (AMP)**, and **URL Filtering**. Cisco Firepower NGFW provides advanced threat protection before, during, and after attacks.

For details on Cisco ASA 5500-X with FirePOWER Services, visit the following Web site:

<http://www.cisco.com/go/asa>

- **Stop more threats:** Contain known and unknown malware with leading Cisco AMP and sandboxing. Get application firewalling (AVC) for 4,000 commercial applications, plus additional custom applications.
- **Gain more insight:** Gain superior visibility into your environment with Cisco Firepower NGIPS. Automated risk rankings and impact flags identify priorities for your team.
- **Detect earlier, act faster:** The Cisco Annual Security Report identifies a 100-day median time from infection to detection, across enterprises. Cisco reduces this time to less than a day.
- **Reduce complexity:** Get unified management and automated threat correlation across tightly integrated security functions, including application firewalling, NGIPS, and AMP.
- **Get more from your network:** Enhance security, and take advantage of your existing investments, with optional integration of other Cisco and third-party networking and security solutions.

Cisco ASA 5500-X with FirePOWER Services (1 of 2)

SKU	Description	Dimensions (Height x Width x Depth)	Maximum Weight
ASA5506-K9	Cisco ASA 5506-X with FirePOWER Services	4.37 x 19.99 x 23.44 cm	1.81 kg
ASA5506W-x-K9	Cisco ASA 5506W-X with FirePOWER Services Wireless Model	4.37 x 19.99 x 23.44 cm	1.81 kg
ASA5506H-SP-BUN-K9	Cisco ASA 5506H-X with FirePOWER Services Hardened Model	6.90 x 22.98 x 22.98 cm	3.18 kg
ASA5508-K9	Cisco ASA 5508-X with FirePOWER Services	4.37 x 43.69 x 28.67 cm	3.63 kg
ASA5516-K9	Cisco ASA 5516-X with FirePOWER Services	4.37 x 43.69 x 28.67 cm	3.63 kg

Cisco ASA 5500-X with FirePOWER Services (2 of 2)

SKU	Throughput				AVC Sessions		VPN Tunnels		Ports		Power Supply	Rack mount
	FW	FW AVC	FW AVC IPS	VPN	Concurrent Sessions	New Connections per Second	Site-to-Site	Remote Access	GE			
ASA5506-K9	750 Mbps	250 Mbps	125 Mbps	100 Mbps	20,000	5,000	10	50	8	1 AC	1 RU	
ASA5506W-x-K9	750 Mbps	250 Mbps	125 Mbps	100 Mbps	20,000	5,000	10	50	8	1 AC	1 RU	
ASA5506H-SP-BUN-K9	750 Mbps	250 Mbps	125 Mbps	100 Mbps	50,000	5,000	50	50	4	1 AC	1 RU	
ASA5508-K9	1 Gbps	450 Mbps	250 Mbps	175 Mbps	100,000	10,000	100	100	8	1 AC	1 RU	
ASA5516-K9	1.8 Gbps	850 Mbps	450 Mbps	250 Mbps	250,000	20,000	300	300	8	1 AC	1 RU	

Cisco ASA Transition Guide

Legacy Models	FW + AVC	FW + AVC + IPS	Current Models	FW + AVC	FW + AVC + IPS
Cisco ASA 5505	-	-	Cisco ASA 5506-X	250 Mbps	125 Mbps
Cisco ASA 5510	-	-	Cisco ASA 5508-X	450 Mbps	250 Mbps
Cisco ASA 5512	300 Mbps	150 Mbps	Cisco ASA 5516-X	850 Mbps	450 Mbps
Cisco ASA 5515-X	500 Mbps	250 Mbps	Cisco ASA 5516-X	850 Mbps	450 Mbps

Cisco FirePOWER Services License

The Cisco ASA 5500-X with FirePOWER Services ship with a base license for **Application Visibility and Control (AVC)**. Optional subscriptions for **Next-Generation IPS (NGIPS)**, **Cisco Advanced Malware Protection (AMP)**, and **URL Filtering (URL)** can be added to the base configuration for advanced functionality.

- **Application Visibility and Control (AVC)**
Supports more than 4,000 application-layer and risk-based controls that can launch tailored intrusion prevention system (IPS) threat detection policies to optimize security effectiveness.

One-year, 3-year, and 5-year subscriptions for each FirePOWER Services are available.

- **Next-Generation IPS (NGIPS)**
Provides highly effective threat prevention and full contextual awareness of users, infrastructure, applications, and content to detect multivector threats and automate defense response. The NGIPS licenses can be added alone to the base Cisco FirePOWER Services licenses or bundled with AMP, or with AMP and URL licenses.
- **Cisco Advanced Malware Protection (AMP)**
Delivers inline network protection against sophisticated malware and Cisco Threat Grid sandboxing. The AMP licenses can be added alone to the base Cisco FirePOWER Services licenses or bundled with NGIPS, or with NGIPS and URL licenses.
- **URL Filtering (URL)**
Adds the capability to filter more than 280 million top-level domains by risk level and more than 82 categories. The URL licenses can be added alone to the base FirePOWER Services licenses or bundled with NGIPS, or with NGIPS and AMP licenses.

Cisco FirePOWER Services License Comparison

Licenses	Characters Included in SKU	Next-Generation IPS (NGIPS)	Advanced Malware Protection (AMP)	URL Filtering (URL)
NGIPS License	TA	●	-	-
AMP License	AMP	-	●	-
URL License	URL	-	-	●
NGIPS & AMP License	TAM	●	●	-
NGIPS & URL License	TAC	●	-	●
NGIPS & AMP & URL License	TAMC	●	●	●

Cisco FirePOWER Services NGIPS License¹

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-TA-1Y	L-ASA5506-TA-3Y	L-ASA5506-TA-5Y	ASA 5506
L-ASA5506W-TA-1Y	L-ASA5506W-TA-3Y	L-ASA5506W-TA-5Y	ASA 5506W
L-ASA5506H-TA-1Y	L-ASA5506H-TA-3Y	L-ASA5506H-TA-5Y	ASA 5506H
L-ASA5508-TA-1Y	L-ASA5508-TA-3Y	L-ASA5508-TA-5Y	ASA 5508
L-ASA5516-TA-1Y	L-ASA5516-TA-3Y	L-ASA5516-TA-5Y	ASA 5516

Cisco FirePOWER Services NGIPS & AMP License⁴

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-TAM-1Y	L-ASA5506-TAM-3Y	L-ASA5506-TAM-5Y	ASA 5506
L-ASA5506W-TAM-1Y	L-ASA5506W-TAM-3Y	L-ASA5506W-TAM-5Y	ASA 5506W
L-ASA5506H-TAM-1Y	L-ASA5506H-TAM-3Y	L-ASA5506H-TAM-5Y	ASA 5506H
L-ASA5508-TAM-1Y	L-ASA5508-TAM-3Y	L-ASA5508-TAM-5Y	ASA 5508
L-ASA5516-TAM-1Y	L-ASA5516-TAM-3Y	L-ASA5516-TAM-5Y	ASA 5516

Cisco FirePOWER Services AMP License²

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-AMP-1Y	L-ASA5506-AMP-3Y	L-ASA5506-AMP-5Y	ASA 5506
L-ASA5506W-AMP-1Y	L-ASA5506W-AMP-3Y	L-ASA5506W-AMP-5Y	ASA 5506W
L-ASA5506H-AMP-1Y	L-ASA5506H-AMP-3Y	L-ASA5506H-AMP-5Y	ASA 5506H
L-ASA5508-AMP-1Y	L-ASA5508-AMP-3Y	L-ASA5508-AMP-5Y	ASA 5508
L-ASA5516-AMP-1Y	L-ASA5516-AMP-3Y	L-ASA5516-AMP-5Y	ASA 5516

Cisco FirePOWER Services NGIPS & URL License⁵

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-TAC-1Y	L-ASA5506-TAC-3Y	L-ASA5506-TAC-5Y	ASA 5506
L-ASA5506W-TAC-1Y	L-ASA5506W-TAC-3Y	L-ASA5506W-TAC-5Y	ASA 5506W
L-ASA5506H-TAC-1Y	L-ASA5506H-TAC-3Y	L-ASA5506H-TAC-5Y	ASA 5506H
L-ASA5508-TAC-1Y	L-ASA5508-TAC-3Y	L-ASA5508-TAC-5Y	ASA 5508
L-ASA5516-TAC-1Y	L-ASA5516-TAC-3Y	L-ASA5516-TAC-5Y	ASA 5516

Cisco FirePOWER Services URL License³

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-URL-1Y	L-ASA5506-URL-3Y	L-ASA5506-URL-5Y	ASA 5506
L-ASA5506W-URL-1Y	L-ASA5506W-URL-3Y	L-ASA5506W-URL-5Y	ASA 5506W
L-ASA5506H-URL-1Y	L-ASA5506H-URL-3Y	L-ASA5506H-URL-5Y	ASA 5506H
L-ASA5508-URL-1Y	L-ASA5508-URL-3Y	L-ASA5508-URL-5Y	ASA 5508
L-ASA5516-URL-1Y	L-ASA5516-URL-3Y	L-ASA5516-URL-5Y	ASA 5516

Cisco FirePOWER Services NGIPS & AMP & URL License⁶

SKU			Compatible Models
1-Year	3-Year	5-Year	
L-ASA5506-TAMC-1Y	L-ASA5506-TAMC-3Y	L-ASA5506-TAMC-5Y	ASA 5506
L-ASA5506W-TAMC-1Y	L-ASA5506W-TAMC-3Y	L-ASA5506W-TAMC-5Y	ASA 5506W
L-ASA5506H-TAMC-1Y	L-ASA5506H-TAMC-3Y	L-ASA5506H-TAMC-5Y	ASA 5506H
L-ASA5508-TAMC-1Y	L-ASA5508-TAMC-3Y	L-ASA5508-TAMC-5Y	ASA 5508
L-ASA5516-TAMC-1Y	L-ASA5516-TAMC-3Y	L-ASA5516-TAMC-5Y	ASA 5516

¹ L-ASAxxxx-TA= is required (The "xxxx" corresponds to the supported models). ² L-ASAxxxx-AMP= is required (The "xxxx" corresponds to the supported models). ³ L-ASAxxxx-URL= is required (The "xxxx" corresponds to the supported models). ⁴ L-ASAxxxx-TAM= is required (The "xxxx" corresponds to the supported models). ⁵ L-ASAxxxx-TAC= is required (The "xxxx" corresponds to the supported models). ⁶ L-ASAxxxx-TAMC= is required (The "xxxx" corresponds to the supported models).

VPN and Endpoint Security Clients

Cisco AnyConnect Secure Mobility Client



The **Cisco AnyConnect Secure Mobility Client** is a unified agent with remote access functionality, posture enforcement, web security features, and off-network security protection. It gives your IT department all the secure-access features necessary to provide a robust, user-friendly, and highly secure mobile experience.

The industry-leading Cisco AnyConnect Secure Mobility Client is a multifaceted endpoint software product. That means it not only provides VPN access through Secure Sockets Layer (SSL) and IPsec IKEv2 but also offers enhanced security through various built-in modules. These modules provide services that include compliance through the VPN and Cisco Identity Services Engine (ISE) posture along with web security, network visibility, off-network protection, and the Cisco Network Access Manager.

Cisco AnyConnect Secure Mobility Client is available across a broad set of platforms, including Windows, Mac OS X, Linux, iOS, Android, Windows Phone, BlackBerry, and Google Chrome.

Cisco AnyConnect License Comparison

	Plus	Apex
Device or System VPN (Including Cisco Phone VPN)	●	●
Third-Party IPsec IKEv2 Remote Access VPN Clients (Non-AnyConnect Client)	●	●
Per-Application VPN	●	●
Cloud Web Security and Web Security Appliance	●	●
Cisco Umbrella Roaming ¹	●	●
Network Access Manager	●	●
AMP for Endpoints Enabler ²	●	●
Network Visibility Module	-	●
Unified Endpoint Compliance and Remediation (Posture) ³	-	●
Suite B or Next-Generation Encryption (Including Third-Party IPsec IKEv2 Remote VPN Clients)	-	●
Clientless (Browser-based) VPN Connectivity	-	●
ASA Multicontext-mode Remote Access	-	●

Cisco AnyConnect Plus License (1 of 2)⁴

SKU	1-Year ⁵	3-Year ⁵	5-Year ⁵	User Range
L-AC-PLS-1Y-S1	L-AC-PLS-3Y-S1	L-AC-PLS-5Y-S1	25 to 99	
L-AC-PLS-1Y-S2	L-AC-PLS-3Y-S2	L-AC-PLS-5Y-S2	100 to 249	
L-AC-PLS-1Y-S3	L-AC-PLS-3Y-S3	L-AC-PLS-5Y-S3	250 to 499	

Cisco AnyConnect Apex License⁴

SKU	1-Year ⁷	3-Year ⁷	5-Year ⁷	User Range
L-AC-APX-1Y-S1	L-AC-APX-3Y-S1	L-AC-APX-5Y-S1	25 to 99	
L-AC-APX-1Y-S2	L-AC-APX-3Y-S2	L-AC-APX-5Y-S2	100 to 249	
L-AC-APX-1Y-S3	L-AC-APX-3Y-S3	L-AC-APX-5Y-S3	250 to 499	

Cisco AnyConnect Plus License (2 of 2)⁴

SKU	Users
AC-PLS-P-25-S	25
AC-PLS-P-50-S	50
AC-PLS-P-100-S	100
AC-PLS-P-250-S	250
AC-PLS-P-500-S	500

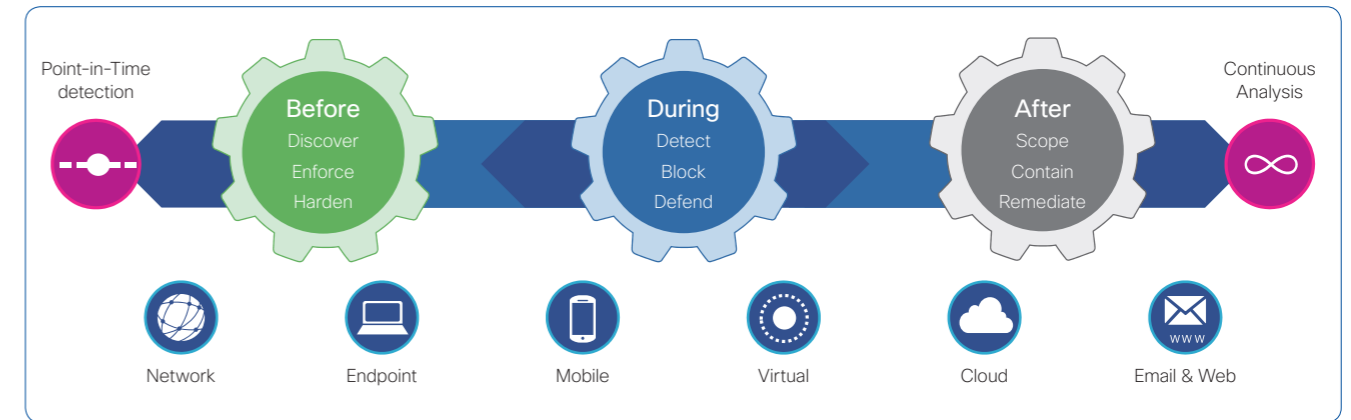
Cisco AnyConnect VPN Only License⁴

SKU	Simultaneous Connections
L-AC-VPNO-25=	25
L-AC-VPNO-50=	50
L-AC-VPNO-100=	100
L-AC-VPNO-250=	250
L-AC-VPNO-500=	500

¹ Cisco Umbrella Roaming License is required. ² Cisco AMP for Endpoints License is required. ³ Cisco ISE Apex License is required. ⁴ Refer to the Ordering Guide for a full list of orderable SKUs. ⁵ L-AC-PLS-LIC= is required. ⁶ L-AC-PLS-P-G is required. ⁷ L-AC-APX-LIC= is required.

Advanced Malware Protection (AMP)

Cisco Advanced Malware Protection (AMP) for Endpoints



Cisco Advanced Malware Protection (AMP)

The **Cisco Advanced Malware Protection (AMP)** is a security solution that addresses the full lifecycle of the advanced malware problem. Not only can it prevent breaches, but it also gives you the visibility and control to rapidly detect, contain, and remediate threats if they evade front-line defenses—all cost-effectively and without impacting operational efficiency. Cisco AMP protects your organization **before**, **during**, and **after** an attack.

- **Before** an attack, Cisco AMP uses global threat intelligence from the **Cisco Collective Security Intelligence** organization, **Talos Security Intelligence and Research Group**, and **Threat Grid's** threat intelligence feeds to strengthen defenses and protect against known and emerging threats.
- **During** an attack, Cisco AMP uses that intelligence, coupled with known file signatures and **Threat Grid's** malware analysis technology, to identify and block policy-violating file types, exploit attempts, and malicious files trying to infiltrate the network.
- **After** an attack, or after a file is initially inspected, the solution continues to monitor and analyze all file activity and traffic, regardless of file disposition, searching for any indications of malicious behavior. If a file with an unknown or previously deemed "good" disposition starts behaving badly, Cisco AMP alerts security teams with an indication of compromise. It then provides comprehensive visibility into where the malware originated, what systems were affected, and what the malware is doing. It also provides the controls to rapidly respond to the intrusion, contain the threat, and remediate it with a few clicks.

For details on Cisco AMP, visit the following Web site:
<http://www.cisco.com/go/amp>

Cisco Advanced Malware Protection (AMP) for Endpoints

The **Cisco AMP for Endpoints** is a cloud-managed endpoint security solution that provides the visibility, context, and control to not only prevent breaches, but also rapidly detect, contain, and remediate threats if they evade front-line defenses and get inside, all cost-effectively and without affecting operational efficiency.

- **Prevent:** Strengthen defenses using the best global threat intelligence and block malware in real time.
- **Monitor and Detect:** Continuously monitor and record all file activity to quickly detect stealthy malware.
- **Respond:** Accelerate investigations and automatically remediate malware across PCs, Macs, Linux, and Android mobile devices.

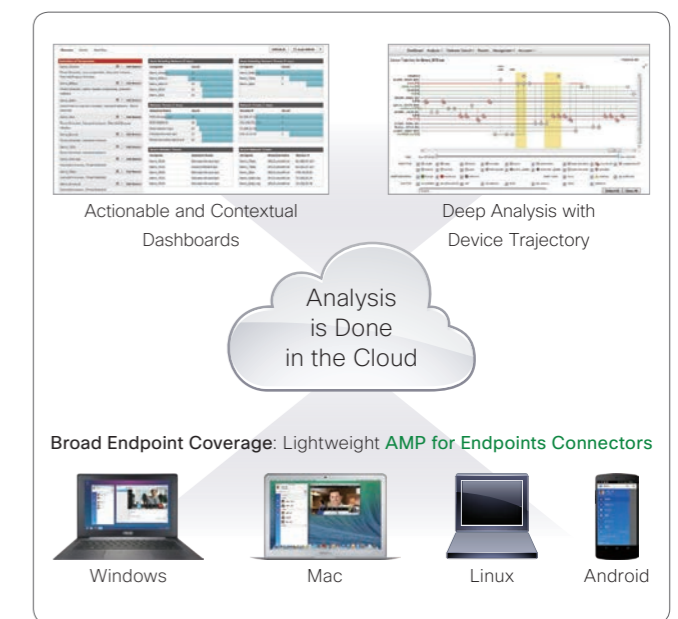
Cisco AMP for Endpoints is managed through an easy-to-use, web-based console. It is deployed through AMP's lightweight endpoint connector, with minimal performance impact on users. Analysis is done in the cloud, not on the endpoint.

The solution is offered as a subscription on endpoints, including coverage for Windows, Macs, Linux, and Android mobile devices.

If your organization has high privacy requirements that restrict using a public cloud, the **Cisco AMP Private Cloud Virtual Appliance** is an on-premises, air-gapped option. Each private cloud instance supports up to 10,000 connectors, and multiple Private Cloud Virtual Appliances can be added to the environment.

Cisco AMP for Endpoints Connector License¹

SKU	1-Year	3-Year	5-Year	Connectors Range
FP-AMP-1Y-S1	FP-AMP-3Y-S1	FP-AMP-5Y-S1	50 to 99	
FP-AMP-1Y-S2	FP-AMP-3Y-S2	FP-AMP-5Y-S2	100 to 499	
FP-AMP-1Y-S3	FP-AMP-3Y-S3	FP-AMP-5Y-S3	500 to 999	
FP-AMP-1Y-S4	FP-AMP-3Y-S4	FP-AMP-5Y-S4	1,000 to 4,999	
FP-AMP-1Y-S5	FP-AMP-3Y-S5	FP-AMP-5Y-S5	5,000 to 9,999	



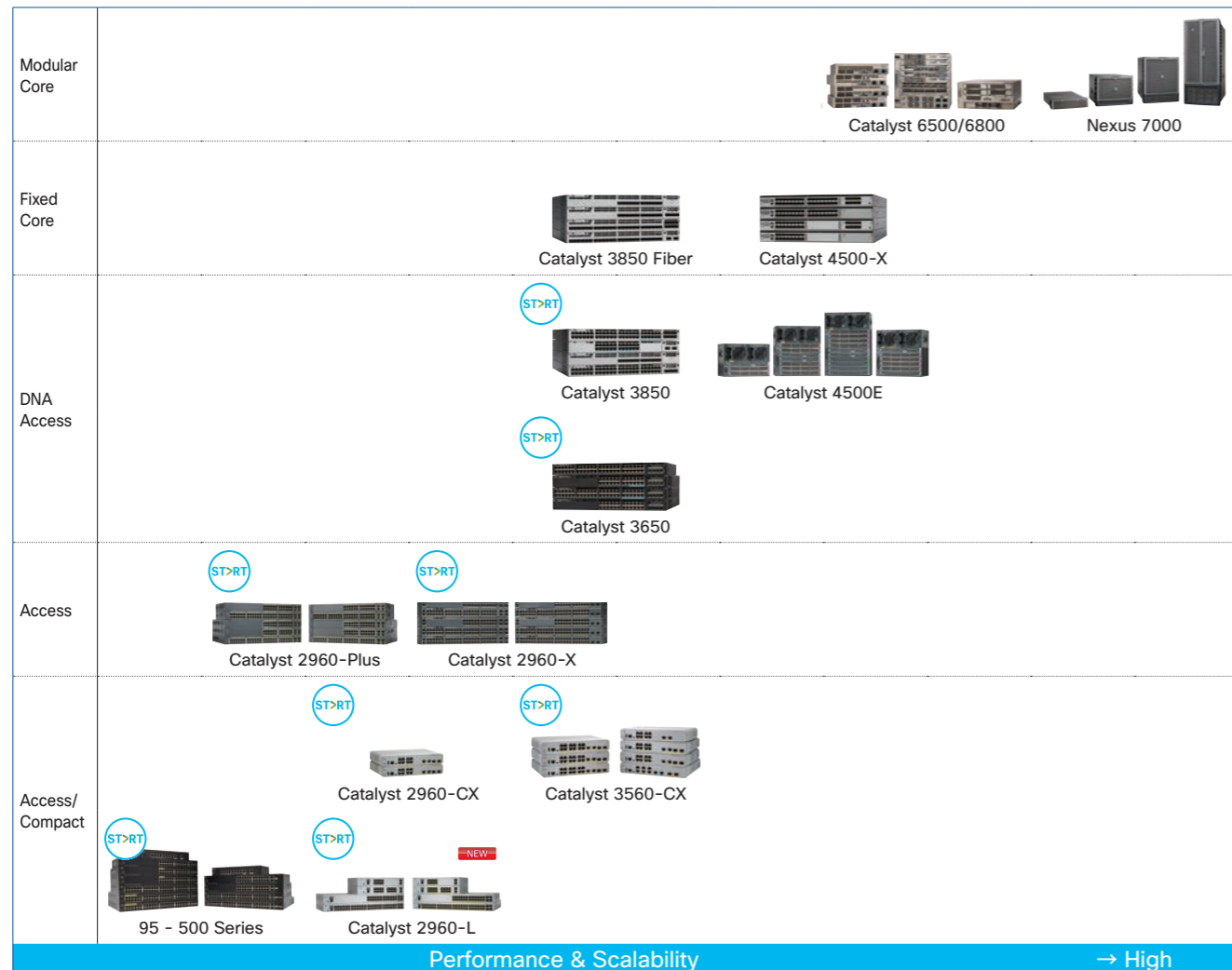
Cisco AMP Virtual Private Cloud Appliance²

SKU	Max Connectors
FP-AMP-CLOUD-SW	10,000

¹ FP-AMP-LIC= is required. Refer to the Ordering Guide for a full list of orderable SKUs. ² FP-AMP-CLOUD-BUN and Cisco AMP for Endpoints Connector License are required.



Positioning Map of Cisco Switches

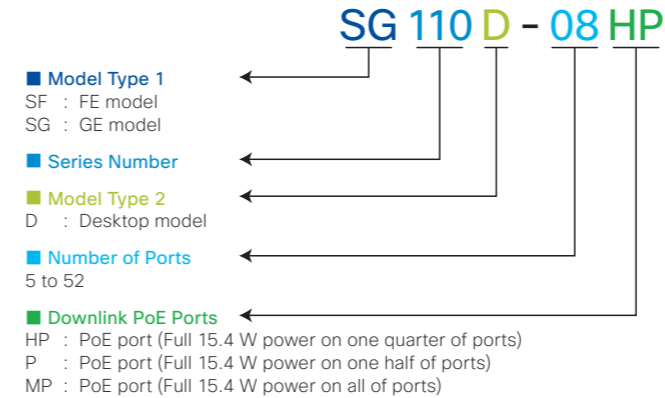


Cisco 95 - 500 Series	Layer 2/3 compact and standalone switches suitable for the small-sized network. Provide an ideal combination of features and affordability for growing businesses.	P16
Cisco Catalyst 2960-L Series <small>NEW</small>	Layer 2 standalone switches suitable for deployment in the access layer. GE is supported on all downlink ports.	P19
Cisco Catalyst 2960-Plus Series	Layer 2 standalone switches suitable for deployment in the access layer. FE is supported on all downlink ports.	P19
Cisco Catalyst 2960-CX Series	Layer 2 compact switches suitable for deployment in the access layer. Deliver basic network services even outside the wiring closet.	P21
Cisco Catalyst 3560-CX Series	Layer 3 compact and standalone switches suitable for deployment in the access layer. Deliver advanced network services even outside the wiring closet.	P21
Cisco Catalyst 2960-X Series	Layer 2/3 stackable switches suitable for deployment in the access layer. GE is supported on all downlink ports.	P22
Cisco Catalyst 3650 Series	Layer 2/3 stackable switches suitable for deployment in the access or core layer. Provide capabilities that ideally suited to support the convergence of wired and wireless access.	P23
Cisco Catalyst 3850 Series	Layer 2/3 stackable switches suitable for deployment in the access or core layer. Provide capabilities that ideally suited to support the convergence of wired and wireless access.	P25

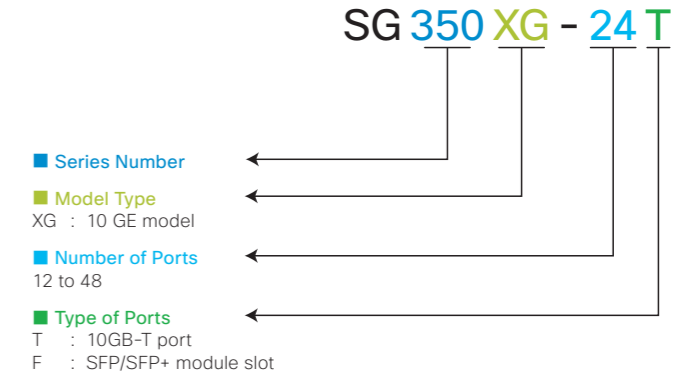
How to Distinguish Specifications from SKU of Cisco Switches

The SKU of each Cisco Switch contains a broad description of the product's specification.

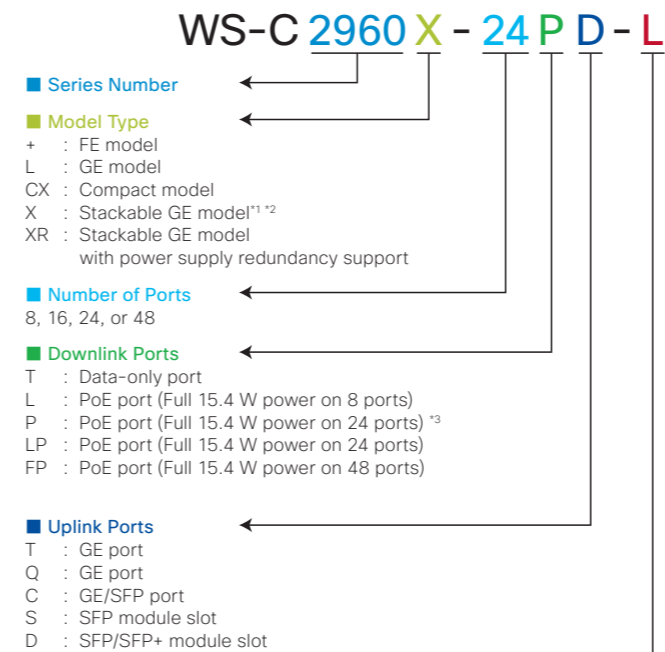
Cisco 95/110/250/350/350X/550X Series



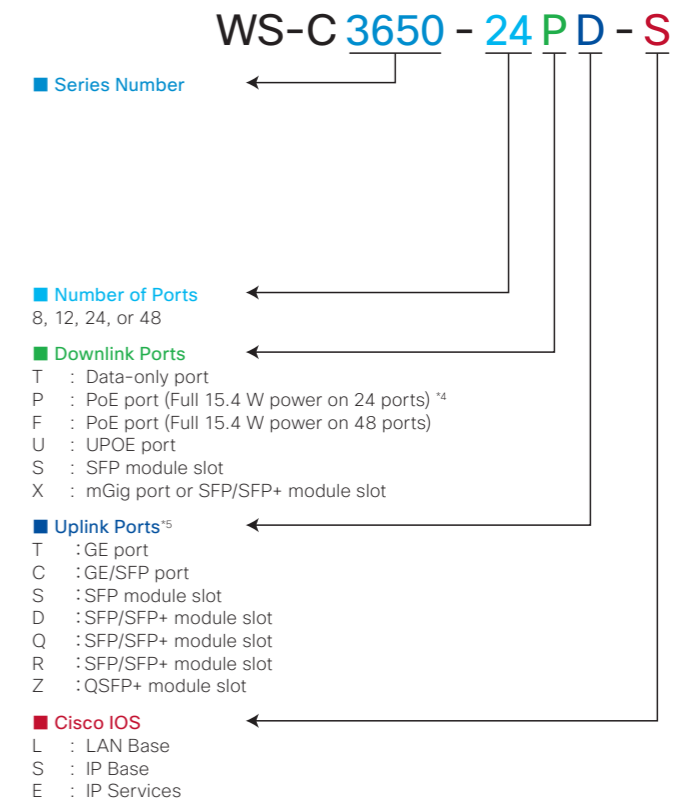
Cisco 350XG/550XG Series



Cisco Catalyst 2960-L/Plus/CX/X Series



Cisco Catalyst 3560-CX/3650/3850 Series



^{*1} The LAN Lite model does not support stacking. ^{*2} WS-C2960X-24PSQ-L does not support stacking. ^{*3} Compact switches support full 15.4 W power on 8 ports. ^{*4} Compact switches support full 15.4 W power on 8 or 12 ports. ^{*5} The Network Module is required for the Cisco Catalyst 3850 Series (Except for 48-port fiber model).

Ports

The Cisco Switches support the following interface ports:

- Fast Ethernet port (FE)
- Gigabit Ethernet port (GE)
- Multigigabit Ethernet port (mGig)
- SFP module slot (SFP)
- Dual-Purpose port (GE/SFP)
- 10GBASE-T port (10GB-T)
- SFP+ module slot (SFP/SFP+)
- QSFP+ module slot (QSFP)

The bracketed notations are abbreviations used in the specification comparison tables in this catalog. A dual-purpose port is an interface combining a Gigabit Ethernet port with an SFP module slot and is notated as GE/SFP (Either one can be activated independently). Similarly, SFP+ module slots are notated as SFP/SFP+ due to their compatibility with SFP. SFP/SFP+ modules can be mounted to QSFP+ module slots using an appropriate converter. In most cases, the supported port interfaces and number of ports of each product can be determined from their SKU.

Cisco 95 - 500 Series

● Cisco 95/110 Series Unmanaged Switches

Get highly affordable Gigabit, Fast Ethernet, and PoE. No setup is required for QoS, network diagnostics, power-saving mode, and loop detection.

● Cisco 220 Series Smart Plus Switches

Get the powerful features, security, and performance of a managed switch with the affordability that's closer to smart switches.

● Cisco 250 Series Smart Switches

Entry-level managed switch features and easy management at a great price. Build a business-class network with the features you need.

● Cisco 350 Series Managed Switches

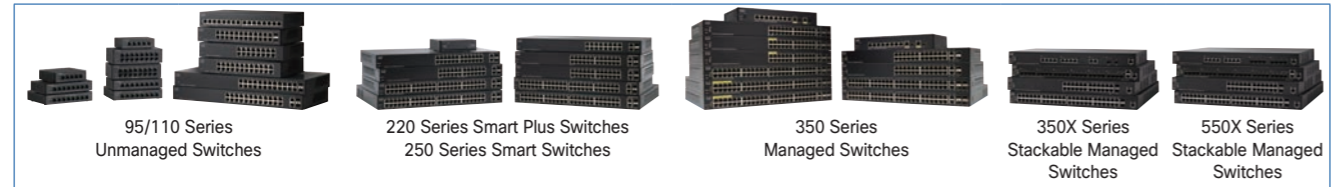
The ideal combination of affordability and advanced network features for small business, these easy to use fully managed switches are the cornerstone of your network.

● Cisco 350X Series Stackable Managed Switches

Our managed switches deliver an ideal combination of affordability and advanced features with 10-Gigabit Ethernet and stacking.

● Cisco 550X Series Stackable Managed Switches

These next-generation stackable managed switches offer 10-Gigabit Ethernet and advanced capabilities to accelerate your business growth.



Function, Flexibility, Scalability

→ More

* Cisco 200/300/500 Series are still for sale and not officially end of life.

■ Cisco 95 Series Unmanaged Switches

New Model Name	Legacy Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount	
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through
SF95D-05	SF90D-05	SF95D-05-xx	5	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF95D-08	SF90D-08	SF95D-08-xx	8	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF95D-16	SF90D-16	SF95D-16-xx	16	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF95-24	SF90-24	SF95-24-xx	24	-	-	-	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG95D-05	SG90D-05	SG95D-05-xx	-	5	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SG95D-08	SG90D-08	SG95D-08-xx	-	8	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SG95-16	SG92-16	SG95-16-xx	-	16	-	-	-	-	-	-	-	-	-	-	-	Internal	●	-	-
SG95-24	SG92-24	SG95-24-xx	-	22	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU

■ Cisco 110 Series Unmanaged Switches

New Model Name	Legacy Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount	
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through
SF110D-05	SF100D-05	SF110D-05-xx	5	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF110D-08	SF100D-08	SF110D-08-xx	8	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF110D-08HP	SF100D-08P	SF110D-08HP-xx	8	-	-	-	-	-	-	4	-	32 W	af	-	-	External	●	-	-
SF110D-16	SF100D-16	SF110D-16-xx	16	-	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SF110D-16HP	SF100D-16P	SF110D-16HP-xx	16	-	-	-	-	-	-	8	-	64 W	af	-	-	External	●	-	-
SF110-16	SF100-16	SF110-16-xx	16	-	-	-	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SF110-24	SF100-24	SF110-24-xx	24	-	-	-	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SF112-24	SF102-24	SF112-24-xx	-	22	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG110D-05	SG100D-05	SG110D-05-xx	-	5	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SG110D-08	SG100D-08	SG110D-08-xx	-	8	-	-	-	-	-	-	-	-	-	-	-	External	●	-	-
SG110D-08HP	SG100D-08P	SG110D-08HP-xx	-	8	-	-	-	-	-	4	-	32 W	af	-	-	External	●	-	-
SG110-16	SG100-16	SG110-16-xx	-	16	-	-	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG110-16HP	n/a	SG110-16HP-xx	-	16	-	-	-	-	-	8	-	64 W	af	-	-	Internal	●	-	1 RU
SG110-24	SG100-24	SG110-24-xx	-	22	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG110-24HP	n/a	SG110-24HP-xx	-	22	-	2	-	-	-	12	-	100 W	af	-	-	Internal	●	-	1 RU
SG112-24	SG102-24	SG112-24-xx	-	22	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU

■ Cisco 220 Series Smart Plus Switches

New Model Name	Legacy Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount	
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through
SF220-24	SF200E-24	SF220-24-xx	24	-	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SF220-24P	SF200E-24P	SF220-24P-xx	24	-	-	2	-	-	-	24	-	180 W	af/at	-	-	Internal	●	-	1 RU
SF220-48	SF200E-48	SF220-48-xx	48	-	-	2	-	-	-	-	-	-	-	-	Internal	●	-	1 RU	
SF220-48P	SF200E-48P	SF220-48P-xx	48	-	-	2	-	-	-	48	-	375 W	af/at	-	-	Internal	●	-	1 RU
SG220-26	n/a	SG220-26-xx	-	24	-	2	-	-	-	-	-	-	-	-	Internal	●	-	1 RU	
SG220-26P	n/a	SG220-26P-xx	-	24	-	2	-	-	-	24	-	180 W	af/at	-	-	Internal	●	-	1 RU
SG220-50	n/a	SG220-50-xx	-	48	-	2	-	-	-	-	-	-	-	-	Internal	●	-	1 RU	
SG220-50P	n/a	SG220-50P-xx	-	48	-	2	-	-	-	48	-	375 W	af/at	-	-	Internal	●	-	1 RU

■ Cisco 250 Series Smart Switches

New Model Name	Existing Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount	
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through
SF250-48	SF200-48	SF250-48-K9-xx	48	-	2	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SF250-48HP	SF200-48P	SF250-48HP-K9-xx	48	-	2	2	-	-	-	48	-	195 W	af/at	-	-	Internal	●	-	1 RU
SG250-10P	SG200-10FP	SG250-10P-K9-xx	-	8	-	2	-	-	-	8	-	62 W	af/at	2	●	External	●	-	1 RU
SG250-26	SG200-26	SG250-26-K9-xx	-	24	-	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG250-26HP	SG200-26P	SG250-26HP-K9-xx	-	24	-	2	-	-	-	24	-	100 W	af/at	-	-	Internal	●	-	1 RU
SG250-26P	SG200-26FP	SG250-26P-K9-xx	-	24	-	2	-	-	-	24	-	195 W	af/at	-	-	Internal	●	-	1 RU

■ Cisco 350 Series Managed Switches

New Model Name	Existing Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount	
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through
SF350-48	SF300-48	SF350-48-K9-xx	48	-	2	2	-	-	-	-	-	-	-	-	-	Internal	-	-	1 RU
SF350-48P	SF300-48PP	SF350-48P-K9-xx	48	-	2	2	-	-	-	48	8	382 W	af/at	-	-	Internal	-	-	1 RU
SF350-48MP	n/a	SF350-48MP-K9-xx	48	-	2	2	-	-	-	48	8	740 W	af/at	-	-	Internal	-	-	1 RU
SG350-10	SG300-10	SG350-10-K9-xx	-	8	-	2	-	-	-	-	-	-	-	2	●	External	●	-	1 RU
SG350-10P	SG300-10PP	SG350-10P-K9-xx	-	8	-	2	-	-	-	8	-	62 W	af/at	2	●	External	●	-	1 RU
SG350-10MP	SG300-10MPP	SG350-10MP-K9-xx	-	8	-	2	-	-	-	8	-	124 W	af/at	2	●	External	●	-	1 RU
SG355-10P	n/a	SG355-10P-K9-xx	-	8	-	2	-	-	-	8	-	62 W	af/at	2	●	Internal	●	-	1 RU
SG350-28	SG300-28	SG350-28-K9-xx	-	24	2	2	-	-	-	-	-	-	-	-	-	Internal	●	-	1 RU
SG350-28P	SG300-28PP	SG350-28P-K9-xx	-	24	2	2	-	-	-	24	4	195 W	af/at	-	-	Internal	-	-	1 RU
SG350-28MP	SG300-28MP	SG350-28MP-K9-xx	-	24	2	2	-	-	-	24	4	382 W	af/at	-	-	Internal	-	-	1 RU

■ Cisco 350X Series Stackable Managed Switches^{*1}

New Model Name	Existing Model Name	Orderable SKU	Ports							PoE					AC Power	Fan less	Stack able	Rack Mount		
			FE	GE	SFP	GE/SFP	10 GB-T	SFP+	10GB-T/SFP+	Ports	60 W Ports	Power Budget	IEEE 802.3	Input Ports					Pass through	
SG350X-24	n/a	SG350X-24-K9-xx	-	24	-	-	-	-	2	2	-	-	-	-	-	Internal	-	●	1 RU	
SG350X-24P	n/a	SG350X-24P-K9-xx	-	24	-	-	-	-	2	2	24	4	195 W	af/at	-	-	Internal	-	●	1 RU
SG350X-24MP	n/a	SG350X-24MP-K9-xx	-	24	-	-	-	-	2	2	24	4	382 W	af/at	-	-	Internal	-	●	1 RU
SG350X-48	n/a	SG350X-48-K9-xx	-	48	-	-	-	-	2	2	-	-	-	-	-	Internal	-	●	1 RU	
SG350X-48P	n/a	SG350X-48P-K9-xx	-	48	-	-	-	-	2	2	48	8	382 W	af/at	-	-	Internal	-	●	1 RU
SG350X-48MP	n/a	SG350X-48MP-K9-xx	-	48	-	-	-	-	2	2	48	8	740 W	af/at	-	-	Internal	-	●	1 RU
SG350XG-2F10	n/a	SG350XG-2F10-K9-xx	-	-	-	-	10	2	-	-	-	-	-	-	-	Internal	-	●	1 RU	
SG350XG-24T	n/a	SG350XG-24T-K9-xx	-	-	-	-	22	-	2	-	-	-	-	-	-	Internal	-	●	1 RU	
SG350XG-24F	n/a	SG350XG-24F-K9-xx	-	-	-	-	22	2	-	-	-	-	-	-	-	Internal	-	●	1 RU	
SG350XG-48T	n/a	SG350XG-48T-K9-xx	-	-	-	-	46	-	2	-	-	-	-	-	-	Internal	-	●	1 RU	

■ Cisco 550X Series Stackable Managed Switches^{*1}

Cisco IOS on Cisco Catalyst Switches

Cisco Catalyst Switches incorporate the **Cisco IOS (Internetwork Operating System)**, which is a high-performance network infrastructure software. **LAN Lite** and **LAN Base** feature sets provide the L2 level features, and **IP Lite, IP Base, IP Services** feature sets provide the L3 level features, respectively. Cisco IOS provided with the Cisco Catalyst 3560-CX/3650/3850 Series is delivered in a single universal image. The universal image contains the entire Cisco IOS feature set that can be activated via a software license. A software image needed to be installed in order to use the new functions on previous Cisco Catalyst Switches. However, on the Cisco Catalyst 3560-CX/3650/3850 Series Switches, advanced functions can be activated immediately using the **Cisco IOS Upgrade License**.

■ **Cisco IOS XE Denali 16.3** NEW
Cisco IOS XE Denali 16.3 delivers key innovations in the areas of Application Experience, Network Programmability and Security. This is the first-ever release to introduce **Multiprotocol Label Switching (MPLS)** on the **Cisco Catalyst 3650/3850 Series**, which brings in higher reliability and flexibility in our customer deployments. This is the extended maintenance release for Cisco IOS XE Denali 16.x with a plan for forty-eight months of software maintenance to help drive long-term stability in customer deployments. This release was extensively beta tested by several customers and partners demonstrating Cisco's commitment to delivering the highest quality software. In addition, the engineering team also successfully deployed this release in production environment at several locations within the Cisco campus.

■ Series Compatibility Comparison (Cisco Catalyst 2960-CX/3560-CX/2960-Plus/2960-X/3650/3850 Series)

Supported Series	LAN Lite (LL)	LAN Base (LB)	IP Lite (IPL)	IP Base (IPB)	IP Services (IPS)
Catalyst 2960-L	●	-	-	-	-
Catalyst 2960-Plus	●	●	-	-	-
Catalyst 2960-CX	-	●	-	-	-
Catalyst 3560-CX	-	-	-	●	●
Catalyst 2960-X	●	●	● ^{*1}	-	-
Catalyst 3650	-	●	-	●	●
Catalyst 3850	-	●	-	●	●

■ Cisco IOS Specification Comparison (L2 Features)

Feature	LL	LB	IPL	IPB	IPS
IEEE 802.1Q Trunking	●	●	●	●	●
DTP	●	●	●	●	●
UDLD	●	●	●	●	●
VTP	●	●	●	●	●
CDP	●	●	●	●	●
LLDP	●	●	●	●	●
LLDP-MED	● ^{*2}	●	●	●	●
STP (Spanning Tree Protocol)	●	●	●	●	●
Flex Link	-	●	●	●	●
EtherChannel	●	●	●	●	●
LACP	●	●	●	●	●
Link State Tracking	● ^{*2}	●	●	●	●
Resilient Ethernet Protocol (REP)	-	-	-	● ^{*3}	● ^{*3}
Per-Port Storm Control	●	●	●	●	●

■ Cisco IOS Specification Comparison (L3 Features)

Feature	LL	LB	IPL	IPB	IPS
Static Routing	-	●	●	●	●
RIP	-	-	●	●	●
EIGRP Stub	-	-	●	●	●
EIGRP	-	-	-	-	●
OSPF for Routed Access	-	-	●	●	●
OSPF v2/v3	-	-	-	-	●
BGP	-	-	-	-	●
IS-IS	-	-	-	-	●
Policy Based Routing (PBR)	-	-	●	●	●
VRF-Lite	-	-	-	-	●
PIM Stun	-	-	●	●	●
PIM	-	-	-	-	●
WCCP	-	-	●	●	●
SSO	-	● ^{*4}	-	● ^{*5}	● ^{*5}
NSF	-	-	-	●	●
MPLS	-	-	-	-	● ^{*5}

■ Cisco IOS Specification Comparison (Managability)

Feature	LL	LB	IPL	IPB	IPS
SNMP	●	●	●	●	●
RMON	●	●	●	●	●
SPAN	●	●	●	●	●
RSPAN	● ^{*2}	●	●	●	●
TDR	●	●	●	●	●
Smart Ports	●	●	●	●	●
Smart Install (client)	●	●	●	●	●
Smart Install (director)	-	● ^{*4}	-	●	●
Cisco IOS IP SLA (responder)	-	●	●	●	●
Cisco IOS IP SLA (initiator)	-	-	-	●	●
Cisco IOS EEM	-	-	-	●	●
Wireshark	-	-	-	● ^{*5}	● ^{*5}
Netflow-Lite	-	-	-	●	●
Flexible Netflow	-	●	●	●	●
EnergyWise	●	●	●	●	●
GOLD (GOLD-Lite)	●	●	●	●	●
OBFL	●	●	●	●	●

■ Cisco IOS Specification Comparison (Security)

Feature	LL	LB	IPL	IPB	IPS
SSH	●	●	●	●	●
SSL	●	●	●	●	●
SCP	●	●	●	●	●
HTTPS	●	●	●	●	●
TACACS+	●	●	●	●	●
RADIUS	●	●	●	●	●
Port Security	●	●	●	●	●
DHCP Snooping	● ^{*2}	●	●	●	●
Dynamic ARP Inspection (DAI)	● ^{*2}	●	●	●	●
IP Source Guard	-	●	●	●	●
MAC Authentication Bypass for Voice	●	●	●	●	●
Private VLAN Edge	●	●	●	●	●
Private VLAN	-	-	●	●	●
Layer 2 - 4 ACL	-	●	●	●	●
Router ACL	-	● ^{*5}	●	●	●
VLAN ACL	● ^{*2}	-	●	●	●
Time Range ACL	-	●	●	●	●
Web Authentication	● ^{*2}	●	●	●	●
TrustSec SXP	-	●	●	●	●
TrustSec SGT/SGACL	-	● ^{*6}	●	●	●
MACsec	-	-	●	●	●
NEAT	-	●	●	●	●

■ Cisco IOS Specification Comparison (QoS)

Feature	LL	LB	IPL	IPB	IPS
SRR	●	●	●	●	●
Priority Queue	●	●	●	●	●
Auto QoS	● ^{*2}	●	●	●	●
DSCP	● ^{*2}	●	●	●	●
Weighted Tail Drop (WTD)	● ^{*2}	● ^{*7}	-	● ^{*7}	●
Dynamic Buffer Limiting (DBL)	-	-	-	-	-
Control Plane Policing (CoPP)	-	● ^{*4}	-	● ^{*5}	● ^{*5}
Per VLAN Policy	-	-	●	●	●

*1 Cisco Catalyst 2960-XR Series only. *2 Cisco Catalyst 2960-L Series only. *3 Cisco Catalyst 3650/3850 Series are to be supported in future software release.
 *4 Cisco Catalyst 2960-CX/2960-X Series are not supported. *5 Cisco Catalyst 3560-CX Series are not supported. *6 Cisco Catalyst 3650/3850 Series are not supported.
 *7 Cisco Catalyst 3560/3850 Series only.

Cisco Catalyst 2960-L Series NEW

Layer 2 standalone switches equipped Gigabit Ethernet downlink ports. These switches provide entry-level enterprise-class services for branch offices, conventional workspaces, and out-of-wiring closet applications. They can be configured and managed with a CLI or an on-box GUI.



■ Highlights

- Equipped with Cisco IOS **LAN Lite** Image
- Stylish, fan-less design and silent in operation (Excludes one model)
- Equipped with **PoE+** power supplying downlink ports (PSE models)
- Operating temperature advantage: - 5 °C to 55 °C
- Less than 11.5-inch depth fit in use cases with space limitation

■ Cisco Catalyst 2960-L Series^{*1}

SKU	Downlinks		Uplinks		Cisco IOS	Web Auth	Max VLANs	PoE		Fanless	AC Power	Magnet	Rack Mount
	GE	SFP	GE	SFP				Ports	Power Budget				
WS-C2960L-8TS-LL	8	-	2	-	LAN Lite	●	64	-	-	●	Internal	- ^{*2}	-
WS-C2960L-8PS-LL	8	-	2	-	LAN Lite	●	64	8	67 W	●	Internal	- ^{*2}	-
WS-C2960L-16TS-LL	16	-	2	-	LAN Lite	●	64	-	-	●	Internal	- ^{*2}	-
WS-C2960L-16PS-LL	16	-	2	-	LAN Lite	●	64	16	120 W	●	Internal	- ^{*2}	-
WS-C2960L-24TS-AP	24	-	4	-	LAN Lite	●	64	-	-	●	Internal	-	1 RU
WS-C2960L-24PS-AP	24	-	4	-	LAN Lite	●	64	24	195 W	●	Internal	-	1 RU
WS-C2960L-48TS-AP	48	-	4	-	LAN Lite	●	64	-	-	●	Internal	-	1 RU
WS-C2960L-48PS-AP	48	-	4	-	LAN Lite	●	64	48	370 W	-	Internal	-	1 RU

*1 Not orderable in Australia and New Zealand. *2 Magnet and Mounting Tray (CMPCT-MGNT-TRAY=) is required.

Cisco Catalyst 2960-Plus Series

L2 fixed-configuration switches equipped Fast Ethernet downlink ports. Based on the Fast Ethernet models of the Cisco Catalyst 2960 Series, these switches have twice the memory capacity and support the new Cisco IOS 15.0(2)SE and higher.



■ Highlights

- Equipped with Cisco IOS **LAN Base** Image (Excludes LAN Lite models)
- Equipped with PoE power supplying downlink ports (PSE models)

■ Cisco Catalyst 2960-Plus Series

SKU	Downlinks		Uplinks		Cisco IOS	Web Auth	Max VLANs	PoE		AC Power	Rack Mount
	FE	GE	SFP	GE/SFP				Ports	Power Budget		
WS-C2960+24TC-S	24	-	-	2	LAN Lite	-	64	-	-	Internal	1 RU
WS-C2960+24LC-S	24	-	-	2	LAN Lite	-	64	8	123 W	Internal	1 RU
WS-C2960+24PC-S	24	-	-	2	LAN Lite	-	64	24	370 W	Internal	1 RU
WS-C2960+48TC-S	48	-	-	2	LAN Lite	-	64	-	-	Internal	1 RU
WS-C2960+48PST-S	48	2	2	-	LAN Lite	-	64	48	370 W	Internal	1 RU
WS-C2960+24TC-L	24	-	-	2	LAN Base	●	255	-	-	Internal	1 RU
WS-C2960+24LC-L	24	-	-	2	LAN Base	●	255	8	123 W	Internal	1 RU
WS-C2960+24PC-L	24	-	-	2	LAN Base	●	255	24	370 W	Internal	1 RU
WS-C2960+48TC-L	48	-	-	2	LAN Base	●	255	-	-	Internal	1 RU
WS-C2960+48PST-L	48	2	2	-	LAN Base	●	255	48	370 W	Internal	1 RU

Intuitive Web User Interface

The Cisco Catalyst 2960-L Series support an on-box, intuitive web-based user interface (UI) for easy and quick installation, configuration management, and monitoring of the switch. This web UI, the **Cisco Configuration Professional Express**, is planned to be supported in future Cisco IOS releases of the Cisco Catalyst 2960-Plus/CX/X Series also.



Cisco Catalyst 2960 Series Transition Guide

■ Cisco Catalyst 2960-SF/2960-S/2960-Plus/2960-L/2960-X Series^{*1}

Legacy Models				Current Models		Suggested Models	
Fast Ethernet		Gigabit Ethernet		Fast Ethernet	Gigabit Ethernet		
Stacking Not Supported	Stacking Supported	Stacking Not Supported	Stacking Supported	Stacking Not Supported	Stacking Not Supported	Stacking Supported	
WS-C2960S-F24TS-S	-	WS-C2960S-24TS-S	-	WS-C2960+24TC-S	WS-C2960L-24TS-AP WS-C2960X-24TS-LL	-	
-	-	-	-	WS-C2960+24LC-S WS-C2960+24PC-S	WS-C2960L-24PS-AP	-	
WS-C2960S-F48TS-S	-	WS-C2960S-48TS-S	-	WS-C2960+48TC-S	WS-C2960L-48TS-AP WS-C2960X-48TS-LL	-	
-	-	-	-	WS-C2960+48PST-S	WS-C2960L-48PS-AP	-	
-	WS-C2960S-F24TS-L	-	WS-C2960S-24TS-L	WS-C2960+24TC-L	-	WS-C2960X-24TS-L WS-C2960XR-24TS-I	
-	-	-	WS-C2960S-24TD-L	-	-	WS-C2960X-24TD-L WS-C2960XR-24TD-I	
-	WS-C2960S-F24PS-L	-	WS-C2960S-24PS-L	WS-C2960+24LC-L WS-C2960+24PC-L	WS-C2960X-24PSQ-L	WS-C2960X-24PS-L WS-C2960XR-24PS-I	
-	-	-	WS-C2960S-24PD-L	-	-	WS-C2960X-24PD-L WS-C2960XR-24PD-I	
-	WS-C2960S-F48TS-L	-	WS-C2960S-48TS-L	WS-C2960+48TC-L	-	WS-C2960X-48TS-L WS-C2960XR-48TS-I	
-	-	-	WS-C2960S-48TD-L	-	-	WS-C2960X-48TD-L WS-C2960XR-48TD-I	
-	WS-C2960S-F48LPS-L	-	WS-C2960S-48LPS-L	WS-C2960+48PST-L	-	WS-C2960X-48LPS-L WS-C2960XR-48LPS-I	
-	WS-C2960S-F48FPS-L	-	WS-C2960S-48FPS-L	-	-	WS-C2960X-48FPS-L WS-C2960XR-48FPS-I	
-	-	-	WS-C2960S-48LPD-L	-	-	WS-C2960X-48LPD-L WS-C2960XR-48LPD-I	
-	-	-	WS-C2960S-48FPD-L	-	-	WS-C2960X-48FPD-L WS-C2960XR-48FPD-I	

■ Series Comparison

Series	2960-SF		2960-S		2960-Plus		2960-L		2960-X	
	LAN Lite	LAN Base	LAN Lite	LAN Base	LAN Lite	LAN Base	LAN Lite	LAN Base	LAN Base	IP Lite
Basic L2 Features	●	●	●	●	●	●	●	●	●	●
Advanced L2 Features	-	●	-	●	-	●	-	-	●	●
Basic L3 Features	-	-	-	-	-	-	-	-	-	●
DNA (APIC-EM)	-	●	-	●	-	-	-	-	●	●
Web UI	-	-	-	-	-	-	●	-	-	-
1 GE Downlink	-	-	●	●	-	-	●	●	●	●
10 GE Uplink	-	-	-	●	-	-	-	-	●	●
Full PoE 15.4 W	-	●	-	●	-	-	●	-	●	●
PoE+ 30 W	-	●	-	●	-	-	●	-	●	●
RPS	-	-	-	●	-	●	-	-	●	-
Power Redundancy	-	-	-	-	-	-	-	-	-	●
FlexStack	-	●	-	●	-	-	-	-	-	-
FlexStack Plus	-	-	-	-	-	-	-	-	●	●
8-port Compact Models	-	-	-	-	-	-	●	-	-	-
16-port Compact Models	-	-	-	-	-	-	●	-	-	-
Fanless Models	-	-	-	-	-	-	●	-	●	-

*1 Search for EOL10043 at cisco.com.

Cisco Catalyst 2960-CX Series

The compact switches are Layer 2 switches that are purpose built to enhance scalability and reduce costs through cable consolidation. Extend enterprise-class services to wherever you want, far from the wiring closet. They provide advanced networking features for security and management, equivalent to Cisco Catalyst 2960-X Series.

■ Highlights

- Equipped with Cisco IOS LAN Base Image
- Stylish, fan-less design and silent operation
- Equipped with PoE+ power supplying downlink ports (WS-C2960CX-8PC-L)
- Operating temperature advantage: -5 °C to 45 °C
- Traffic visibility: support Cisco NetFlow-Lite up to Layer 4, supported both on all downlink and uplink ports.



■ Cisco Catalyst 2960-CX Series

SKU	Downlinks		Uplinks			Cisco IOS	Web Auth	MAC sec	Max VLANs	PoE			AC Power	Magnet	Rack Mount
	GE	mGig	GE	SFP	SFP/SFP+					Ports	Power Budget	Pass through			
WS-C2960CX-8TC-L	8	-	2	2	-	LAN Base	●	-	255	-	-	-	Internal	- ^{*1}	- ^{*2}
WS-C2960CX-8PC-L	8	-	2	2	-	LAN Base	●	-	255	8	124 W	-	Internal	- ^{*1}	- ^{*2}

*1 Magnet and Mounting Tray (CMPCT-MGNT-TRAY=) is required. Optional new Power Adapter Bracket (PWR-ADPT-BRKT=) is available.

*2 Rack Mounting Brackets (RCKMNT-19-CMPCT=/RCKMNT-23-CMPCT=) is required. Optional new Power Adapter Bracket (PWR-ADPT-BRKT=) is available.

Cisco Catalyst 3560-CX Series

The compact switches are Layer 3 switches that are purpose built to enhance scalability and reduce costs through cable consolidation. Extend enterprise-class services to wherever you want, far from the wiring closet. They provide advanced networking features for security and management, equivalent to Cisco Catalyst 3650/3850 Series.

■ Highlights

- Equipped with Cisco IOS universal image (IP Base, upgradable to IP services)
- Stylish, fan-less design and silent operation
- Equipped with Cisco Catalyst Multigigabit Technology (mGig)-enabled downlink ports (some models)
- Equipped with PoE+ power supplying downlink ports (PSE models)
- PoE pass-through: industry's first UPOE powered switch that can pass through up to 146 W to power up the devices connected to the switch (WS-C3560CX-8PT-S)
- Operating temperature advantage: -5 °C to 45 °C
- Traffic visibility: support Cisco NetFlow-Lite up to Layer 4, supported both on all downlink and uplink ports.



■ Cisco Catalyst 3560-CX Series

SKU	Downlinks		Uplinks			Cisco IOS	Web Auth	MAC sec	Max VLANs	PoE			AC Power	Magnet	Rack Mount
	GE	mGig	GE	SFP	SFP/SFP+					Ports	Power Budget	Pass through			
WS-C3560CX-8TC-S	8	-	2	2	-	IP Base	●	●	1023	-	-	-	Internal	- ^{*2}	- ^{*3}
WS-C3560CX-8PT-S	8	-	2	-	-	IP Base	●	●	1023	8	240 W	●	External ^{*1}	- ^{*2}	- ^{*3}
WS-C3560CX-8PC-S	8	-	2	2	-	IP Base	●	●	1023	8	240 W	-	Internal	- ^{*2}	- ^{*3}
WS-C3560CX-8XPD-S	6	2	-	-	2	IP Base	●	●	1023	8	240 W	-	Internal	- ^{*2}	- ^{*3}
WS-C3560CX-12TC-S	12	-	2	2	-	IP Base	●	●	1023	-	-	-	Internal	- ^{*2}	- ^{*3}
WS-C3560CX-12PC-S	12	-	2	2	-	IP Base	●	●	1023	12	240 W	-	Internal	- ^{*2}	- ^{*3}
WS-C3560CX-12PD-S	12	-	2	-	2	IP Base	●	●	1023	12	240 W	-	Internal	- ^{*2}	- ^{*3}

■ Cisco IOS Upgrade License for Cisco Catalyst 3560-CX Series

SKU	Description
L-C3560CX-RTU=	Cisco IOS IP Services license for Cisco Catalyst 3560-CX Series

*1 Power Adapter and Power Cord is Required when not using PoE receiving. *2 Magnet and Mounting Tray (CMPCT-MGNT-TRAY=) is required. Optional new Power Adapter Bracket (PWR-ADPT-BRKT=) is available.

*3 Rack Mounting Brackets (RCKMNT-19-CMPCT=/RCKMNT-23-CMPCT=) is required. Optional new Power Adapter Bracket (PWR-ADPT-BRKT=) is available.

Comparison of Cisco Catalyst Compact Switches

■ Comparison of Cisco Catalyst 2960-CG & 2960-CX Compact Switches

Parameter	Feature	2960-CG	2960-CX
Ports	Uplinks	2 x GE/SFP	2 x GE and 2 x SFP
	Downlinks	8 x GE	8 x GE
PoE	PoE	-	124 W PoE+
	Perpetual PoE	-	● ^{*1}
Hardware	DRAM, Flash	128 MB, 64 MB	512 MB, 128 MB
	Security	802.1x	802.1x, SXP ^{*2}
Other	AVC	-	NetFlow Lite

■ Comparison of Cisco Catalyst 3560-CG & 3560-CX Compact Switches

Parameter	Feature	3560-CG	3560-CX
Ports	Uplinks	2 x GE or 2 x SFP	2 x GE and SFP/SFP+ ^{*3}
	Downlinks	8 x GE	8 x GE or 12 x GE
	mGig	-	● ^{*4}
PoE	PoE	124 W PoE+	240 W PoE+
	PoE pass-through	1 x UPOE, 23.8 W	2 x UPOE, 144.8 W ^{*1}
	DC Power	-	● ^{*1}
	Power Stacking	-	Horizontal ^{*1}
Software	Cisco IOS	IP Base Only	IP Base, IP Services
	DRAM, Flash	128 MB, 64 MB	512 MB, 128 MB
Other	Security	802.1x, MACsec	802.1x, MACsec, SXP ^{*1} , SGACL
	AVC	NO	NetFlow Lite
	IPv6	Basic	Enhanced

*1 On roadmap. *2 SGACL is not supported. *3 WS-C3560CX-8XPD-S & WS-C3560CX-12PD-S only. *4 WS-C3560CX-8XPD-S only.

Cisco Catalyst 2960-X Series

Stackable L2/L3 fixed-configuration switches equipped Gigabit Ethernet downlink ports. A flexible and redundant power supply configuration is achieved via a stack function and mounting of multiple power supply modules or a redundant power supply system.



- **Highlights**
- Equipped with Cisco IOS Universal Image (Supports LAN Lite/LAN Base/IP Lite)*1
- Supports Layer 3 functions including HSRP and VRRP (IP Lite model)
- Equipped with PoE+ power supplying downlink ports (PSE model)
- Equipped with full PoE powering power supply (WS-C2960X-48FPS-L/WS-C2960X-48FPD-L/WS-C2960XR-48FPS-I/WS-C2960XR-48FPD-I)
- Supports multiple Power Supply Modules (IP Lite model)
- Supports **Cisco FlexStack Plus** (LAN Base/IP Lite models)

■ Cisco Catalyst 2960-X Series

SKU	Downlinks		Uplinks		Cisco IOS	Web Auth	Max VLANs	PoE		Power Supply	Power Redundancy	RPS	Flex Stack Plus	Fanless	Rack Mount
	GE	SFP	SFP/SFP+	Ports				Power Budget							
WS-C2960X-24TS-LL	24	-	2	-	LAN Lite	-	64	-	-	Fixed AC	-	-	-	-	1 RU
WS-C2960X-48TS-LL	48	-	2	-	LAN Lite	-	64	-	-	Fixed AC	-	-	-	-	1 RU
WS-C2960X-24TS-L	24	-	4	-	LAN Base	●	1024	-	-	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-24TD-L	24	-	-	2	LAN Base	●	1024	-	-	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-24PSQ-L	24	2	2	-	LAN Base	●	1024	8	110 W	Fixed AC	-	-	-	●	1 RU
WS-C2960X-24PS-L	24	-	4	-	LAN Base	●	1024	24	370 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-24PD-L	24	-	-	2	LAN Base	●	1024	24	370 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48TS-L	48	-	4	-	LAN Base	●	1024	-	-	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48TD-L	48	-	-	2	LAN Base	●	1024	-	-	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48LPS-L	48	-	4	-	LAN Base	●	1024	48	370 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48FPS-L	48	-	4	-	LAN Base	●	1024	48	740 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48LPD-L	48	-	-	2	LAN Base	●	1024	48	370 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960X-48FPD-L	48	-	-	2	LAN Base	●	1024	48	740 W	Fixed AC	-	●	●*2	-	1 RU
WS-C2960XR-24TS-I	24	-	4	-	IP Lite	●	1024	-	-	250 W AC	●	-	●*2	-	1 RU
WS-C2960XR-24TD-I	24	-	-	2	IP Lite	●	1024	-	-	250 W AC	●	-	●*2	-	1 RU
WS-C2960XR-24PS-I	24	-	4	-	IP Lite	●	1024	24	370 W	640 W AC	●	-	●*2	-	1 RU
WS-C2960XR-24PD-I	24	-	-	2	IP Lite	●	1024	24	370 W	640 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48TS-I	48	-	4	-	IP Lite	●	1024	-	-	250 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48TD-I	48	-	-	2	IP Lite	●	1024	-	-	250 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48LPS-I	48	-	4	-	IP Lite	●	1024	48	370 W	640 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48FPS-I	48	-	4	-	IP Lite	●	1024	48	740 W	1025 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48LPD-I	48	-	-	2	IP Lite	●	1024	48	370 W	640 W AC	●	-	●*2	-	1 RU
WS-C2960XR-48FPD-I	48	-	-	2	IP Lite	●	1024	48	740 W	1025 W AC	●	-	●*2	-	1 RU

■ Power Supply Module for the Cisco Catalyst 2960-XR Series

SKU	Description	Compatible SKU
PWR-C2-250WAC	250 W AC power supply module	WS-C2960XR-24TS-I/WS-C2960XR-24TD-I/WS-C2960XR-48TS-I/WS-C2960XR-48TD-I
PWR-C2-640WAC	640 W AC power supply module	WS-C2960XR-24PS-I/WS-C2960XR-24PD-I/WS-C2960XR-48LPS-I/WS-C2960XR-48LPD-I
PWR-C2-1025WAC	1025 W AC power supply module	WS-C2960XR-48FPS-I/WS-C2960XR-48FPD-I

*1 Upgrade is not supported. *2 Cisco FlexStack Plus module (C2960X-STACK) is required.

Cisco FlexStack Plus module

When equipped with the optional **Cisco FlexStack Plus Module (C2960X-STACK)**, the **LAN Base/IP Lite** models of the **Cisco Catalyst 2960-X Series** support connection of up to eight switches in a stack at 80 Gbps.

Cisco FlexStack Plus is backward-compatible with Cisco FlexStack. Up to four switches can be connected in a stack at 40 Gbps when (and only when) the LAN Base model of the Cisco Catalyst 2960-X Series is combined with the LAN Base model of the Cisco Catalyst 2960-SF/S Series.

■ Combined Stacks Compatibility List

	2960-SF/S LAN Base	2960-X LAN Base	2960-XR IP Lite
2960-SF/S LAN Base	●	●	-
2960-X LAN Base	●	●	-
2960-XR IP Lite	-	-	●

■ Cisco FlexStack Plus Module

SKU	C2960X-STACK
Compatible IOS	LAN Base/IP Lite
Maximum Number of Devices	8
Stack Bandwidth	80 Gbps
Architecture	Hardware drop table
Dynamic Ring Load-balancing	-
Stack Convergence	100 milliseconds

Cisco Catalyst 3650 Series

Stackable L2/L3 fixed-configuration switches that offer the wireless controller function. These switches incorporate a 160 Gbps stack function and support multiple Power Supply Modules to achieve a flexible redundant configuration. They also provide common intelligent services for both wired/wireless LAN networks, such as QoS and security.



- **Highlights**
- Equipped with Cisco IOS XE Universal Image (Supports **LAN Base/IP Base/IP Services**)
- Equipped with the **Unified Access Data Plane (UADP)** ASIC
- Built-in controller function capable of managing up to 50 wireless access points (Supports IP Base/IP Services)
- Equipped with **Cisco Catalyst Multigigabit Technology (mGig)**-enabled downlink ports (some models)
- Equipped with PoE+/UPOE power supplying downlink ports (UPOE ports are only incorporated on some PSE models)
- Equipped with MACsec-enabled downlink/uplink ports (IP Base/IP Services models)
- Supports **Cisco StackWise-160**
- **Mini model** less than 12 inches deep (WS-C3650-24PDM/WS-C3650-48FQM)

■ Cisco Catalyst 3650 Series (1 of 2)

SKU	Wireless Throughput	Downlinks		Uplinks			Cisco IOS	MAC sec	Max VLANs	PoE ¹		Power Supply	Power Redundancy	RPS	Rack Mount	
		GE	mGig	SFP	SFP/SFP+	QSFP+				Ports	UPOE Ports					Power Budget
WS-C3650-24TS-L	20 Gpbs	24	-	4	-	-	LAN Base	-*2	255	-	-	250 W AC	●	-	1 RU	
WS-C3650-24TS-S	20 Gpbs	24	-	4	-	-	IP Base	●	4094	-	-	250 W AC	●	-	1 RU	
WS-C3650-24TS-E	20 Gpbs	24	-	4	-	-	IP Services	●	4094	-	-	250 W AC	●	-	1 RU	
WS-C3650-24TD-L	20 Gpbs	24	-	2	2	-	LAN Base	-*2	255	-	-	250 W AC	●	-	1 RU	
WS-C3650-24TD-S	20 Gpbs	24	-	2	2	-	IP Base	●	4094	-	-	250 W AC	●	-	1 RU	
WS-C3650-24TD-E	20 Gpbs	24	-	2	2	-	IP Services	●	4094	-	-	250 W AC	●	-	1 RU	
WS-C3650-24PS-L	20 Gpbs	24	-	4	-	-	LAN Base	-*2	255	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-24PS-S	20 Gpbs	24	-	4	-	-	IP Base	●	4094	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-24PS-E	20 Gpbs	24	-	4	-	-	IP Services	●	4094	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-24PDM-L	20 Gpbs	24	-	2	2	-	LAN Base	-*2	255	24	-	390 W	640 W AC	-	●	1 RU
WS-C3650-24PDM-S	20 Gpbs	24	-	2	2	-	IP Base	●	4094	24	-	390 W	640 W AC	-	●	1 RU
WS-C3650-24PDM-E	20 Gpbs	24	-	2	2	-	IP Services	●	4094	24	-	390 W	640 W AC	-	●	1 RU
WS-C3650-24PD-L	20 Gpbs	24	-	2	2	-	LAN Base	-*2	255	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-24PD-S	20 Gpbs	24	-	2	2	-	IP Base	●	4094	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-24PD-E	20 Gpbs	24	-	2	2	-	IP Services	●	4094	24	-	390 W	640 W AC	●	-	1 RU
WS-C3650-8X24PD-L	NEW	20 Gpbs	24	8	-	2	LAN Base	-*2	255	24	-	390 W	750 W AC	●	-	1 RU
WS-C3650-8X24PD-S	NEW	20 Gpbs	24	8	-	2	IP Base	●	4094	24	-	390 W	750 W AC	●	-	1 RU
WS-C3650-8X24PD-E	NEW	20 Gpbs	24	8	-	2	IP Services	●	4094	24	-	390 W	750 W AC	●	-	1 RU
WS-C3650-8X24UQ-L	NEW	20 Gpbs	24	8	-	4	LAN Base	-*2	255	24	24	820 W	1100 W AC	●	-	1 RU
WS-C3650-8X24UQ-S	NEW	20 Gpbs	24	8	-	4	IP Base	●	4094	24	24	820 W	1100 W AC	●	-	1 RU
WS-C3650-8X24UQ-E	NEW	20 Gpbs	24	8	-	4	IP Services	●	4094	24	24	820 W	1100 W AC	●	-	1 RU

*1 For the default power supply configuration. *2 Cisco IOS IP Base/IP Services License is required.

Cisco Catalyst 3000 Series Transition Guide

■ Cisco Catalyst 3560-X/3650 Series¹

Legacy Models	Current Models	Legacy Models	Current Models
WS-C3560X-24T-L/S/E	WS-C3650-24TS-L/S/E WS-C3650-24TD-L/S/E	WS-C3560X-48P-L/S/E	WS-C3650-48PS-L/S/E WS-C3650-48PD-L/S/E WS-C3650-48PQ-L/S/E
WS-C3560X-24P-L/S/E	WS-C3650-24PS-L/S/E WS-C3650-24PD-L/S/E WS-C3650-8X24PD-L/S/E	WS-C3560X-48U-L/S/E	WS-C3650-12X48FD-L/S/E WS-C3650-48FS-L/S/E WS-C3650-48FD-L/S/E WS-C3650-48FQ-L/S/E
WS-C3560X-24U-L/S/E	WS-C3650-24PS-L/S/E WS-C3650-24PD-L/S/E WS-C3650-8X24PD-L/S/E WS-C3650-8X24UQ-L/S/E	WS-C3560X-48PF-L/S/E	WS-C3650-12X48FD-L/S/E WS-C3650-12X48UQ-L/S/E WS-C3650-12X48UR-L/S/E WS-C3650-12X48UZ-L/S/E
WS-C3560X-48T-L/S/E	WS-C3650-48TS-L/S/E WS-C3650-48TD-L/S/E WS-C3650-48TQ-L/S/E	WS-C3560X-48U-L/S/E	WS-C3650-48FS-L/S/E WS-C3650-48FD-L/S/E WS-C3650-48FQ-L/S/E WS-C3650-12X48FD-L/S/E WS-C3650-12X48UQ-L/S/E WS-C3650-12X48UR-L/S/E WS-C3650-12X48UZ-L/S/E

■ Cisco Catalyst 3750-X/3850 Series¹

Legacy Models	Current Models	Legacy Models	Current Models
WS-C3750X-24T-L/S/E	WS-C3850-24T-L/S/E	WS-C3750X-48P-L/S/E	WS-C3850-48P-L/S/E
WS-C3750X-24P-L/S/E	WS-C3850-24P-L/S/E	WS-C3750X-48PF-L/S/E	WS-C3850-48F-L/S/E
WS-C3750X-24U-L/S/E	WS-C3850-24U-L/S/E	WS-C3750X-48U-L/S/E	WS-C3850-48U-L/S/E
WS-C3750X-48T-L/S/E	WS-C3850-24XU-L/S/E	WS-C3750X-12S-S/E	WS-C3850-12S-S/E
	WS-C3850-48T-L/S/E	WS-C3750X-24S-S/E	WS-C3850-24S-S/E

*1 Search for EOL10623 at cisco.com.

Modules & Accessories

■ Cisco Redundant Power System (RPS) 2300

SKU	Description	Compatible Series							
		95 - 500	2960-L	2960-Plus	2960-CX	3560-CX	2960-X	3650	3850
PWR-RPS2300	Cisco RPS 2300 Chassis	-	-	-	-	-	● ^{*1}	● ^{*2}	-
C3K-PWR-750WAC	750 W AC Power Supply Module for Cisco RPS 2300	-	-	-	-	-	● ^{*1}	● ^{*2}	-
CAB-RPS2300=	Spare 14-pin RPS Cable for Cisco RPS 2300	-	-	-	-	-	-	-	-
CAB-RPS2300-E=	Spare 22-pin RPS Cable for Cisco RPS 2300	-	-	-	-	-	● ^{*1}	● ^{*2}	-

■ Cisco Transceiver Module

SKU	Description	Max Distance	Compatible Series							
			95 - 500	2960-L	2960-Plus	2960-CX	3560-CX	2960-X	3650	3850
MGBT1	1000BASE-T SFP Module	100 m	●	-	-	-	-	-	-	-
MGBSX1	1000BASE-SX SFP Module	500 m	●	-	-	-	-	-	-	-
MGBLH1	1000BASE-LHSFP Module	40 km	●	-	-	-	-	-	-	-
MGBBX1	1000BASE-BX SFP Module	20 km	●	-	-	-	-	-	-	-
GLC-FE-100FX	100BASE-FX SFP Module	2 km	-	-	●	-	-	-	-	-
GLC-GE-100FX	100BASE-FX SFP Module	2 km	-	-	●	●	●	●	●	●
GLC-TE	1000BASE-T SFP Module	100 m	-	-	●	●	●	●	●	●
GLC-SX-MMD	1000BASE-SX SFP Module	1 km	-	-	●	●	●	●	●	●
GLC-LH-SMD	1000BASE-LX SFP Module	10 km	●	-	●	●	●	●	●	●
GLC-BX-D	1000BASE-BX SFP Module	10 km	-	-	● ^{*1}	●	●	●	●	●
GLC-BX-U	1000BASE-BX SFP Module	10 km	●	-	● ^{*1}	●	●	●	●	●
GLC-EX-SMD	1000BASE-EX SFP Module	40 km	-	-	-	●	●	●	●	●
GLC-ZX-SMD	1000BASE-ZX SFP Module	70 km	-	-	● ^{*1}	●	●	●	●	●
SFP-H10GB-CU1M	10GBASE-CU SFP Module	1 m	●	-	-	-	●	●	●	●
SFP-H10GB-CU1-5M	10GBASE-CU SFP Module	1.5 m	-	-	-	-	●	●	●	●
SFP-H10GB-CU2M	10GBASE-CU SFP Module	2 m	-	-	-	-	●	●	●	●
SFP-H10GB-CU2-5M	10GBASE-CU SFP Module	2.5 m	-	-	-	-	●	●	●	●
SFP-H10GB-CU3M	10GBASE-CU SFP Module	3 m	●	-	-	-	●	●	●	●
SFP-H10GB-CU5M	10GBASE-CU SFP Module	5 m	●	-	-	-	●	●	●	●
SFP-H10GB-ACU7M	10GBASE-ACU SFP Module	7 m	-	-	-	-	●	●	●	●
SFP-H10GB-ACU10M	10GBASE-ACU SFP Module	10 m	-	-	-	-	●	●	●	●
SFP-10G-AOC1M	10GBASE-AOC SFP Module	1 m	-	-	-	-	●	●	●	●
SFP-10G-AOC2M	10GBASE-AOC SFP Module	2 m	-	-	-	-	●	●	●	●
SFP-10G-AOC3M	10GBASE-AOC SFP Module	3 m	-	-	-	-	●	●	●	●
SFP-10G-AOC5M	10GBASE-AOC SFP Module	5 m	-	-	-	-	●	●	●	●
SFP-10G-AOC7M	10GBASE-AOC SFP Module	7 m	-	-	-	-	●	●	●	●
SFP-10G-AOC10M	10GBASE-AOC SFP Module	10 m	-	-	-	-	●	●	●	●
SFP-10G-SR-S	S-class 10GBASE-SR SFP+ Module	400 m	●	-	-	-	-	●	●	●
SFP-10G-SR	10GBASE-SR SFP+ Module	400 m	●	-	-	-	●	●	●	●
SFP-10G-LRM	10GBASE-LRM SFP Module	300 m	●	-	-	-	●	●	●	●
SFP-10G-LR-S	S-class 10GBASE-LR SFP+ Module	10 km	●	-	-	-	-	●	●	●
SFP-10G-LR	10GBASE-LR SFP+ Module	10 km	●	-	-	-	-	●	●	●
SFP-10G-BXD-I	10GBASE-BX SFP+ Module	10 km	-	-	-	-	-	-	●	●
SFP-10G-BXU-I	10GBASE-BX SFP+ Module	10 km	-	-	-	-	-	-	●	●
SFP-10G-BX40D-I	10GBASE-BX SFP+ Module	40 km	-	-	-	-	-	-	●	●
SFP-10G-BX40U-I	10GBASE-BX SFP+ Module	40 km	-	-	-	-	-	-	●	●
SFP-10G-ER-S	S-class 10GBASE-ER SFP+ Module	40 km	-	-	-	-	-	●	●	●
SFP-10G-ER	10GBASE-ER SFP+ Module	40 km	-	-	-	-	-	●	●	●
SFP-10G-ZR-S	S-class 10GBASE-ZR SFP+ Module	80 km	-	-	-	-	-	-	●	●
SFP-10G-ZR	10GBASE-ZR SFP+ Module	80 km	-	-	-	-	-	-	●	●
QSFP-H40G-CU1M	40GBASE-CU CFP Module	1 m	-	-	-	-	-	-	-	●
QSFP-H40G-CU3M	40GBASE-CU CFP Module	3 m	-	-	-	-	-	-	-	●
QSFP-H40G-CU5M	40GBASE-CU CFP Module	5 m	-	-	-	-	-	-	-	●
QSFP-H40G-ACU7M	40GBASE-ACU CFP Module	7 m	-	-	-	-	-	-	-	●
QSFP-H40G-ACU10M	40GBASE-ACU CFP Module	10 m	-	-	-	-	-	-	-	●
QSFP-40G-SR-BD	40GBASE-SR CFP Module	150 m	-	-	-	-	-	-	-	●
QSFP-40G-SR4	40GBASE-SR4 CFP Module	150 m	-	-	-	-	-	-	-	●
QSFP-40G-CSR4	40GBASE-CSR4 CFP Module	400 m	-	-	-	-	-	-	-	●
QSFP-40G-LR4	40GBASE-LR4 CFP Module	10 km	-	-	-	-	-	-	-	●

*1 LAN Base models only. *2 Mini models only.

■ Additional Access Point License for the Cisco 3850 Series

SKU	Additional	Primary Upgrade SKU
L-LIC-CTIOS-1A	1	L-LIC-CT3850-UPG

■ Cisco IOS XE Upgrade License for the Cisco Catalyst 3850 Series

SKU	Description
L-C3850-12-S-E	Cisco IOS IP Services License for 12-port IP Base model
L-C3850-24-L-S	Cisco IOS IP Base License for 24-port LAN Base model
L-C3850-24-S-E	Cisco IOS IP Services License for 24-port IP Base model
L-C3850-24-L-E	Cisco IOS IP Services License for 24-port LAN Base model
L-C3850-48-L-S	Cisco IOS IP Base License for 48-port LAN Base model
L-C3850-48-S-E	Cisco IOS IP Services License for 48-port IP Base model
L-C3850-48-L-E	Cisco IOS IP Services License for 48-port LAN Base model

■ Cisco Catalyst 3850 Series Bundle

SKU	Bundle				Cisco IOS
	Model	Network Module	Number of Access Point Licenses		
WS-C3850-24PW-S	WS-C3850-24P-S	-	5		IP Base
WS-C3850-24UW-S	WS-C3850-24U-S	-	5		IP Base
WS-C3850-24XUW-S	WS-C3850-24XU-S	-	5		IP Base
WS-C3850-48W-S	WS-C3850-48P-S	-	5		IP Base
WS-C3850-48PW-S	WS-C3850-48F-S	-	5		IP Base
WS-C3850-48UW-S	WS-C3850-48U-S	-	5		IP Base
WS-C3850-12X48UW-S	WS-C3850-12X48U-S	-	5		IP Base
WS-C3850-16XS-S	WS-C3850-12XS-S	C3850-NM-4-10G	5		IP Base
WS-C3850-16XS-E	WS-C3850-12XS-E	C3850-NM-4-10G	5		IP Services
WS-C3850-32XS-S	WS-C3850-24XS-S	C3850-NM-8-10G	5		IP Base
WS-C3850-32XS-E	WS-C3850-24XS-E	C3850-NM-8-10G	5		IP Services

Cisco Catalyst Multigigabit Technology (mGig)

■ Challenges for Wired LAN Posed by 11ac "Gigabit Wireless LAN"

IEEE 802.11ac is a super high-speed wireless standard that delivers a theoretical maximum throughput of up to 6.9 Gbps. Wireless LAN is literally entering the "Gigabit era", but the migration to 11ac is presenting wired LAN with "old and new" challenges. In other words, these are the same old challenges that were experienced during the migration from 11a/g to 11n. During the migration from 11a/g to 11n, it was obvious that Fast Ethernet switches (max 100 Mbps) had insufficient capacity to serve as access switches for accommodating the access points. Similarly today, it is obvious that 1-Gigabit Ethernet switches (1 GE, max 1000 Mbps) have insufficient capacity when migrating from 11n to 11ac. Specifically:

- A bottleneck will occur if the uplink port of the access switches accommodating multiple 11ac compatible access points is 1 GE.
- A bottleneck will occur if the downlink port of the access switches accommodating 11ac Wave compatible access points is 1 GE.

Therefore, as was during the migration from 11a/g to 11n, replacement of access switches is therefore indispensable in order to unleash the full potential of 11ac.

The only current IEEE standard that is faster than 1 GE is 10 Gigabit Ethernet (10 GE) with copper or optical fiber cables. However, there are some difficulties associated with the deployment of 10 GE-compatible switches.

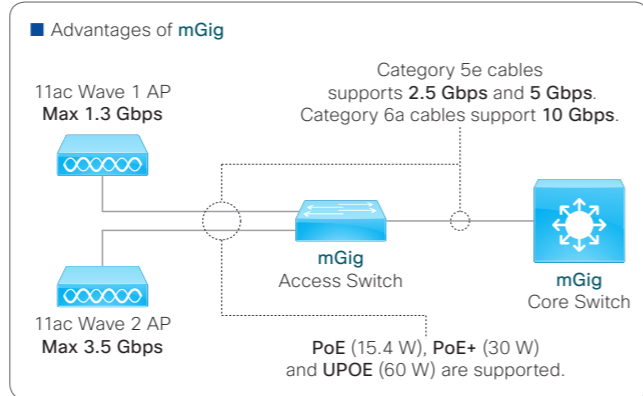
- Cable re-installation is required in many cases: Category 5e accounts for 46 % and Category 6 accounts for 28 % of the copper cables currently installed in corporations around the world, respectively. 10 GE via copper is not supported for Category 5e cables and is limited to a length of 55 meters for Category 6 cables. Installations of optical fiber cables and copper wire cables both require huge costs.
- Current 10 GE does not support PoE: Power supply units and power cables would be required for the access points.

■ Cisco Catalyst Multigigabit Technology (mGig)

Cisco's innovative **Cisco Catalyst Multigigabit Technology (mGig)** has been developed to address all of these challenges posed by the deployment of 11ac. Largely, mGig offers the following three advantages:

- Multi-speed: Category 5e cables support 100 Mbps, 1 Gbps, 2.5 Gbps and 5 Gbps; and category 6a cables support 10 Gbps, respectively.
- Cable type: A wide variety of cable types are supported including Category 5e, Category 6, and Category 6a.
- PoE: PoE (15.4 W), PoE+ (30 W), and UPOE (60 W) are supported unlike the current 10 GE.

mGig is based on the technology of the NBASE-T Alliance established by Cisco in October 2014. A large number of vendors are participating in the NBASE-T Alliance; and IEEE standardization is currently being promoted for 2.5GBASE-T for 5GBASE-T.



■ Cisco Catalyst Multigigabit Technology (mGig): Speeds and Cables

Cable Type	1 Gbps	2.5 Gbps	5 Gbps	10 Gbps
Cat 5e	●	●	●	-
Cat 6	●	●	●	● (55m)
Cat 6a	●	●	●	●



Cisco Mobility Express Solution

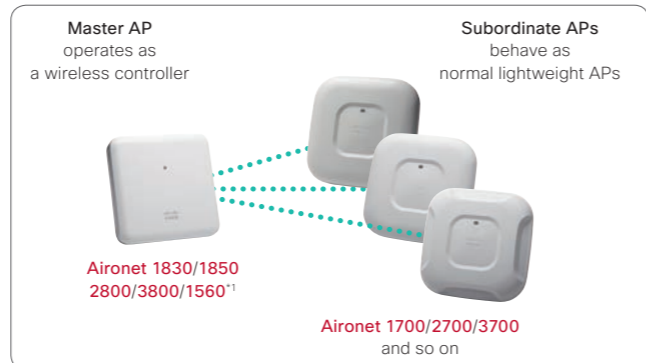
The **Cisco Mobility Express Solution** is specifically designed to help small and medium-sized networks easily and cost-effectively deliver enterprise-class wireless access to employees and customers. Cisco Mobility Express Solution is an on-premise, managed Wi-Fi solution that offers:

- The virtual **wireless controller** function supported on **Cisco Aironet 1830/1850/2800/3800/1560 Series**
- Management and control over **Cisco Aironet Access Points** including existing models such as Cisco Aironet 1600/1700/2600/2700/3600/3700 Series
- Easy, over-the-air interface for deployment in under **10 minutes**
- Small and medium-sized deployments of up to **25 access points** and **500 clients**



3-step over-the-air wireless network configuration

In the Cisco Mobility Express Solution, one access point (AP), running the Cisco Mobility Express wireless controller, is designated as the **master AP**. Other access points, referred to as **subordinate APs**, associate to this master AP. The master AP operates as a **wireless controller**, to manage and control the subordinate APs, and also operates as an access point to serve clients. The subordinate APs behave as normal lightweight access points to serve clients.

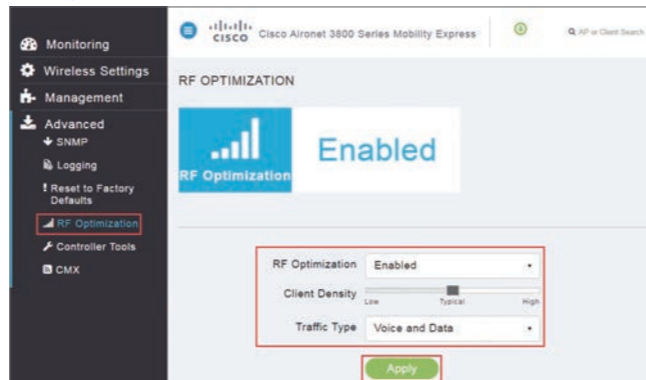


Cisco Mobility Express Software for Cisco Wireless Release 8.3

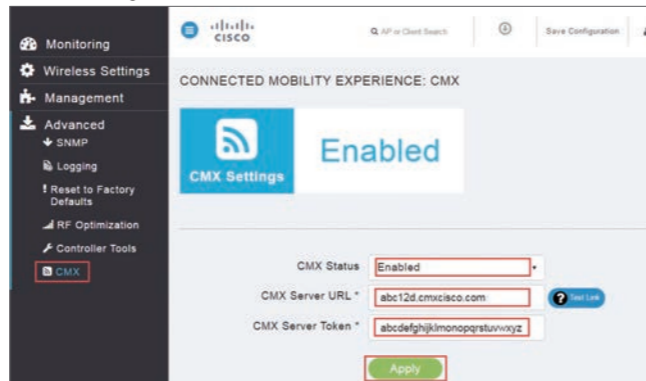
In the **Cisco Wireless Release 8.3**, the following new features and functionalities have been introduced to the Cisco Mobility Express Software:

- **Cisco CMX Cloud:** Enjoy CMX Connect for guest access & Presence Analytics with Cisco Mobility Express by the simple configuration both on Cisco Mobility Express Web UI and CMX in the cloud.
- **Automatic Redirect to the Initial Configuration Wizard:** No need to type 192.168.1.1 IP in the browser to access and set up Cisco Mobility Express.
- **Internal DHCP Server:** No external DHCP server required.
- **NTP Server Pools & OpenDNS:** Three NTP server pools are automatically configured and resolved using OpenDNS.
- **RF Optimization in the Web User Interface:** RF Optimization added on Web UI and parameters can be modified if RF characteristics change.
- **SNMP v3 in the Web UI:** SNMP v2c/v3 are supported in Web UI, also configurable from CLI including v1.
- **Online Software Update:** software download directly from cisco.com to APs. No need to download locally and unzipped, or to configure TFTP parameters.
- **Automatic Addition of APs to Mobility Express Network:** AP will automatically download code from cisco.com and join the network. No manual intervention is needed.
- **Force Mobility Express Failover:** In the Web UI, "Make me Controller" starts the controller function on the selected subordinate AP.
- **Enhanced Resiliency with Standalone Mode on 11ac Wave 2 APs:** Standalone mode will be supported on 11ac Wave 2 APs as well as 11ac Wave 1 APs. Even if master AP went offline, clients connected to these APs will stay connected and will continue to switch data locally.
- **Customized Guest Portal:** Custom Portal and Social login is supported by CMX Connect.

RF Optimization in the Web User Interface



CMX Settings in the Web User Interface

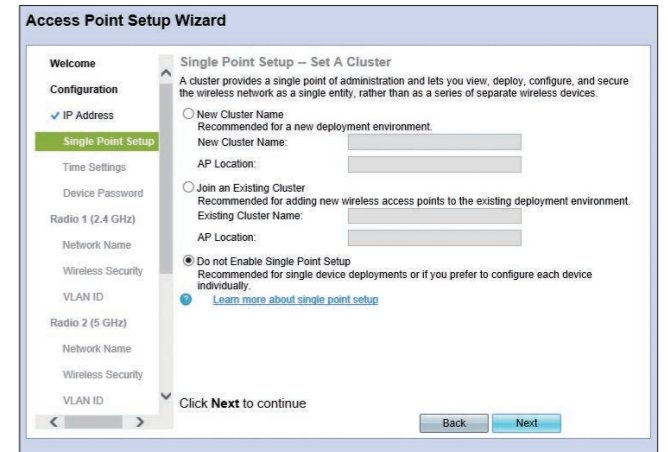


Single Point Setup

The **Single Point Setup (SPS)** is a multi-access point deployment technology supported on the **Cisco WAP Access Points**. It provides a unique centralized method to administer and control wireless services across multiple access points without controllers. Via one access point on the LAN, you have a single view of the whole wireless LAN to replicate configuration, security, and management across all access points. With SPS, the wireless LAN can scale up to **4, 8, or 16 WAPs** to provide broader coverage and support additional users as business needs change.

- **100 Series WAP** supports **4 WAPs** in a SPS cluster (except WAP 131)
- **300 Series WAP** supports **8 WAPs** in a SPS cluster.
- **500 Series WAP** supports **16 WAPs** in a SPS cluster.

You can easily create a SPS cluster of WAPs or add a new WAP to an existing SPS cluster, by the simple setup wizard or web-based configuration utility.



Cisco High Density Experience (HDX) Technology

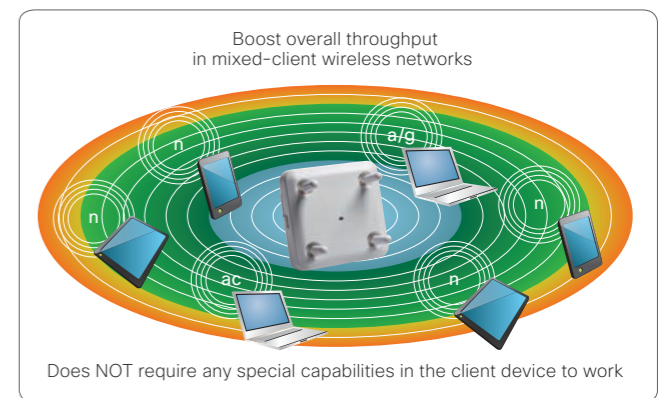
With the introduction of IEEE 802.11ac (11ac) technology, networks are only going to get more crowded. We have enhanced **Cisco High Density Experience (HDX)** suite of solutions, which automatically manages the airwaves and improves Wi-Fi performance. Available on the **Cisco Aironet 2700/2800/3700/3800 Series** Indoor Access Points and the **Cisco Aironet 1560/1570 Series** Outdoor Access Point, HDX is regularly updated with new features that alleviate high-density network strain and improve user experiences as 11ac and other trends load the airwaves with more traffic.

- **Flexible Radio Assignment & Dual 5-GHz¹:** Allows the access points to intelligently determine the operating mode of serving radios based on the RF environment. The Dual 5-GHz mode enables both radios to operate in 5-GHz client serving mode, allowing an industry-leading **5.2 Gbps** (2 x 2.6 Gbps) over-the-air speed while increasing client capacity.
- **Turbo performance:** Dedicates CPU & RAM to each radio, allows access points to scale to 60 clients or more, with each client running media-rich video or interactive traffic, without any performance degradation.

- **Cisco ClientLink for 11ac:** improves downlink performance to all mobile devices, including one-, two-, and three-spatial-stream devices on 11a/b/g/n/ac while improving battery life on mobile devices such as smartphones and tablets.
- **Cisco CleanAir for 11ac:** enhanced with 80-, and 160-MHz channel support, provides proactive, high-speed spectrum intelligence to combat performance problems due to wireless interference.
- **Optimized Roaming:** Helps ensure that client devices associate with the access point in their coverage range that offers the fastest data rate available.
- **Dynamic Bandwidth Selection:** Automatically selects the optimal channel width for each radio. For example: If radar is detected on part, but not all, of the frequency, the access point can narrow the serving channel rather than moving entirely to a new frequency, enhancing spectrum efficiency.
- **Zero Impact AVC¹:** Uses dedicated hardware acceleration to improve the performance of line-speed applications such as Cisco Application Visibility and Control (AVC).

Cisco ClientLink for 11ac

In a mixed environment with low-speed clients (e.g. 11a/g clients) and high-speed clients (e.g. 11n/ac clients), the communication performance of the entire wireless LAN network will be dragged down by the slower clients. The **Cisco ClientLink** technology implemented on Cisco Aironet Access Points uses the signal processing expansion function, which is embedded in the chipset, to analyze the uplink communication signals from the client and strengthen/optimize the downlink communication signals to enhance the communication performance of low-speed clients. **Cisco ClientLink 3.0/4.0** implemented on the **Cisco Aironet 1560/1570/2700/2800/3700/3800 Series** use the third or fourth antenna of the access points to also enhance the communication performance of 11n/ac-compatible clients supporting up to three data streams, including the iPhone, iPad and latest laptops.



Cisco CleanAir for 11ac

The **Cisco CleanAir** is an innovative technology for the Controller-based Wireless Solution that enables construction of self-recovering, self-optimizing wireless LAN environments. In conventional technologies, the network administrators were required to move around carrying a sensor-equipped laptop in order to identify the source of radio interference. In Cisco CleanAir, the Cisco Aironet Access Points with built-in ASIC (a dedicated custom chip) serve the roles of a measuring instrument and an analyzer for the wireless environment; and the data obtained from

Cisco Aironet Access Points are presented in a visualized manner. This enables network administrators to identify the cause of a problem and fix it promptly and efficiently. This technology also offers the wireless resource management function which alleviates problems by automatically optimizing the frequency band after detecting a radio interference. **Cisco Aironet 1570/2700/3700 Series** support the 80 MHz channel bandwidth of 11ac Wave 1, and **Cisco Aironet 1560/2800/3800 Series** support the 160 MHz channel bandwidth of 11ac Wave 2.

¹ Cisco Aironet 2800/3800 Series only.

Cisco WAP Access Points

Cisco WAP Access Points combine business-class features with the reliability and performance needed for small business networks. The **Single Point Set-up (SPS)** feature makes deployment of multiple access point easy and cost effective.

- Cisco 100 Series Wireless Access Points**
 Sleek and simple to configure, our 100 Series delivers the performance you need at an affordable price.
- Cisco 300 Series Wireless Access Points**
 Get Gigabit speed for your mobile devices. Use our simple controller-less management to manage multiple access points.
- Cisco 500 Series Wireless Access Points**
 Get exceptional performance and coverage for mobile devices and next-generation applications. Use our simple, controller-less management to expand your wireless network.

■ Cisco 100 Series Wireless Access Points

New SKU	Existing SKU	Wireless Data Rate	Active Users per Radio	IEEE 802					2.4 GHz	5 GHz	Con current Radios	Ports		PoE Ports		AC Power
				11a	11b	11g	11n	11ac				FE	GE	Input	Output	
WAP121-x-K9-xx	n/a	300 Mbps	16	-	●	●	●	-	●	-	-	1	-	1 ¹	-	External
WAP131-x-K9-xx	WAP4410N-xx	300 Mbps	16	●	●	●	●	-	●	●	-	1	1 ¹	-	External	
WAP150-x-K9-xx	n/a	867 Mbps	16	●	●	●	●	●	●	●	-	1	1 ¹	-	External	

■ Cisco 300 Series Wireless Access Points

New SKU	Existing SKU	Wireless Data Rate	Active Users per Radio	IEEE 802					2.4 GHz	5 GHz	Con current Radios	Ports		PoE Ports		AC Power
				11a	11b	11g	11n	11ac				FE	GE	Input	Output	
WAP321-x-K9	n/a	300 Mbps	32	●	●	●	●	-	●	●	-	1	1 ²	-	External	
WAP351-x-K9	n/a	300 Mbps	32	●	●	●	●	-	●	●	-	5	1 ²	1	External	
WAP361-x-K9	n/a	867 Mbps	32	●	●	●	●	●	●	●	-	5	1 ²	1	External	
WAP371-x-K9	n/a	1299 Mbps	32	●	●	●	●	●	●	●	-	1	1 ²	-	External	

■ Cisco 500 Series Wireless Access Points

New SKU	Existing SKU	Wireless Data Rate	Active Users per Radio	IEEE 802					2.4 GHz	5 GHz	Con current Radios	Ports		PoE Ports		AC Power
				11a	11b	11g	11n	11ac				FE	GE	Input	Output	
WAP551-x-K9	n/a	450 Mbps	32	●	●	●	●	-	●	●	-	1	1 ²	-	-	
WAP561-x-K9	n/a	450 Mbps	32	●	●	●	●	-	●	●	-	1	1 ²	-	-	
WAP571-x-K9	n/a	1299 Mbps	32	●	●	●	●	●	●	●	-	2	2 ²	-	-	
WAP571E-x-K9	n/a	1299 Mbps	32	●	●	●	●	●	●	●	-	2	2 ²	-	-	

*1 Power Adapter (included) or Power Injector is required when not using PoE receiving. *2 Power Adapter or Power Injector is required when not using PoE receiving.

Cisco Aironet Access Points

Indoor Access Points

Speed	11ac Wave 1	11ac Wave 2
2.6 Gbps		
1.7 Gbps		
1.3 Gbps		
867 Mbps		

■ Cisco Aironet Indoor Access Points

All models of the **Cisco Aironet Indoor Access Points** are compatible with the IEEE 802.11n standard; and some models are also compatible with IEEE 802.11ac delivering high-speed and stable wireless LAN environments with a theoretical maximum throughput of between 300 Mbps and 2.6 Gbps. A broad selection of models is available for various installation environments and network requirements.

- Built-in antenna model:** These models feature a streamlined body and an integrated LAN/power cable using PoE (Power over Ethernet) for a stylish installation that blends into the office environment.
- External antenna model:** These models feature a rigid metal chassis and support a wide range of operating temperatures for use in factories, warehouses and stores where environmental requirements are very strict. A wide selection of antennas are available for these models to suit different installation environments.

■ Highlights

- IEEE 802.11n-compatible (All models)
- IEEE 802.11ac Wave 1-compatible (Cisco Aironet 1700/2700/3700 Series)
- IEEE 802.11ac Wave 2-compatible (Cisco Aironet 1810/1810W/1830/1850/2800/3800 Series)
- 2.4 GHz/5 GHz dual-band (All models)
- **Cisco CleanAir Express** (Controller-based models of the Cisco Aironet 1700 Series)
- **Cisco CleanAir** (Controller-based models of the Cisco Aironet 2700/2800/3700/3800 Series)
- **Cisco OfficeExtend** (Controller-based models, excluding some models)
- **Cisco ClientLink** (excluding some models)
- **Cisco BandSelect** (Controller-based models, excluding some models)

There are two types of models for Cisco Aironet Indoor Access Points: **Stand-alone** or **Mobility Express** models, and **Controller-based** models. The Controller-based models are designed to operate in linkage with the **Cisco Wireless Controllers**.

For details on **Cisco Aironet Indoor Access Points**, visit the following Web site:

<http://www.cisco.com/go/ap>

Cisco Aironet Access Points Transition Guide





■ Cisco Aironet Indoor Access Points

11n	11ac Wave 1	11ac Wave 2
Cisco Aironet 600 Series OfficeExtend	-	Cisco Aironet 1810 Series OfficeExtend
Cisco Aironet 700 Series	-	Cisco Aironet 1830 Series
Cisco Aironet 700W Series	-	Cisco Aironet 1810W Series
Cisco Aironet 1040 Series Cisco Aironet 1600 Series	Cisco Aironet 1700 Series	Cisco Aironet 1850 Series
Cisco Aironet 1140 Series Cisco Aironet 1250 Series Cisco Aironet 1260 Series Cisco Aironet 2600 Series	Cisco Aironet 2700 Series	Cisco Aironet 2800 Series
Cisco Aironet 3500 Series Cisco Aironet 3600 Series	Cisco Aironet 3700 Series	Cisco Aironet 3800 Series


*1 Cisco Aironet 3600/3700 Series are planned to support 11ac Wave 2 via addition of a module.

Cisco Aironet Antennas and Accessories

Cisco Aironet 2.4 GHz Omni-directional Antenna

SKU	Installation/Dimensions	Gain (dBi)
 AIR-ANT2420V-N	12.70 x 2.54 cm	2.0
 AIR-ANT2450V-N	27.94 x 2.54 cm	5.0
 AIR-ANT2455V-N	31.75 x 2.54 cm	5.5
 AIR-ANT2480V-N	49.53 x 2.22 cm	8.0




Cisco Aironet 2.4 GHz Directional Antenna

SKU	Installation/Dimensions/Weight	Gain (dBi)
 AIR-ANT2413P2M-N	Patch 19.81 x 19.81 x 3.05 cm 0.61 kg	13.0


Cisco Aironet Dual-band Omni-directional Antenna

SKU	Installation/Dimensions/Weight	Gain (dBi)
 AIR-ANT2524V4C-R	Ceiling mount 18.42 x 18.42 x 2.54 cm 0.59 kg	2.0 (2.4 GHz) 4.0 (5 GHz)
 AIR-ANT2544V4M-R	Wall mount 55.37 x 16.00 cm 0.67 kg	4.0 (2.4 GHz) 4.0 (5 GHz)
 AIR-ANT2547V-N	28.19 x 3.18 cm 170 g	4.0 (2.4 GHz) 7.0 (5 GHz)
 AIR-ANT2547VG-N	28.19 x 3.18 cm 170 g	4.0 (2.4 GHz) 7.0 (5 GHz)
 AIR-ANT2568VG-N	37.59 x 3.81 cm 204 g	6.0 (2.4 GHz) 8.0 (5 GHz)


Cisco Aironet 5 GHz Omni-directional Antenna

SKU	Installation/Dimensions	Gain (dBi)
 AIR-ANT5140V-N	12.70 x 2.54 cm	4.0
 AIR-ANT5175V-N	29.59 x 2.54 cm	7.5
 AIR-ANT5180V-N	27.94 x 2.54 cm	8.0




Cisco Aironet 5 GHz Directional Antenna

SKU	Installation/Dimensions/Weight	Gain (dBi)
 AIR-ANT5114P2M-N	Patch 19.81 x 19.81 x 3.05 cm 0.61 kg	14.0

Cisco Aironet Dual-band Dipole Antenna

SKU	Color/Dimensions/Weight	Gain (dBi)
 AIR-ANT2524DB-R	Black 16.84 x 2.11 cm 36.85 g	2.0 (2.4 GHz) 4.0 (5 GHz)
 AIR-ANT2524DG-R	Grey 16.84 x 2.11 cm 36.85 g	2.0 (2.4 GHz) 4.0 (5 GHz)
 AIR-ANT2524DW-R	White 16.84 x 2.11 cm 36.85 g	2.0 (2.4 GHz) 4.0 (5 GHz)
 AIR-ANT2535SDW-R	White 8.38 x 3.18 cm 48.19 g	3.0 (2.4 GHz) 5.0 (5 GHz)

Cisco Aironet Dual-band Directional Antenna

SKU	Installation/Dimensions/Weight	Gain (dBi)
 AIR-ANT2566P4W-R	Patch 16.00 x 27.94 x 3.05 cm 0.64 kg	6.0 (2.4 GHz) 6.0 (5 GHz)
 AIR-ANT2566D4M-R	Patch 25.40 x 25.40 x 4.09 cm 1.36 kg	6.0 (2.4 GHz) 6.0 (5 GHz)
 AIR-ANT2588P3M-N	Patch 30.48 x 17.78 x 2.79 cm 0.45 kg	8.0 (2.4 GHz) 8.0 (5 GHz)
 AIR-ANT2513P4M-N	Patch 30.48 x 17.78 x 2.79 cm 0.45 kg	13.0 (2.4 GHz) 13.0 (5 GHz)

For details on Cisco Aironet Antennas, visit the following Web site:

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

Cisco Aironet 2.4 GHz Omni-directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models											
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E	
AIR-ANT2420V-N	2.0	-	-	-	-	-	-	-	-	-	-	-	-	●
AIR-ANT2450V-N	5.0	-	-	-	-	-	-	-	-	-	●	●	●	●
AIR-ANT2455V-N	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-
AIR-ANT2480V-N	8.0	-	-	-	-	-	-	-	-	-	●	●	●	●

Cisco Aironet 5 GHz Omni-directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models											
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E	
AIR-ANT5140V-N	-	4.0	-	-	-	-	-	-	-	-	-	-	-	●
AIR-ANT5175V-N	-	7.5	-	-	-	-	-	-	-	-	-	-	-	-
AIR-ANT5180V-N	-	8.0	-	-	-	-	-	-	-	-	●	●	●	●

Cisco Aironet 2.4 GHz Directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models											
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E	
AIR-ANT2413P2M-N	13.0	-	-	-	-	-	-	-	-	-	●	●	●	●

Cisco Aironet 5 GHz Directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models											
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E	
AIR-ANT5114P2M-N	-	14.0	-	-	-	-	-	-	-	-	●	●	●	●

Cisco Aironet Dual-band Di-pole Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models										
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E
AIR-ANT2524DB-R	2.0	4.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2524DG-R	2.0	4.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2524DW-R	2.0	4.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2535SDW-R	3.0	5.0	●	●	●	●	●	●	●	-	-	-	-

Cisco Aironet Dual-band Omni-directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models										
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E
AIR-ANT2524V4C-R	2.0	4.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2544V4M-R	4.0	4.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2547V-N	4.0	7.0	-	-	-	-	-	-	-	●	●	●	●
AIR-ANT2547VG-N	4.0	7.0	-	-	-	-	-	-	-	●	●	●	●
AIR-ANT2568VG-N	6.0	8.0	-	-	-	-	-	-	-	-	●	●	●

Cisco Aironet Dual-band Directional Antenna Model Compatibility Comparison

SKU	Gain (dBi)		Compatible Models										
	2.4 GHz	5 GHz	1852E	2702E	2802E	3702E	3702P	3802E	3802P	1532E	1562E	1562PS	1572E
AIR-ANT2566P4W-R	6.0	6.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2566D4M-R	6.0	6.0	●	●	●	●	●	●	●	-	-	-	-
AIR-ANT2588P3M-N	8.0	8.0	-	-	-	-	-	-	-	●	●	●	●
AIR-ANT2513P4M-N	13.0	13.0	-	-	-	-	-	-	-	●	●	●	●

Cisco Aironet Power Supply Options

SKU	Description	Compatible Models													
		700	700W	1810	1810W	1830	1850	1700	2700	2800	3700	3800	1530	1560	1570
AIR-PWRINJ4=	Power Injector	●	●	-	-	●	●	●	●	-	●	-	-	-	-
AIR-PWRINJ5=	Power Injector	●	●	●	●	● ¹	● ¹	● ²	● ²	-	-	-	-	-	-
AIR-PWRINJ6=	Power Injector	●	●	●	●	●	●	●	●	●	●	●	● ³	-	-
AIR-PWRINJ-30=	Power Injector	-	-	-	-	-	-	-	-	-	-	-	●	-	-
AIR-PWRINJ1500-2=	Power Injector	-	-	-	-	-	-	-	-	-	-	-	-	-	● ⁴
AIR-PWRINJ-60RGD1= NEW	Power Injector	-	-	-	-	-	-	-	-	-	-	-	-	●	●
AIR-PWRINJ-60RGD2= NEW	Power Injector	-	-	-	-	-	-	-	-	-	-	-	-	●	●
AIR-PWR-B=	Power Supply Module	●	-	-	-	-	-	●	●	-	●	-	-	-	-
AIR-PWR-C=	Power Supply Module	-	●	-	-	●	●	-	-	-	-	-	-	-	-
AIR-PWR-D=	Power Supply Module	●	●	●	●	●	●	-	-	-	-	-	-	-	-
AIR-PWR-50=	Power Supply Module	-	-	-	-	-	-	-	-	-	-	●	-	-	-
AIR-PWRADPT-1530=	Power Supply Module	-	-	-	-	-	-	-	-	-	-	-	●	-	-
AIR-PWRADPT-RGD1= NEW	Power Supply Module	-	-	-	-	-	-	-	-	-	-	-	●	●	-








*1 Full features are supported when powered via PoE+, AIR-PWRINJ4= or AIR-PWR-C= (The AIR-PWRINJ5 supports PoE receiving only).

*2 Full features are supported when powered via PoE+, AIR-PWRINJ4= or AIR-PWR-B= (The AIR-PWRINJ5 supports PoE receiving only).

*3 Cisco Aironet 1562: Full features are supported when powered via UPOE, AIR-PWRINJ-60RGD1/2= or AIR-PWRADPT-RGD1= (The AIR-PWRINJ6 supports PoE+ receiving only).

*4 Cisco Aironet 1572(Cn) is not supported.

Cisco Wireless Controllers

Appliance/ Virtual Machine	 2500 Series Wireless Controller	 Virtual Wireless Controller	 5500 Series Wireless Controller	 8500 Series Wireless Controller
Switch	 Catalyst 3650 Series	 Catalyst 3850 Series		
Access Point (Mobility Express)	 Aironet 1830/1850/2800/ 3800/1560 Series			

Number of Managed Access Points → More

Cisco Wireless Controllers is a platform that enables controller-based management of multiple Cisco Aironet Access Points including remote bases. An extensive lineup of products includes software products for VMware ESX/ESXi and Linux Kernel-based Virtual Machine (KVM), and dedicated hardware appliances. A flexible licensing system is adopted for the number of managed ac-

cess points, making it one of the most cost-effective solutions in the industry. The required number of managed access points can be selected based on the network requirements at the time of deployment; and the number of managed access points can be expanded flexibly based on the post-deployment network requirements.

■ Cisco Aironet 1830/1850/2800/3800/1560 Series Access Points

SKU	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports ^{*1}			Rack mount
		Default	Maximum						GE	SFP	SFP +	
Mobility Express	-	25	25	500	-	1 Gbps	-	-	-	-	-	-

■ Cisco Catalyst 3650/3850 Series Switches

Model	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports ^{*1}			Rack mount
		Default	Maximum						GE	SFP	SFP +	
Catalyst 3650	IOS XE	0	25	1,000	1,000	20 - 40 Gbps	-	-	-	-	-	1 RU
Catalyst 3850	IOS XE	0	50	2,000	1,000	20 - 40 Gbps	-	-	-	-	-	1 RU

■ Cisco 2500 Series Wireless Controller

Dimensions (Height x Width x Depth): 4.39 x 20.32 x 17.15 cm Maximum Weight: 1.59 kg

SKU	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports			Rack mount
		Default	Maximum						GE	SFP	SFP +	
AIR-CT2504-5-K9	AireOS	5	75	1,000	500	1 Gbps	●	●	4	-	-	- ^{*2}
AIR-CT2504-15-K9	AireOS	15	75	1,000	500	1 Gbps	●	●	4	-	-	- ^{*2}
AIR-CT2504-25-K9	AireOS	25	75	1,000	500	1 Gbps	●	●	4	-	-	- ^{*2}
AIR-CT2504-50-K9	AireOS	50	75	1,000	500	1 Gbps	●	●	4	-	-	- ^{*2}

■ Cisco Virtual Wireless Controller

SKU	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports			Rack mount
		Default	Maximum						GE	SFP	SFP +	
L-AIR-CTVM-5-K9	AireOS	5	3,000	32,000	3,000	500 Mbps	●	-	-	-	-	-

■ Cisco 5500 Series Wireless Controller (5508/5520)

SKU	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports			Rack mount
		Default	Maximum						GE	SFP	SFP +	
AIR-CT5508-12-K9	AireOS	12	500	7,000	5,000	8 Gbps	●	●	-	8	-	1 RU
AIR-CT5508-25-K9	AireOS	25	500	7,000	5,000	8 Gbps	●	●	-	8	-	1 RU
AIR-CT5508-50-K9	AireOS	50	500	7,000	5,000	8 Gbps	●	●	-	8	-	1 RU
AIR-CT5520-K9	AireOS	0	1,500	20,000	25,000	20 Gbps	●	●	-	-	2	1 RU
AIR-CT5520-50-K9	AireOS	50	1,500	20,000	25,000	20 Gbps	●	●	-	-	2	1 RU

■ Cisco 8500 Series Wireless Controller (8510/8540)

SKU	OS	Managed Access Points		Clients	RF tags	Throughput	Office Extend	Wireless Mesh	Ports			Rack mount
		Default	Maximum						GE	SFP	SFP +	
AIR-CT8510-300-K9	AireOS	300	6,000	64,000	50,000	10 Gbps	●	●	-	-	2	1 RU
AIR-CT8510-500-K9	AireOS	500	6,000	64,000	50,000	10 Gbps	●	●	-	-	2	1 RU
AIR-CT8510-1K-K9	AireOS	1,000	6,000	64,000	50,000	10 Gbps	●	●	-	-	2	1 RU
AIR-CT8510-3K-K9	AireOS	3,000	6,000	64,000	50,000	10 Gbps	●	●	-	-	2	1 RU
AIR-CT8510-6K-K9	AireOS	6,000	6,000	64,000	50,000	10 Gbps	●	●	-	-	2	1 RU
AIR-CT8540-K9	AireOS	0	6,000	64,000	50,000	40 Gbps	●	●	-	-	4	2 RU
AIR-CT8540-1K-K9	AireOS	1,000	6,000	64,000	50,000	40 Gbps	●	●	-	-	4	2 RU

*1 Depends on models. *2 Rack Mounting Brackets (AIR-CT2504-RMNT) is required.

■ Additional Access Point License for Cisco 2500 Series Wireless Controller^{*1}

SKU	Additional	Compatible Models
L-LIC-CT2504-1A	1	2504
L-LIC-CT2504-5A	5	2504
L-LIC-CT2504-25A	25	2504

■ Additional Access Point License for Cisco Virtual Wireless Controller^{*2}

SKU	Additional	Compatible Models
L-LIC-CTVM-1A	1	-
L-LIC-CTVM-5A	5	-
L-LIC-CTVM-25A	25	-

■ Additional Access Point License for Cisco 5500 Series Wireless Controller^{*4}

SKU	Additional	Compatible Models
L-LIC-CT5508-1A	1	5508
L-LIC-CT5508-25A	25	5508
L-LIC-CT5508-50A	50	5508
L-LIC-CT5508-100A	100	5508
L-LIC-CT5508-250A	250	5508
LIC-CT5520-1A	1	5520

■ Additional Access Point License for Cisco 8500 Series Wireless Controller^{*5}

SKU	Additional	Compatible Models
L-LIC-CT8500-1A	1	8510
L-LIC-CT8500-100A	100	8510
L-LIC-CT8500-500A	500	8510
L-LIC-CT8500-1000A	1,000	8510
LIC-CT8540-1A	1	8540

*1 L-LIC-CT2504-UPG is required. *2 L-LIC-CTVM-UPG is required. *3 L-LIC-WISM2-UPG is required. *4 L-LIC-CT5508-UPG or L-LIC-CT5540-UPG is required. *5 L-LIC-CT8500-UPG or L-LIC-CT8540-UPG is required.

Cisco Wireless Controller Software

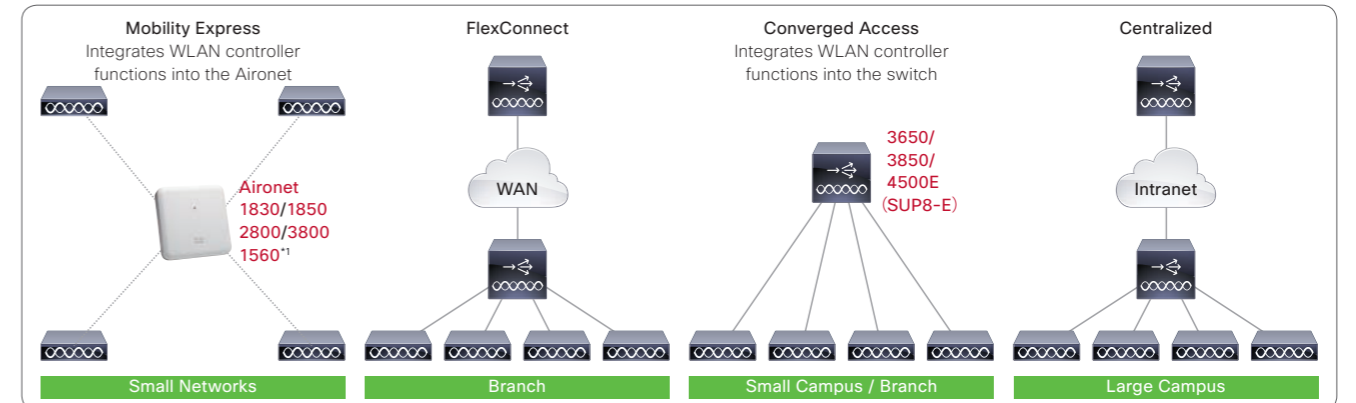
Unlike traditional products, the **Cisco Catalyst 3650/3850 Series** incorporate the Cisco IOS XE based wireless controller software. Rich features of the Cisco IOS including **Flexible NetFlow**, advanced QoS and **dACL (downloadable Access Control List)** can be provided for wireless LAN networks as well.

■ Cisco Wireless Controller Software Specification Comparison

	AirOS	IOS-XE
Resilience	Client SSO, AP SSO, N+1, High-availability option SKU	AP SSO, Multiple LAG, High-availability option SKU
QoS	Alloy QoS	High level of QoS (MQC)
Security	Dynamic ACLs, SGA (SXP)	dACL
Roaming	L2 and L3 FSR, IEEE 802.11r, Neighbor List	L2 and L3 FSR
Service	Bonjour, AVC, Static Netflow	Flexible Netflow, AVC
Command Line Interface	Secure FTP	Cisco IOS CLI, Secure Shell, EEM/TCL/TK

Deployment Modes

Cisco's wireless solutions can be broadly classified into **Standalone** systems that operate **Cisco Aironet Access Points** individually and **Controller-based** systems that centrally manage multiple Cisco Aironet Access Points using a **Cisco Wireless Controller**. Multiple expansion modes are also supported in **Controller-based** systems.



The **Mesh Mode**, **FlexConnect + Mesh Mode**, **OfficeExtend Mode**, **Monitor Mode**, **Rogue Detector Mode**, and **Sniffer Mode** are also supported.

■ Cisco Wireless Controller Deployment Mode Compatibility Comparison

Platform	Deployment Modes					
	Mobility Express	FlexConnect	Converged Access	Centralized	Mesh	OfficeExtend
Cisco Aironet 1830/1850/2800/3800/1560 Series Access Points	●	-	-	-	-	-
Cisco Catalyst 3650/3850 Series Switches	-	-	●	●	-	-
Cisco 2500 Series Wireless Controller	-	●	-	●	●	●
Cisco Virtual Wireless Controller	-	●	-	-	-	-
Cisco 5500 Series Wireless Controller	-	●	● ^{*1}	●	●	●
Cisco 8500 Series Wireless Controller	-	●	-	●	●	●

*1 Cisco Wireless Controller Software release 7.3.112.0 is required. *2 Cisco AireOS 8.1 and higher are not supported.

Mobility Services & Network Management Tools

Cisco Mobility Services Engine (MSE)

Cisco Mobility Services Engine (MSE) is a platform that provides a wide range of mobility services including Cisco CleanAir, Cisco Base Location Services, Cisco Connected Mobile Experiences (CMX), and Cisco Wireless Intrusion Prevention System (wIPS). This platform is implemented as a software product on VMware ESX/ESXi or as a hardware appliance.



■ Cisco Connected Mobile Experiences (CMX) release 10
Cisco CMX 10 is a platform that enhances the Cisco wireless LAN by:

- Calculating the location of all wireless devices in a venue, including mobile devices, tags, rogue access points, and wireless interferers.
- Generating advanced location analytics (CMX Analytics).
- Providing a visitor wireless onboarding platform (CMX Connect).
- Calculating the location of Bluetooth Low Energy (BLE) beacons.

- Cisco Connected Mobile Experiences (CMX) release 10 License
 - Cisco CMX Base License
Provides the ability to determine the location of Wi-Fi clients, Bluetooth low energy (BLE) beacons, devices, and RFID tags, CMX Connect, third-party integration using standard REST APIs.
 - Cisco CMX Advanced License
Provides all the CMX Base services and CMX Analytics, CMX Presence Analytics
 - Cisco wIPS Monitor Mode License
Provides wIPS for Cisco Aironet Access Points in monitor mode (will be available in a future release).
 - Cisco wIPS Enhanced Local Mode License
Provides wIPS for Cisco Aironet Access Points in local mode (will be available in a future release).

■ Cisco Mobility Services Engine (MSE)

SKU	Description	Managed Access Points	
		Location service CMX	wIPS Monitor Mode wIPS Enhanced Local Mode
L-MSE-7.0-K9	Software product	5,000	10,000
AIR-MSE-3365-K9	Hardware appliance	10,000	10,000

■ Cisco CMX Base License

SKU	CMX 10.x ²	Supported Access Points
MSE 8.0 ¹	L-LS-1AP-N	1
L-LS-1AP	-	100
L-LS-100AP	-	1,000
L-LS-1000AP	-	1,000

■ Cisco wIPS Monitor Mode License

SKU	CMX 10.x ²	Supported Access Points
MSE 8.0 ¹	TBD	1
L-WIPS-MM-1AP	TBD	100
L-WIPS-MM-100AP	TBD	1,000
L-WIPS-MM-1000AP	TBD	1,000

■ Cisco CMX Advanced License

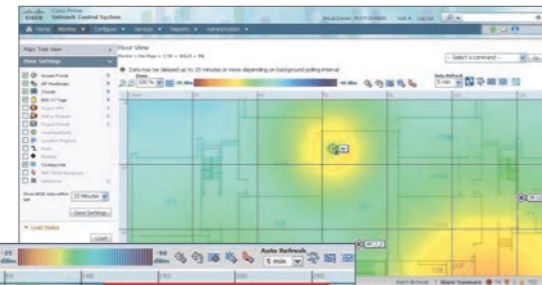
SKU	CMX 10.x ²	Supported Access Points
MSE 8.0 ¹	L-AD-LS-1AP-N	1
L-AD-LS-1AP	-	100
L-AD-LS-100AP	-	1,000
L-AD-LS-1000AP	-	1,000
L-UPG-LS-1AP	L-UPG-LS-1AP-N	1

■ Cisco wIPS Enhanced Local Mode License

SKU	CMX 10.x ²	Supported Access Points
MSE 8.0 ¹	TBD	1
L-WIPS-ELM-1AP	TBD	100
L-WIPS-ELM-100AP	TBD	1,000
L-WIPS-ELM-1000AP	TBD	1,000

Cisco Prime Infrastructure

Cisco Prime Infrastructure is an integrated management platform that enables comprehensive management of the entire network including wired/wireless LAN at the headquarters and branches. This platform not only enables devices comprising wired/wireless LAN networks to be managed as physical assets but also enables the networks to be managed from the user service level perspective, based on the rich information collected from the devices.



■ Cisco Prime Infrastructure 3.x Hardware Appliance

SKU	Description
PI-UCS-APL-K9	Generation 2 Hardware Appliance
PI-UCS-APL-U-K9	Upgrade from Generation 1

■ Cisco Prime Infrastructure 3.x Software & Base License³

SKU	Description
R-PI30-SW-K9	Prime Infrastructure 3.0 Software
L-MGMT3X-PI-BASE	Base License

■ Cisco Prime Infrastructure 3.x High Availability License³

SKU	Description
L-MGMT3X-HA	High Availability License

■ Cisco Prime Infrastructure 3.x Lifecycle & Assurance License³

SKU	Managed Devices	QTY
L-MGMT3X-2K-K9	Cisco Catalyst 2000 Series	1
L-MGMT3X-3K-K9	Cisco Catalyst 3000 Series	1
L-MGMT3X-4K-K9	Cisco Catalyst 4000 Series	1
L-MGMT3X-6K-K9	Cisco Catalyst 6000 Series	1
L-MGMT3X-CSR1-K9	Cisco CSR 1000 Series	1
L-MGMT3X-800SR-K9	Cisco ISR 800 Series	1
L-MGMT3X-ISR1-K9	Cisco ISR 1000 Series	1
L-MGMT3X-ISR2-K9	Cisco ISR 2000 Series	1
L-MGMT3X-ISR3-K9	Cisco ISR 3000 Series	1
L-MGMT3X-ISR4-K9	Cisco ISR 4000 Series	1

SKU	Managed Devices	QTY
L-MGMT3X-ASR1K9	Cisco ASR 1000 Series	1
L-MGMT3X-AP-K9	Cisco Aironet Access Point	1
L-MGMT3X-N2K-K9	Cisco Nexus 2000 Series Fabric Extender (FEX)	1
L-MGMT3X-N3K-K9	Cisco Nexus 3000 Series	1
L-MGMT3X-N5K-K9	Cisco Nexus 5000 Series	1
L-MGMT3X-N6K-K9	Cisco Nexus 6000 Series	1
L-MGMT3X-N7K-K9	Cisco Nexus 7000 Series	1
L-MGMT3X-N93XX-K9	Cisco Nexus 9300 Series	1
L-MGMT3X-N9K-K9	Cisco Nexus 9000 Series	1

*1 L-MSE-PAK is required. *2 L-MSE-PAK-N is required. *3 R-MGMT3X-N-K9 is required.

Cisco Connected Mobile Experiences (CMX) Solutions

The Cisco Connected Mobile Experiences (CMX) is a revolutionary solution that collects and analyzes the location of wireless LAN (Wi-Fi) devices such as smartphones and tablets for business utilization. This solution supports the monetization of wireless LAN in a wide range of sectors including retail, services, transportation, healthcare, education, and government offices. This solution already has an excellent deployment track record overseas. And in Asia Pacific, positive results have been obtained in demonstration experiments

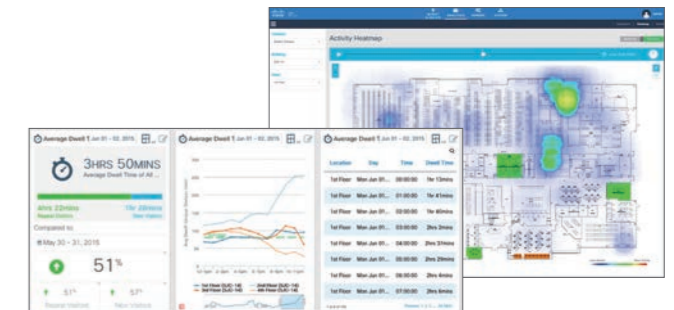
conducted at events such as Interop Tokyo 2013/2014; and its commercial deployment is already in the pipeline. Cisco CMX provides the services described below.

For details on Cisco CMX, visit the following Web site:
<http://www.cisco.com/go/cmz>

■ Location Analysis

This function anonymously detects and traces Wi-Fi device signals to obtain, aggregate and visualize the number of Wi-Fi users and their movement for analysis. In the Copenhagen Airport case study, for example, this function enabled analysis of the general movement route and staying area/time of travelers (i.e. Wi-Fi users) during their departure and arrival, enabling better understanding of their different behavior patterns. This has enabled optimization of personnel allocation based on crowding and adjustment of the facility layout for improved customer convenience, helping to deliver services that guarantee high levels of customer satisfaction in a cost-effective manner. This function has also facilitated effective attraction of customers through optimization of the advertisement layout, contributing to bursting the earnings of duty free shops and tenant stores.

■ Offering a Variety of Analysis Methods Including Traffic Line Information and Residence Time



■ Customer Engagement

The ability to capture new and keep existing customers by delivering more value is essential to continued growth in all industries. Cisco CMX allows customers mobile users to connect through your onsite wireless LAN. It opens a direct channel of communication that lets you better understand and deliver what your guests want. When you more effectively engage your mobile users, you can:

- Increase loyalty of existing customers and attract new customers by providing them with a personalized experience
- Heighten the guest experience by providing wireless access and key information during their journey
- Increase brand exposure through social media check-in and feed streaming
- Increase visitor satisfaction by helping them make decisions more aligned with their needs

■ Venue Efficiency

By helping you better understand how your visitors actually behave while at your site, Cisco CMX helps you make the best use of your floor plan. With this improved insight, you can:

- Determine the most trafficked locations to position advertisements, products or services
- Adjust venue layout to optimize traffic flow in periods of high use
- Staff service locations to accommodate visitor flows and time of day
- Evaluate impact of floor plan adjustments

For your customers and your business, the Cisco CMX solution can deliver the right information at the right time.

■ Cisco CMX for Facebook Wi-Fi

Cisco has also begun a new Cisco CMX service called Cisco CMX for Facebook Wi-Fi in collaboration with Facebook. In hotels and shops that are deploying this service, Wi-Fi users can use free wireless LAN by checking in with the facility using the facility's wireless network.

This solution not only improves user convenience but also offers a variety of business benefits including better customer recognition thanks to the increased number of check-ins and marketing based on the customer information collected anonymously by Facebook.

Cisco CMX Cloud

Cisco CMX Cloud revolutionizes the delivery of wireless guest access and in-venue analytics, integrating seamlessly with Cisco wireless infrastructure.

This cloud-delivered Software-as-a-Service (SaaS) offering is quick to deploy and intuitive to use. The affordable subscription-billing model helps reduce initial investments in equipment (capital expenditures [CapEx]) and IT resources. Ultimately, this solution accelerates how wireless infrastructure can deliver business outcomes by:

- Detecting all Wi-Fi devices (the "devices") in the venue and providing analytics on their presence, including dwell times, new vs. repeat visitors, and peak times
- Providing an easy-to-use guest-access solution for visitors through a custom portal using various authentication methods including social, self-registration, and Short Message Service (SMS)
- Engaging visitors directly on the guest portal page or mobile app with location-based content

■ Cisco Connected Mobile Experiences Cloud

SKU	Description	SKU	Description
AIR-CMX-SVC-CX ¹	CMX Cloud Connect.	AIR-CMX-SVC-CPAX ¹	CMX Cloud Connect with Presence Analytics.



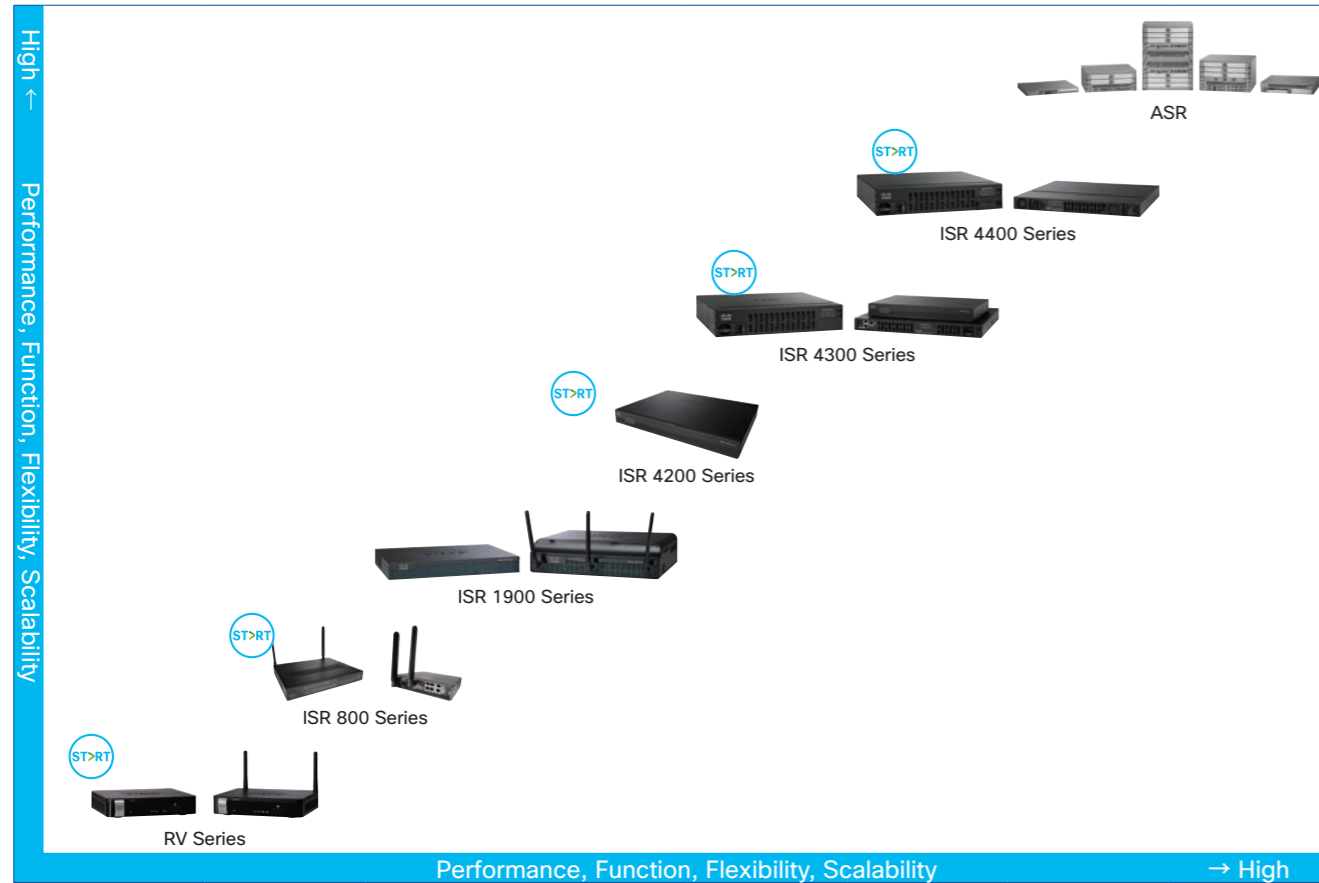
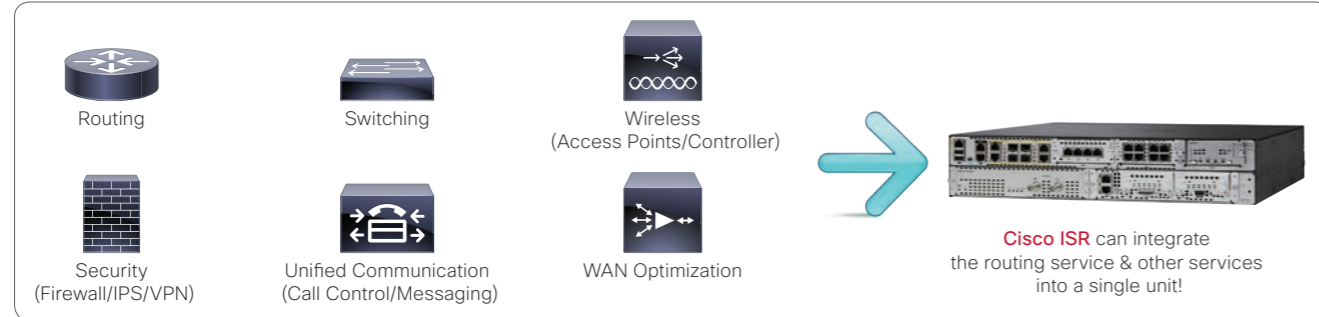
*1 AIR-CMX-CLOUD is required.



Positioning Map of Cisco Routers

Previously, even the small-scale bases were required to install a wide range of devices including switches, wireless access points and WAN optimization appliances. The **Cisco Integrated Services Routers (ISR)** are "super routers" that are capable of integrating the network services provided by these multiple devices into a single platform. These routers are not only capable of integrating

multiple services but also have the flexibility to add new services as required via license activation and/or addition of expansion modules. Adoption of these routers results in simpler network configuration, helping to reduce the device costs as well as operation and maintenance costs.



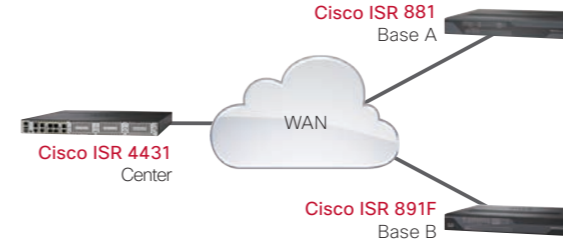
Cisco RV Series	Fixed-configuration routers. Suitable for the small-sized network.		P42
Cisco ISR 800 Series	Fixed-configuration integrated services routers. Suitable for deployment in small-sized bases, home offices and Machine-to-Machine (M2M) environments.		P43
Cisco ISR 4000 Series	Modular integrated services routers. Suitable for deployment in bases that require a provision of application-aware services.		P44

Selection of Cisco ISR

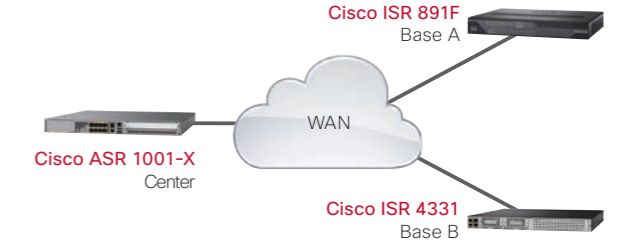
Routers with higher performance and expandability should be selected for traffic-intensive data centers than the bases. **Cisco ISR** not only allows selection of bundle models according to the services required at the data centers or

bases, but also respond flexibly to changes in the business needs by means of license activation of **Cisco IOS** technologies and addition of expansion modules.

Sample inter-base network configuration: small-scale network



Sample inter-base network configuration: Medium-scale network



Benefits of Migrating to Cisco ISR 4000 Series

The Cisco ISR 4000 Series build on 20 years of branch-office routers, adding services and horsepower for the needs of modern branch offices and allowing businesses to:

- Quickly open new remote offices or easily add additional services
- Operate an entire branch office with a single box
- Give IT departments more time for innovation by automating repetitive tasks and orchestrating security and application services

The **Cisco ISR 4000 Series** address the problems that modern branch offices face, without giving up any of the existing services of previous-generation Cisco ISRs. It also brings virtualization to networking so that IT can adopt services faster and repurpose resources as needs change. And it delivers additional computing power for local application survivability, data backup, and local analytics processing.

The new architecture of the Cisco ISR 4000 Series delivers up to 2 Gbps in a converged platform, typically 4 to 10 times faster than the previous-generation ISRs. The WAN and application optimization services of the Cisco ISR 4000 Series include **Cisco Application Visibility and Control (AVC)**, allowing IT to assess capacity planning; and **Cisco Performance Routing Version 3 (PfR v3)**, which automatically sends traffic across the best connection for current network conditions. Not only does this architecture allow a branch office to run the network with a single box, it also allows use of that box to converge network, computing, and storage resources in the same platform. The virtualization technology available both embedded within the Cisco ISR 4000 Series and through additional data center-class server modules (**Cisco UCS E Series Servers**) offers new levels of converged capability.



Series Comparison

Branch Network Needs	Features	Cisco ISR 1800/2800/3800 Series	Cisco ISR 1900/2900/3900 Series	Cisco ISR 4000 Series	Benefits
	Maximum throughput	Up to 50 Mbps	Up to 350 Mbps	Up to 2 Gbps	4 to 10 times performance increase for the same price as the ISR G2
	Separate data, control, and services planes	-	-	●	Minimal performance impact as network services are added and throughput increases
	Integrated service container	-	-	●	No need for additional branch appliances; add network services using pluggable virtual machines
	Integrated compute with Cisco UCS E-Series Servers	-	●	●	Local compute resources for applications, data backup, and analytics
	Cisco IOS XE Operating System	-	-	●	Higher availability for network services with multicore processing
	Cisco Application Visibility and Control (AVC)	-	●	●	Visibility into 1000+ applications for capacity planning and prioritization
	Intelligent path selection (PfR v3)	-	●	●	Improve application experience and lower costs with path selection using real-time analytics
	WAN optimization (WAAS and Akamai)	-	●	●	Improve application performance and offload WAN with Layer 4-7 optimization and intelligent caching
	Sourcefire Intrusion Detection System (IDS)	-	●	●	Industry-leading advanced threat defense
	Cloud Web Security with Advanced Malware Protection (AMP)	-	●	●	Scale secure direct Internet access with consistent policy enforcement
	Multicore hardware VPN acceleration	-	-	●	High-performance encryption for secure WAN
	Pay-as-you-grow performance and services	-	-	●	Ability to buy what you need today and upgrade anytime without complete equipment upgrades
	Cisco ONE Software Suites	-	●	●	Predictable OpEx spend, license portability, and investment protection
	Intelligent WAN app with Cisco APIC Enterprise Module	-	●	●	Automated provisioning for faster deployment

Cisco RV Series

Cisco RV Series are affordable, highly secure network access devices, designed and built for small businesses. Cisco offers a broad range of small business routers to meet any requirement from basic Internet connectivity to high-capacity, business-critical networking.

GE WAN & GE LAN: RV130 with Web Filtering, RV130W with Web Filtering, RV320 with Web Filtering, RV325 with Web Filtering, RV130, RV130W, RV134W, RV042G, RV320, RV325

GE WAN & FE LAN: RV315W

FE WAN: RV110W, RV132W, RV215W, RV042

ISR

Performance, Function, Flexibility, Scalability → High

■ Cisco RV Series

New SKU	Existing SKU	WAN Ports				LAN Ports		IPsec Throughput	IPsec VPN Tunnels		Web Filtering	Wireless				AC Power
		FE	GE	xDSL	3G/4G	FE	GE		Site-to-Site	Remote Access		11n	11ac	2.4 GHz	5 GHz	
CVR100W-x-K9-xx	n/a	1	-	-	-	4	-	5 Mbps	1	3	-	●	-	●	-	External
RV042	n/a	2	-	-	-	4	-	59 Mbps	50	50	-	-	-	-	External	
RV042G-K9-xx	n/a	-	2	-	-	4	-	75 Mbps	50	50	-	-	-	-	External	
RV110W-x-xx-K9	n/a	1	-	-	-	4	-	5 Mbps	1	5	-	●	-	●	External	
RV130-K9-xx	RV180-K9-xx	-	1	-	1 ¹	-	4	50 Mbps	10	10	-	-	-	-	External	
RV130-WB-K9-xx	RV180-K9-xx	-	1	-	1 ¹	-	4	50 Mbps	10	10	●	-	-	-	External	
RV130W-x-K9-xx	RV120W-x-xx RV180W-x-K9-xx	-	1	-	1 ¹	-	4	50 Mbps	10	10	-	●	-	●	External	
RV130W-x-WB-K9-xx	RV120W-x-xx RV180W-x-K9-xx	-	1	-	1 ¹	-	4	50 Mbps	10	10	●	●	-	●	External	
RV132W-x-K9-xx	n/a	1	-	1	1 ¹	3	-	3 Mbps	5	5	-	●	-	●	External	
RV134W-x-K9-xx	n/a	-	1	1	1 ¹	-	4	20 Mbps	5	5	-	●	●	●	External	
RV215W-x-K9-xx	n/a	1	-	-	1 ¹	4	-	5 Mbps	1	5	-	●	-	●	External	
RV315W-x-K9-xx	n/a	-	2	-	1 ¹	8	-	100 Mbps	50	50	-	●	-	●	External	
RV320-K9-xx	n/a	-	2	-	1 ¹	-	4	100 Mbps	25	25	●	-	-	-	External	
RV320-WB-K9-xx	n/a	-	2	-	1 ¹	-	4	100 Mbps	25	25	-	-	-	-	External	
RV325-K9-xx	n/a	-	2	-	1 ¹	-	14	100 Mbps	25	25	-	-	-	-	External	
RV325-WB-K9-xx	n/a	-	2	-	1 ¹	-	14	100 Mbps	25	25	●	-	-	-	External	

¹ 3G/4G modem is required.

New Models with Web Filtering

Your business and your employees are exposed to phishing, key loggers, spyware, drive-by malware, and other online threats. With the new **RV130/130W/320/325 with web filtering**, you can keep your employees and users safe from unwanted content and malicious websites. This is accomplished without compromising the users' online experience and can even help boost employee productivity and network performance by limiting Internet surfing to appropriate site categories and eliminating unwanted network traffic. Users are also automatically protected from malicious/compromised websites, regardless of site categorization.

- **Dynamic Web Filtering**
Router checks URLs with Cisco cloud
Router caches websites to speed up response time over time
- **Classification System**
300 Million web URL's categorized and assigned reputation score
Sophisticated website reputation scoring (think of credit score)
80+ content categories
Real-time updates
- **No License Renewal are Necessary**

Cisco ISR 800 Series

Fixed-configuration Integrated Services Routers suitable for deployment in small-sized bases, home offices and Machine-to-Machine (M2M) environments. In addition to the routing service, a wide variety of services including switching, wireless security, unified communication, and WAN optimization can be integrated using a single router unit.

■ Highlights

- Cisco IOS Universal Image (IP Base/Advanced Security/Advanced IP Services)
- Built-in managed switch (All models)
- Built-in IEEE 802.11n-compatible wireless access point (C819GW-LTE-LA-xK9/C881W-x-K9)
- 4G LTE wireless WAN (Some models)

■ Cisco ISR 800 Series (1 of 2)

SKU	Description	Dimensions (Height x Width x Depth)	Maximum Weight
C819H-K9	Cisco ISR 819H M2M Hardened Model	4.39 x 19.56 x 20.57 cm	1.45 kg
C819G-LTE-LA-K9	Cisco ISR 819G 4G LTE 2.5 M2M Model	4.24 x 19.56 x 18.29 cm	1.04 kg
C819GW-LTE-LA-xK9	Cisco ISR 819G 4G LTE 2.5 Wireless M2M Model	4.24 x 19.56 x 22.86 cm	1.04 kg
C819HG-4G-G-K9	Cisco ISR 819HG 4G LTE M2M Hardened Model	4.39 x 19.56 x 20.57 cm	1.45 kg
C867VAE	Cisco ISR 867VAE IP Base Model	3.85 x 20.90 x 19.80 cm	2.49 kg
C867VAE-K9	Cisco ISR 867VAE Advanced Security Model	3.85 x 20.90 x 19.80 cm	2.49 kg
C881W-x-K9	Cisco ISR 881W Wireless Model	4.82 x 32.51 x 26.42 cm	2.49 kg
C881V-K9	Cisco ISR 881V Router	4.82 x 32.51 x 24.89 cm	2.49 kg
C891F-K9	Cisco ISR 891F Router	4.62 x 32.28 x 24.84 cm	2.49 kg
C891-24X/K9	Cisco ISR 891-24X	4.62 x 43.82 x 30.48 cm	2.49 kg
C892FSP-K9	Cisco ISR 892FSP	4.62 x 32.28 x 24.84 cm	2.49 kg
C897VA-K9	Cisco ISR 897VA	4.62 x 32.28 x 24.84 cm	2.49 kg
C897VAG-LTE-LA-K9	Cisco ISR 897VAG 4G LTE 2.5 Model	4.82 x 32.51 x 26.42 cm	2.58 kg
C898EAG-LTE-LA-K9	Cisco ISR 898EAG 4G LTE 2.5 Model	4.82 x 32.51 x 26.42 cm	2.58 kg
C899G-LTE-LA-K9	Cisco ISR 899G 4G LTE 2.5 Model	4.82 x 32.51 x 26.42 cm	2.58 kg

■ Cisco ISR 800 Series (2 of 2)

SKU	Cisco IOS	WAN Ports						LAN Ports		Wireless		Security		Voice	WAASX	Rack mount
		FE	GE	GE/SFP	ISDN	xDSL	Voice	FE	GE	AP	4G LTE	FW	VPN			
C819H-K9	Advanced IP Services	-	1	-	-	-	-	4	-	-	-	●	●	-	●	- ⁵
C819G-LTE-LA-K9	Advanced IP Services	-	1	-	-	-	-	4	-	-	●	●	●	-	●	- ⁵
C819GW-LTE-LA-xK9	Advanced IP Services	-	1	-	-	-	-	4	-	-	●	●	●	-	●	- ⁵
C819HG-4G-G-K9	Advanced IP Services	-	1	-	-	-	-	4	-	-	●	●	●	-	●	- ⁵
C867VAE	IP Base	-	1	-	-	1	-	3	2	-	-	-	-	-	-	-
C867VAE-K9	Advanced Security	-	1	-	-	1	-	3	2	-	-	-	-	-	-	-
C881W-x-K9	Advanced Security	1	-	-	-	-	-	4	-	●	-	●	●	-	-	-
C881V-K9	Advanced IP Services	1	-	-	-	-	7 ²	4	-	-	-	●	●	● ³	-	-
C891F-K9	Advanced IP Services	1	-	1	1	-	-	8	-	-	●	●	●	-	● ⁴	- ⁶
C891-24X/K9	Advanced IP Services	-	-	2	-	-	-	24	-	-	●	●	●	-	-	- ⁷
C892FSP-K9	Advanced IP Services	-	1	1	-	-	-	8	-	-	●	●	●	-	● ⁴	- ⁶
C897VA-K9	Advanced IP Services	-	-	1	1	1	-	8	-	-	●	●	●	-	● ⁴	- ⁶
C897VAG-LTE-LA-K9	Advanced IP Services	-	-	1	-	1	-	8	-	●	●	●	●	-	● ⁴	- ⁶
C898EAG-LTE-LA-K9	Advanced IP Services	-	-	1	-	1	-	8	-	●	●	●	●	-	● ⁴	- ⁶
C899G-LTE-LA-K9	Advanced IP Services	-	1	1	-	-	-	8	-	●	●	●	●	-	● ⁴	- ⁶

¹ The "x" corresponds to the supported domain. ² BRI x 2, FXS x 4, FXO x 1. ³ Call control and messaging are not supported. ⁴ Feature License is required. ⁵ DIN Rail Mount and Floor/Wall Mount are supported (Optional). ⁶ ACS-890-RM-19 is required. ⁷ ACS-2901-RM-19 is required.

Machine-to-Machine (M2M)

Machine-to-Machine (M2M) is a technology that aggregates the intercommunications between machines without human intervention. This technology is already used in a wide range of devices such as vending machines, surveillance systems and sensor-equipped measuring instruments; and its adoption is expected to continue at an accelerated pace. The most important elements for network devices offering the M2M technology are compactness, mobility and durability.

In the case of vending machines, for example, the network device needs to be compact to allow installation inside the machines. Mobility is also important as it is cheaper to use the mobile 4G network than installing a wired broadband line for each vending machine. Depending on the installation location, the network device must also have the durability to withstand the high temperatures in summer.

Cisco 819H/G/HG has been developed to address these issues. Both models feature a palm-sized compact chassis and are compatible with 4G LTE 2.0 wireless LAN. Furthermore, Cisco 819H/HG can operate in temperatures between -23 and +60 deg C and in up to 95% humidity and have superior vibration and impact resis-

tance to withstand industrial use. A wide variety of mounting options are supported including DIN rail, floor and wall mounting.



Cisco ISR 4000 Series

Modular Integrated Services Routers suitable for deployment in bases that require a provision of application-aware services. In addition to the routing service, these routers can integrate a wide variety of services including security, switching, wireless, unified communication, WAN optimization and service virtualization. Since the control, data, and service resources are isolated at the hardware level, it is possible to deliver application-aware services with high availability even when at high loads.

- **Highlights**
 - Cisco IOS XE Universal Image (IP Base/SEC/UC/AX)
 - Built on a multicore CPU architecture
 - Separates control- and data-plane operations (The default control-plane memory is 4 GB, upgradable to 16 GB, and the default data-plane memory is 2 GB, **Cisco 4431/4451**)
 - Various network services are integrated via Expansion Modules (NIM/SM-X slots)
 - Supports the **Cisco UCS E Series Server**



■ Cisco ISR 4000 Series Bundles Comparison

Bundles	Characters Included in SKU	Bundled Licenses/Modules			
		IOS SEC	IOS UC	IOS APP	PVDM4
Security Bundles	SEC	●	-	-	-
Voice Bundles	V	-	●	-	● ^{*1}
Voice Security Bundles	VSEC	●	●	-	● ^{*1}
Application Experience Bundles	AX	●	-	●	-
Application Experience Voice Bundles	AXV	●	●	●	● ^{*1}

■ Cisco ISR 4000 Series

SKU	Cisco IOS	Throughput		Ports			Expansion Slots			Default Power Supply	Power Redundancy	Rack mount
		Default	Upgradable	GE	SFP	GE/SFP	NIM	SM-X	PVDM			
ISR4221/K9	IP Base	35 Mbps	75 Mbps	1	-	1	2	-	-	External AC	-	1 RU
ISR4221-SEC/K9	IP Base + SEC	35 Mbps	75 Mbps	1	-	1	2	-	-	External AC	-	1 RU
ISR4221-AX/K9	IP Base + SEC + APP	35 Mbps	75 Mbps	1	-	1	2	-	-	External AC	-	1 RU
ISR4321/K9	IP Base	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4321-SEC/K9	IP Base + SEC	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4321-V/K9	IP Base + UC	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4321-VSEC/K9	IP Base + SEC + UC	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4321-AX/K9	IP Base + SEC + APP	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4321-AXV/K9	IP Base + SEC + UC + APP	50 Mbps	100 Mbps	1	-	1	2	-	1	External AC	-	1 RU
ISR4331/K9	IP Base	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4331-SEC/K9	IP Base + SEC	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4331-V/K9	IP Base + UC	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4331-VSEC/K9	IP Base + SEC + UC	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4331-AX/K9	IP Base + SEC + APP	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4331-AXV/K9	IP Base + SEC + UC + APP	100 Mbps	300 Mbps	1	1	1	2	1	1	Internal AC	-	1 RU
ISR4351/K9	IP Base	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4351-SEC/K9	IP Base + SEC	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4351-V/K9	IP Base + UC	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4351-VSEC/K9	IP Base + SEC + UC	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4351-AX/K9	IP Base + SEC + APP	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4351-AXV/K9	IP Base + SEC + UC + APP	200 Mbps	400 Mbps	-	-	3	3	2	1	Internal AC	-	2 RU
ISR4431/K9	IP Base	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4431-SEC/K9	IP Base + SEC	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4431-V/K9	IP Base + UC	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4431-VSEC/K9	IP Base + SEC + UC	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4431-AX/K9	IP Base + SEC + APP	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4431-AXV/K9	IP Base + SEC + UC + APP	500 Mbps	1 Gbps	-	-	4	3	-	1	Internal AC	●	1 RU
ISR4451-X/K9	IP Base	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU
ISR4451-X-SEC/K9	IP Base + SEC	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU
ISR4451-X-V/K9	IP Base + UC	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU
ISR4451-X-VSEC/K9	IP Base + SEC + UC	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU
ISR4451-X-AX/K9	IP Base + SEC + APP	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU
ISR4451-X-AXV/K9	IP Base + SEC + UC + APP	1 Gbps	2 Gbps	-	-	4	3	2	1	Internal AC	●	2 RU

Modules & Accessories

■ Cisco IOS Technology Package Licenses

SKU	Description	Compatible Models						
		800	4221	4321	4331	4351	4431	4451
SL-4220-SEC-K9	Cisco IOS SEC License for Cisco ISR 4221	-	●	-	-	-	-	-
SL-4320-SEC-K9	Cisco IOS SEC License for Cisco ISR 4321	-	-	●	-	-	-	-
SL-4330-SEC-K9	Cisco IOS SEC License for Cisco ISR 4331	-	-	-	●	-	-	-
SL-4350-SEC-K9	Cisco IOS SEC License for Cisco ISR 4351	-	-	-	-	●	-	-
SL-44-SEC-K9	Cisco IOS SEC License for Cisco ISR 4400 Series	-	-	-	-	-	●	●
SL-4320-UC-K9	Cisco IOS UC License for Cisco ISR 4321	-	-	●	-	-	-	-
SL-4330-UC-K9	Cisco IOS UC License for Cisco ISR 4331	-	-	-	●	-	-	-
SL-4350-UC-K9	Cisco IOS UC License for Cisco ISR 4351	-	-	-	-	●	-	-
SL-44-UC-K9	Cisco IOS UC License for Cisco ISR 4400 Series	-	-	-	-	-	●	●
L-SL-4220-APP-K9	Cisco IOS APP License for Cisco ISR 4221	-	●	●	-	-	-	-
L-SL-4320-APP-K9	Cisco IOS APP License for Cisco ISR 4321	-	-	●	-	-	-	-
L-SL-4330-APP-K9	Cisco IOS APP License for Cisco ISR 4331	-	-	-	●	-	-	-
L-SL-4350-APP-K9	Cisco IOS APP License for Cisco ISR 4351	-	-	-	-	●	-	-
L-SL-44-APP-K9	Cisco IOS APP License for Cisco ISR 4400 Series	-	-	-	-	-	●	●

■ Cisco IOS Feature Licenses

SKU	Description	Compatible Models						
		800	4221	4321	4331	4351	4431	4451
FL-4220-HSEC-K9	Cisco IOS HSEC License for Cisco ISR 4221 ^{*1}	-	●	-	-	-	-	-
FL-4320-HSEC-K9	Cisco IOS HSEC License for Cisco ISR 4321 ^{*1}	-	-	●	-	-	-	-
FL-4330-HSEC-K9	Cisco IOS HSEC License for Cisco ISR 4331 ^{*1}	-	-	-	●	-	-	-
FL-4350-HSEC-K9	Cisco IOS HSEC License for Cisco ISR 4351 ^{*1}	-	-	-	-	●	-	-
FL-44-HSEC-K9	Cisco IOS HSEC License for Cisco ISR 4400 Series ^{*1}	-	-	-	-	-	●	●
SW-CCME-UL-ESS	Cisco Unified CME Phone License - Essential	-	-	●	●	●	●	●
SW-CCME-UL-BASIC	Cisco Unified CME Phone License - Basic	-	-	●	●	●	●	●
SW-CCME-UL-ENH	Cisco Unified CME Phone License - Enhanced	-	-	●	●	●	●	●
L-FL-CME-SRST-5	Cisco Unified CME or SRST 5 License ^{*2 *3}	●	-	●	●	●	●	●
L-FL-CME-SRST-25	Cisco Unified CME or SRST 25 License ^{*2}	-	-	●	●	●	●	●
L-FL-CME-SRST-100	Cisco Unified CME or SRST 100 License ^{*2}	-	-	-	●	●	●	●
FL-CUBEE-5-RED	Cisco Unified BEe 5 Redundant Configuration License ^{*2}	-	-	●	●	●	●	●
FL-CUBEE-25-RED	Cisco Unified BEe 25 Redundant Configuration License ^{*2}	-	-	●	●	●	●	●
FL-CUBEE-100-RED	Cisco Unified BEe 100 Redundant Configuration License ^{*2}	-	-	●	●	●	●	●
L-FL-C800-APP	Cisco IOS APP License for Cisco ISR 800 Series ^{*5}	●	-	-	-	-	-	-
SL-200-AKC	Cisco IWAN with Akamai Connect 200 Connections License ^{*4}	-	●	●	●	-	-	-
SL-750-AKC	Cisco IWAN with Akamai Connect 200 Connections License ^{*4}	-	-	-	●	●	●	-
SL-1300-AKC	Cisco IWAN with Akamai Connect 1,300 Connections License ^{*4}	-	-	-	●	●	●	●
SL-2500-AKC	Cisco IWAN with Akamai Connect 2,500 Connections License ^{*4}	-	-	-	●	●	-	●
SL-6K-AKC	Cisco IWAN with Akamai Connect 6,000 Connections License ^{*4}	-	-	-	●	●	-	●
FL-4220-PERF-K9	Cisco IOS Performance-on-Demand License for Cisco ISR 4221	-	●	-	-	-	-	-
FL-4320-PERF-K9	Cisco IOS Performance-on-Demand License for Cisco ISR 4321	-	-	●	-	-	-	-
FL-4330-PERF-K9	Cisco IOS Performance-on-Demand License for Cisco ISR 4331	-	-	-	●	-	-	-
FL-4350-PERF-K9	Cisco IOS Performance-on-Demand License for Cisco ISR 4351	-	-	-	-	●	-	-
FL-44-PERF-K9	Cisco IOS Performance-on-Demand License for Cisco ISR 4400 Series	-	-	-	-	-	●	●

^{*1} Cisco IOS SEC License is required. ^{*2} Cisco IOS UC License is required. ^{*3} Cisco ISR 800 Series only supports Cisco 881-V. ^{*4} Cisco IOS APP License is required. ^{*5} Cisco ISR 800 Series only supports Cisco 891F/892FSP/897VA/899G.

Cisco Intelligent WAN (IWAN) with Akamai Connect

Cisco Intelligent WAN (IWAN) with Akamai Connect is a suite of integrated WAN optimization, application acceleration, and intelligent caching features in Cisco ISRs running Application Experience services. The solution extends the well-known Akamai Intelligent Platform with HTTP caching across the last mile into the branch office, turbo charging the application optimization features of the Cisco IWAN. Akamai Connect caching integrates with Cisco IWAN features such as Application Visibility and Control (AVC), Cisco Performance Routing (PfR), and Cisco Wide Area Application Services (WAAS). It is available across the Cisco ISR portfolio and Cisco WAAS Appliances, allowing you to deploy full-service branch-office operations. Users can access bandwidth-intensive applications instantly, over any network, regardless of where the application is hosted — data center, private cloud, public cloud, or the Internet.

■ Mobile Assisted Selling Application Benchmark Results in Seconds (s)

	Without Akamai Connect	With Akamai Connect	
		1st Hit	2nd Hit
ERP App	57 s	18 s	2 s
Repair App	70 s	28 s	< 1 s
Catalog App	28 s	13 s	< 1 s

■ Training/Digital Signage Application Benchmark Results in Pixels (p) and Seconds (s)

	Without Akamai Connect	With Akamai Connect
	Default Quality	144 p
Time to Load (720 p HD)	14 s	Instant

Cisco Layer 2/3 EtherSwitch Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-ES2-4	EtherSwitch Module (L2, 4-port GE)	NIM	●	●	●	●	●	●
NIM-ES2-8	EtherSwitch Module (L2, 8-port GE)	NIM	●	●	●	●	●	●
NIM-ES2-8-P	EtherSwitch Module (L2, 8-port GE/PoE+)	NIM	-	●	●	●	●	●
SM-X-ES3-16-P	SM-X EtherSwitch Module (L2/L3, 16-port GE/PoE+)	SM-X	-	-	●	●	-	●
SM-X-ES3-24-P	SM-X EtherSwitch Module (L2/L3, 24-port GE/PoE+)	SM-X	-	-	●	●	-	●
SM-X-ES3D-48-P	SM-X EtherSwitch Module (L2/L3, 48-port GE/PoE+)	SM-X	-	-	-	●	-	●

Cisco Gigabit Ethernet WAN Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-1GE-CU-SFP	GE/SFP Module (1-port)	NIM	●	●	●	●	●	●
NIM-2GE-CU-SFP	GE/SFP Module (2-port)	NIM	-	●	●	●	●	●
SM-X-6X1G	GE/SFP Service Module (6-port)	SM-X	-	-	●	●	-	●
SM-X-4X1G-1X10G	GE/SFP (4-port) or SFP+ (1-port) Service Module	SM-X	-	-	●	●	-	●

Cisco Serial WAN Interface Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-1T	Serial WAN Module (1-port)	NIM	●	●	●	●	●	●
NIM-2T	Serial WAN Module (2-port)	NIM	●	●	●	●	●	●
NIM-4T	Serial WAN Module (4-port)	NIM	-	●	●	●	●	●
SM-X-1T3/E3	T3/E3 Module (1 port)	SM-X	-	-	●	●	-	●

Cisco Async WAN Interface Modules for Cisco ISR 4000 Series NEW

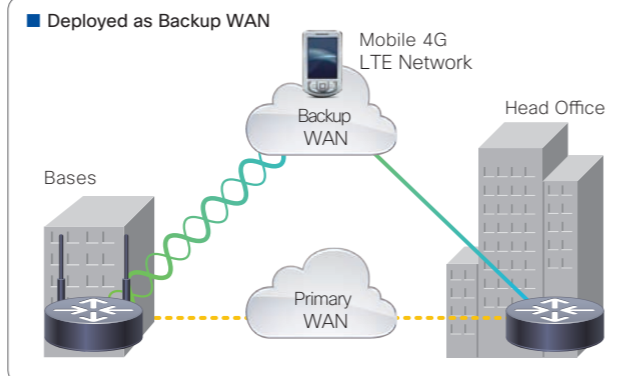
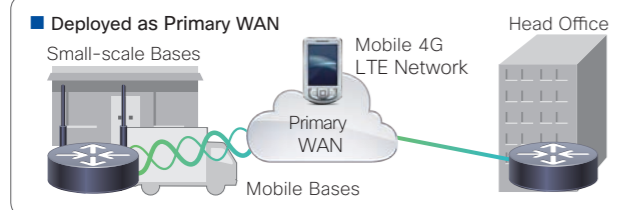
SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-16A	Asynchronous Module (16-port)	NIM	●	●	●	●	●	●
NIM-24A	Asynchronous Module (24-port)	NIM	●	●	●	●	●	●

Cisco Multimode VDSL2 and ADSL2/2+ Network Interface Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-VAB-A	Multi Mode VDSL2/ADSL2/2+ (Annex A)	NIM	●	●	●	●	●	●
NIM-VA-B	Multi Mode VDSL2/ADSL2/2+ (Annex B)	NIM	●	●	●	●	●	●
NIM-VAB-M	Multi Mode VDSL2/ADSL2/2+ (Annex M)	NIM	●	●	●	●	●	●

4G LTE Wireless WAN Solutions

Mobile 4G LTE networks can be deployed rapidly as primary or backup WAN by incorporating the **4G LTE Wireless WAN Module** on **Cisco ISR 4000 Series**. Bandwidth can be utilized even more efficiently by using the module in combination with **Cisco Wide Area Application Services (WAAS)**.


Cisco 4G LTE 2.0 Network Interface Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-4G-LTE-GA	4G LTE Module for Global	NIM	●	●	●	●	●	●
NIM-4G-LTE-NA	4G LTE Module for North America	NIM	●	●	●	●	●	●
NIM-4G-LTE-ST	4G LTE Module for Sprint	NIM	●	●	●	●	●	●
NIM-4G-LTE-VZ	4G LTE Module for Verizon	NIM	●	●	●	●	●	●
NIM-4G-LTE-LA NEW	4G LTE Module for Asia Pacific, Australia and Latam	NIM	●	●	●	●	●	●
NIM-LTEA-EA NEW	LTE Advanced Module for Europe and North America	NIM	●	●	●	●	●	●
NIM-LTEA-LA NEW	LTE Advanced Module for Asia Pacific, Australia and Latam	NIM	●	●	●	●	●	●

Cisco T1/E1 Voice and WAN Network Interface Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-1MFT-T1/E1	Voice/WAN Module (1-port T1/E1)	NIM	●	●	●	●	●	●
NIM-2MFT-T1/E1	Voice/WAN Module (2-port T1/E1)	NIM	●	●	●	●	●	●
NIM-4MFT-T1/E1	Voice/WAN Module (4-port T1/E1)	NIM	-	●	●	●	●	●
NIM-8MFT-T1/E1	Voice/WAN Module (8-port T1/E1)	NIM	-	●	●	●	●	●
NIM-1CE1T1-PRI	Voice/WAN Module (1-port T1/E1/G.703)	NIM	-	●	●	●	●	●
NIM-2CE1T1-PRI	Voice/WAN Module (2-port T1/E1/G.703)	NIM	-	●	●	●	●	●
NIM-8CE1T1-PRI	Voice/WAN Module (8-port T1/E1/G.703)	NIM	-	●	●	●	●	●

Cisco Analog Voice Network Interface Modules for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
NIM-2FXS	Voice Module (2-port FXS)	NIM	-	●	●	●	●	●
NIM-4FXS	Voice Module (4-port FXS)	NIM	-	●	●	●	●	●
NIM-2FXO	Voice Module (2-port FXO)	NIM	-	●	●	●	●	●
NIM-4FXO	Voice Module (4-port FXO)	NIM	-	●	●	●	●	●
NIM-2FXS/4FXO	Voice Module (2-port FXS and 4-port FXO)	NIM	-	●	●	●	●	●
NIM-4E/M	Voice Module (4-port E/M)	NIM	-	●	●	●	●	●
NIM-2BRI-NT/TE	Voice Module (2-port BRI)	NIM	-	●	●	●	●	●
NIM-4BRI-NT/TE	Voice Module (4-port BRI)	NIM	-	●	●	●	●	●

Cisco Packet Voice Digital Signal Processor Modules (PVDMs) for Cisco ISR 4000 Series

SKU	Description	Slot	Compatible Models					
			4221	4321	4331	4351	4431	4451
PVDM4-32	High-density Voice DSP Module (16-channel)	PVDM4 ^{*1}	-	●	●	●	●	●
PVDM4-64	High-density Voice DSP Module (32-channel)	PVDM4 ^{*1}	-	●	●	●	●	●
PVDM4-128	High-density Voice DSP Module (64-channel)	PVDM4 ^{*1}	-	●	●	●	●	●
PVDM4-256	High-density Voice DSP Module (128-channel)	PVDM4 ^{*1}	-	●	●	●	●	●
SM-X-PVDM-500	High-density Voice DSP Module (768-channel)	SM-X	-	-	●	●	-	●
SM-X-PVDM-1000	High-density Voice DSP Module (1,024-channel)	SM-X	-	-	●	●	-	●
SM-X-PVDM-2000	High-density Voice DSP Module (2,048-channel)	SM-X	-	-	-	● ^{*2}	-	●
SM-X-PVDM-3000	High-density Voice DSP Module (3,080-channel)	SM-X	-	-	-	● ^{*2}	-	●

Cisco UCS E Series Servers for Cisco ISR 4000 Series

SKU	CPU Cores	Memory		Internal Drive Slots	RAID	Slot	Compatible Models						
		Default	Maximum				4221	4321	4331	4351	4431	4451	
UCS-EN140N-M2/K9	4	8 GB	8 GB	1	-	NIM	-	●	●	●	●	●	●
UCS-EN120S-M2/K9	2	4 GB	16 GB	2	0/1	SM-X	-	-	●	●	-	●	●
UCS-E140S-M2/K9	4	8 GB	16 GB	2	0/1	SM-X	-	-	●	●	-	●	●
UCS-E160S-M3/K9 NEW	6	8 GB	32 GB	2	0/1	SM-X	-	-	●	●	-	●	●
UCS-E160D-M2/K9	6	8 GB	96 GB	3	0/1/5	SM-X	-	-	-	●	-	●	●
UCS-E180D-M2/K9	8	8 GB	96 GB	3	0/1/5	SM-X	-	-	-	●	-	●	●

^{*1} Also supported by a PVDM4 slot on Voice NIMs. ^{*2} Supports up to 1,024 channels.

Collaborate



Collaboration



Why Cisco?

The New Collaborative Environment

Opportunity comes from the combination of technology and people. The collaborative workspace environment gives people the flexibility to be where they need to be to do the best work they can. Cisco uses an architectural approach, integrating mobility, video, and cloud to bring people together **anytime, anywhere, on any device**. Connect employees, customers, and suppliers to make decisions, resolve customer issues, or address supply-chain challenges. The architecture cost-effectively supports scalability, security, and accessibility. The Cisco collaboration strategy and architecture account for not only the technology, but also for what it means to your processes and culture.

Implement collaboration solutions to:

- Flatten organizational hierarchy and better communicate with all levels of the organization
- Elevate and personalize communications to improve the quality and speed of decisions
- Save time, simplify workflows, and increase workforce interaction and productivity
- Build trust and understanding across time zones and within teams through video communications
- Improve customer responsiveness by facilitating faster access to experts and information

In addition to productivity improvements, these solutions can help you reduce travel, real-estate costs, and greenhouse gas emissions by supporting virtual meetings and telecommuting.

Reimagine Collaboration: In Every Room, On Every Desk and In Every Pocket

In Every Room



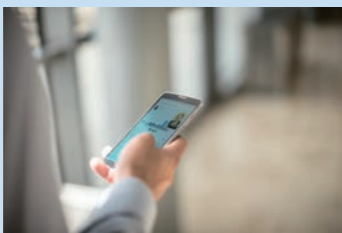
Cisco TelePresence SX Series

On Every Desk



Cisco IP Phones

In Every Pocket



Cisco Jabber



Cisco WebEx

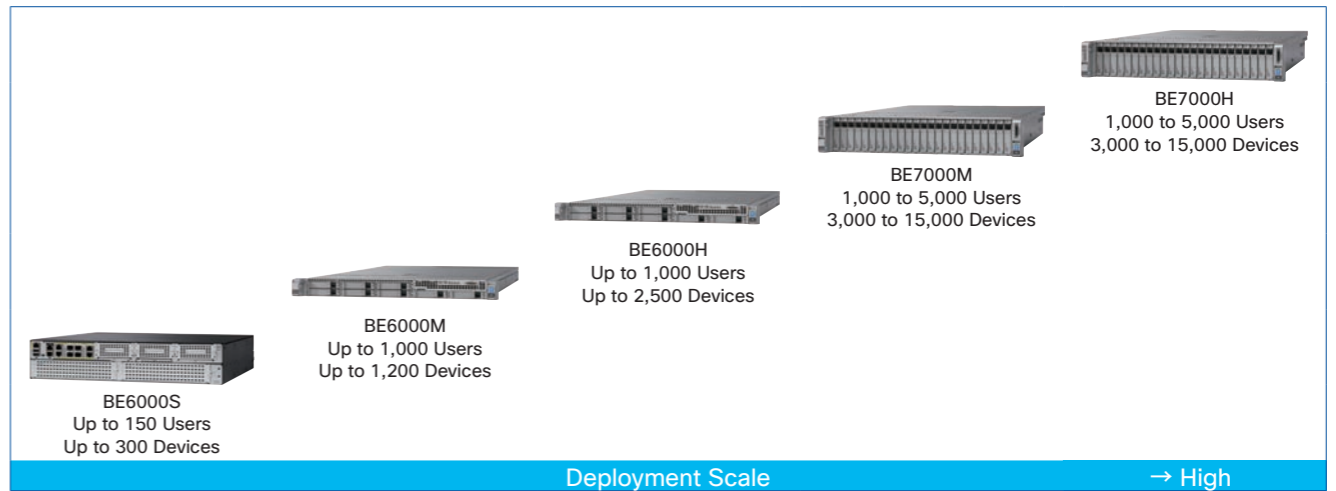


Cisco Spark

Cisco Business Edition 6000 (BE6000)	Purpose-built collaboration solutions for small-scale and medium-scale deployments. Support for multiple collaboration applications on single, centrally-managed platform options.		P49
Cisco IP Phones	VoIP and Video Phones to Meet Your Business Needs. Integrated and affordable, with capabilities beyond traditional phones and video systems.		P50
Cisco TelePresence SX Series	Transforms flat-panel video displays into high-definition telepresence systems. Bring teams together with video for collaboration experiences delivered at greater value.		P51
Cisco Jabber	Streamline communications and enhance productivity by integrating presence; instant messaging (IM); desktop sharing; and audio, video, and web conferencing into a single client.		P52
Cisco WebEx	Meet with anyone online to present, share, and collaborate. Accelerate decisions, keep projects on track and exchange ideas.		P54
Cisco Spark	Streamline communications and enhance mobile productivity with collaboration on any device. Bring your teams together in a place that makes it easy to keep people and work connected.		P55

Call Control

Cisco Business Edition 6000 (BE6000)



Cisco Business Edition 6000 (BE6000)

The **Cisco Business Edition 6000 (BE6000)** gives employees a full range of collaboration tools: **premium voice, video, messaging, instant messaging and presence, conferencing, video conferencing, contact center services, mobility capabilities**, and more. With these tools your small or midsize business can boost productivity among employees and strengthen relationships with customers and business partners. And they can help you speed decision making and reduce time to market.

Cisco BE6000 is purpose-built for companies with **25 to 1,000 employees**. The solutions consist of one or more modular, stackable servers so you can easily add more capacity to support additional users. And because they use virtualization technology, they pack a lot of collaboration tools into a small form factor.

Cisco BE6000 is delivered with a suite of preloaded, ready-to-activate unified communications and collaboration applications. And as your business needs grow, you can easily "turn on" the additional application options supported, including **contact center, video conferencing, Cisco Spark Hybrid Services**, and more.

Platform Model Options

Cisco BE6000 platforms are built on virtualized **Cisco Unified Computing System (UCS)** products, which are designed for performance and density over a wide range of company sizes and business workloads. There are **three** models:

BE6000S

Supports **five fixed collaboration applications** in a single integrated router/gateway/virtualized blade server platform; maximum capacity of **150 users** and **300 devices**. Ideal for small-scale "office in a box" collaboration deployments.

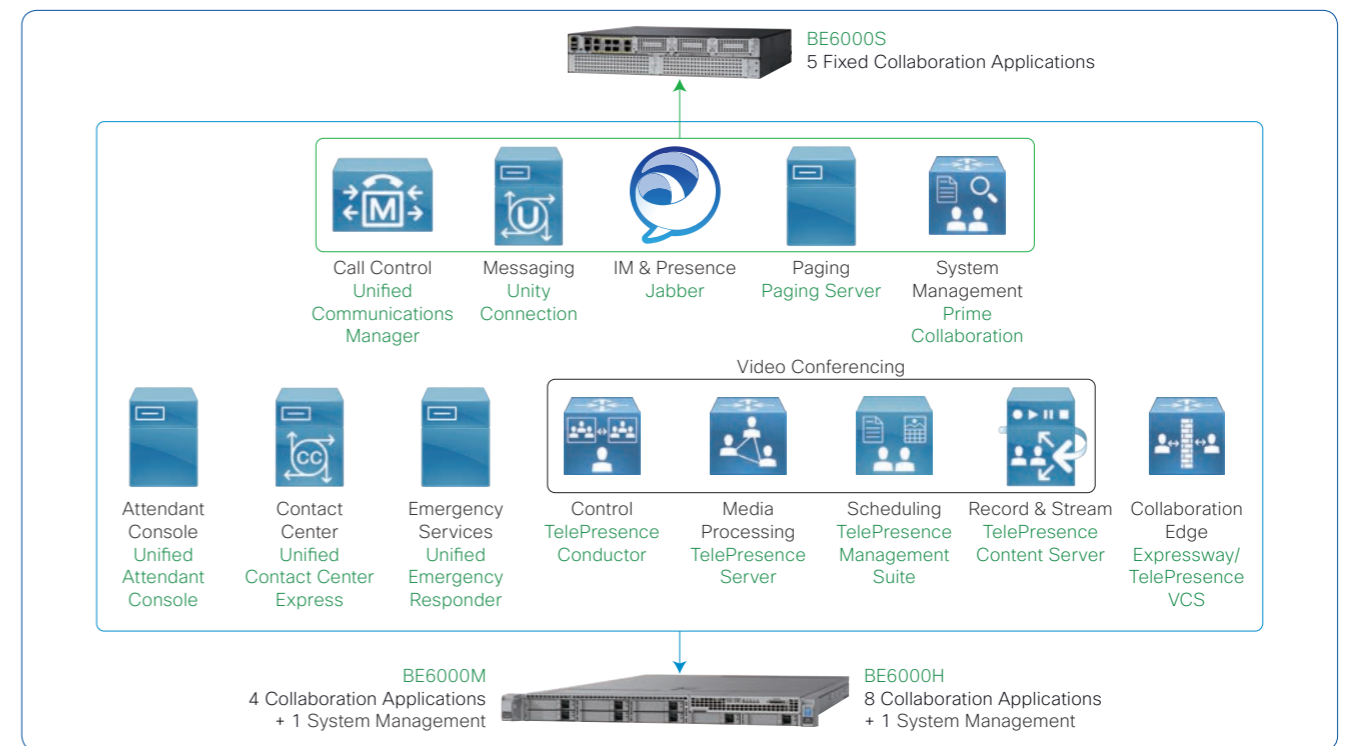
BE6000M

Supports **four collaboration application** options plus one for provisioning in a single virtualized server platform; maximum capacity of **1,000 users**, **1,200 devices**, and **100 contact center agents**. Ideal for medium-scale end-to-end collaboration deployments.

BE6000H

Supports **eight collaboration application** options plus one for provisioning in a single virtualized server platform; maximum capacity of **1,000 users**, **2,500 devices**, and **100 contact center agents**. Ideal for medium- to large-scale end-to-end collaboration deployments.

The servers are delivered **ready for use**, with a preinstalled virtualization hypervisor and preloaded software, ready to install.



Collaboration Endpoints

Cisco IP Phones

Leading the Way in Collaboration

The **Cisco IP Phones** empower your business with a new collaboration experience that connects the right people with the right information at the right time, so you can accelerate team performance and maximize your business results. Effective collaborative experiences among teams, communities, and individuals can also help you:

- Unlock the value of your company's information with relevant, contextual collaboration, whether at the desktop or if mobile within a campus.
- Harness the power of your busy professional staff by enabling them to collaborate confidently with customers, partners, colleagues, and suppliers.
- Maximize interaction with subject-matter experts (SMEs) by taking advantage of pervasive presence and conferencing capabilities.
- Transform business processes and reduce costs with interactive high-quality, businessgrade high-definition video communications.
- Get access to a broad suite of optional thirdparty endpoint applications and accessories to innovate new workflows.



Cisco leads the unified communications and collaboration market with:

- **More unified communications installations:** Cisco has more than 100,000 unified communications customers worldwide.
- **More IP endpoints:** Cisco has shipped 95 million IP phones since its entry into VoIP communications.
- **Competitive advantage:** More than 95 percent of Fortune 500 companies now use Cisco Collaboration Solutions to build competitive advantage.

In today's 24x7 global economy, your business must meet the needs of a wide range of users with different communications styles and distinct workspaces. Workers are more geographically dispersed spanning different time zones. Use of conferencing (audio and video) is increasing exponentially in order to connect workers who often work in teams. Yet, the internet is full of media reports that postulate that the death of the desk phone has arrived.

Cisco SPA300 Series IP Phones

Models	Display	Touch Screen	HD Video (720p)	Line Keys	Wideband Audio	Hands-free	Ethernet Switch	PoE Class	Wi-Fi	Signaling Protocol	Supported Cisco Call Control
SPA301	-	-	-	-	●	-	1 x FE	-	-	SIP/SPCP	-
SPA303	128 x 63 Monochrome	-	-	3	●	●	2 x FE	-	-	SIP/SPCP	-

Cisco SPA500 Series IP Phones

Models	Display	Touch Screen	HD Video (720p)	Line Keys	Wideband Audio	Hands-free	Ethernet Switch	PoE Class	Wi-Fi	Signaling Protocol	Supported Cisco Call Control
SPA501G	-	-	-	8	●	●	2 x FE	2	-	SIP/SPCP	-
SPA502G	128 x 64 Monochrome Backlight	-	-	-	●	●	2 x FE	2	-	SIP/SPCP	-
SPA504G	128 x 64 Monochrome Backlight	-	-	4	●	●	2 x FE	2	-	SIP/SPCP	-
SPA508G	128 x 64 Monochrome Backlight	-	-	8	●	●	2 x FE	2	-	SIP/SPCP	-
SPA509G	128 x 64 Monochrome Backlight	-	-	12	●	●	2 x FE	2	-	SIP/SPCP	-
SPA512G	128 x 64 Monochrome Backlight	-	-	-	●	●	2 x GE	2	-	SIP/SPCP	-
SPA514G	128 x 64 Monochrome Backlight	-	-	4	●	●	2 x GE	2	-	SIP/SPCP	-
SPA525G2	320 x 240 Color	-	-	5	●	●	2 x FE	2	11g	SIP/SPCP	-

Cisco IP Phone 7800 Series

Models	Display	Touch Screen	HD Video (720p)	Line Keys	Wideband Audio	Hands-free	Ethernet Switch	PoE Class	Wi-Fi	Signaling Protocol	Supported Cisco Call Control
7811	384 x 106 Monochrome	-	-	-	-*1	●	2 x FE	1	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 9.1.2 ~ Spark 11.0 ~
7821	396 x 162 Monochrome White Backlight	-	-	2	●	●	2 x FE	1	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 9.1.2 ~ Spark 11.0 ~
7841	396 x 162 Monochrome White Backlight	-	-	4	●	●	2 x GE	1	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 9.1.2 ~ Spark 11.0 ~
7861	396 x 162 Monochrome White Backlight	-	-	16	●	●	2 x FE	1	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 9.1.2 ~ Spark 11.0 ~

Cisco IP Phone 7900 Series

Models	Display	Touch Screen	HD Video (720p)	Line Keys	Wideband Audio	Hands-free	Ethernet Switch	PoE Class	Wi-Fi	Signaling Protocol	Supported Cisco Call Control
7945G	5" (320 x 240) 16-bit Color	-	-	2	●	●	2 x GE	3	-	SCCP/SIP	Unified CME 4.1 ~ Unified CM 4.1 ~
7965G	5" (320 x 240) 16-bit Color	-	-	6	●	●	2 x GE	3	-	SCCP/SIP	Unified CME 4.1 ~ Unified CM 4.1 ~
7975G	5" (320 x 240) 16-bit Color	●	-	8	●	●	2 x GE	3	-	SCCP/SIP	Unified CME 4.1 ~ Unified CM 4.1 ~

Cisco IP Phone 8800 Series

Models	Display	Touch Screen	HD Video (720p)	Line Keys	Wideband Audio	Hands-free	Ethernet Ports	PoE Class	Wi-Fi	Signaling Protocol	Supported Cisco Call Control
8811	5" (800 x 480) Monochrome White Backlight	-	-	5	●	●	2 x GE	2	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8841	5" (800 x 480) WVGA Color	-	-	5	●	●	2 x GE	2	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8845	5" (800 x 480) WVGA Color	-	●	5	●	●	2 x GE	2	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8851	5" (800 x 480) WVGA Color	-	-	5	●	●	2 x GE	3	-	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8861	5" (800 x 480) WVGA Color	-	-	5	●	●	2 x GE	4	●	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8865	5" (800 x 480) WVGA Color	-	●	5	●	●	2 x GE	4	●	SIP	BE 8.6.2 ~ Unified CM 8.5.1 ~ HCS 8.6.2 ~ Spark 11.0 ~
8821	2.4" (240 x 320) Color	-	-	6	●	●	-	-	-	SIP	Unified CME 10.0 ~ Unified CM 9.1.2 ~ HCS 9.0 ~
8821-EX	2.4" (240 x 320) Color	-	-	6	●	●	-	-	-	SIP	Unified CME 10.0 ~ Unified CM 9.1.2 ~ HCS 9.0 ~
8831 Conference Station	396 x 162 Monochrome White Backlight	-	-	1	●	●	1 x GE	3	-	SIP	Unified CME 10.0 ~ BE 8.6.5 ~ Unified CM 7.1.5 ~ HCS 8.6.2 ~

*1 Wideband audio available with purchase of wideband handset.

Cisco TelePresence SX Series



■ Cisco TelePresence SX10 Quick Set

The **Cisco TelePresence SX10 Quick Set** is an all-in-one unit designed to video-enable your small collaboration spaces, offering great affordability for small-to-medium businesses just starting out with telepresence. It offers:

- Business-quality video, priced to scale at roughly the cost of a PC
- Camera and codec in a single compact device that sits on top of your standard flat-panel display
- Support for Cisco Intelligent Proximity for content sharing to mobile devices and wireless sharing from Macs and PCs
- Simple, elegant cabling that connects through a single-cable system for both power and Ethernet connectivity
- A wide-angle field of view that provides exceptional visibility, even in small spaces
- Supports for cloud registration to **Cisco Spark Services** for even faster and more cost effective deployment

■ Cisco TelePresence SX20 Quick Set

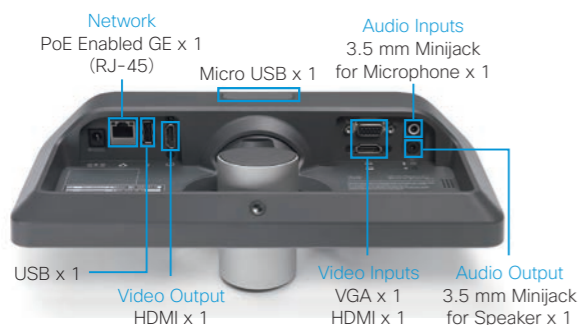
The **Cisco TelePresence SX20 Quick Set** can transform any flat panel display into a sleek and powerful video conferencing system. It is designed to deliver high definition video and multiparty conferencing with the flexibility to accommodate various room size and configurations - all at a value price. It offers:

- Embedded Cisco MultiSite technology for adding three more participants to a call
- Support for Cisco Intelligent Proximity for content sharing to mobile devices and wireless sharing from Macs and PCs
- Support for switched conferencing for enhanced layouts and video on both screens of dual-screen endpoints
- Simple, intuitive connections for simple setup
- Supports for cloud registration to **Cisco Spark Services** for even faster and more cost effective deployment

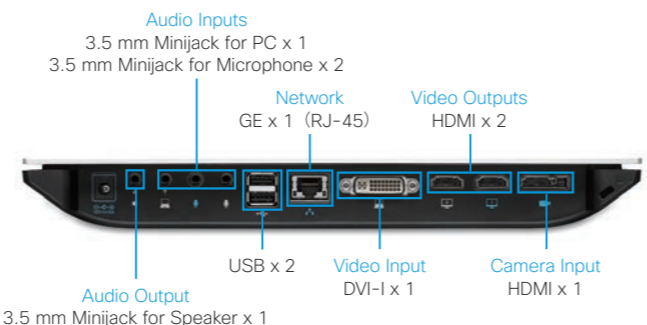
■ Cisco TelePresence SX Series

Models	Video Frame Rate	Supported PC Resolutions (Content Sharing)	Camera	Bandwidth Consumption	Video Standards	Audio Standards	Multipoint Support	Mount	Optional Hardware Components
SX10 Quick Set	Up to 30 fps	SVGA (800 x 600) up to 1080p (1920 x 1080) at 30fps	Integrated HD 5x Zoom	Up to 3 Mbps	H.263 H.263+ H.264	G.711 G.722 G.722.1 G.729ab AAC-LD OPUS	-	Screen or Wall	TelePresence Touch 10 Scareen Mount Kit Additional Microphone
SX20 Quick Set	Up to 60 fps	SVGA (800 x 600) up to 1080p (1920 x 1080) at 5fps	PrecisionHD 4x or 12x Optical Zoom	Up to 6 Mbps	H.263 H.263+ H.264	G.711 G.722 G.722.1 G.728 G.729ab AAC-LD OPUS	4	Wall	TelePresence Touch 10 Wall Mount Kit Additional Microphone

■ Connectors: Cisco TelePresence SX10 Quick Set



■ Connectors: Cisco TelePresence SX20 Quick Set



Cisco Jabber

■ All-in-One UC Application for Multi-Device User Experience



■ Simplify Communications and Enhance Productivity

The **Cisco Jabber** is the unified communications applications which improve your productivity, anytime, from anywhere, on any device. You can quickly and easily find people, see if and how they are available (on which application or device). Collaborate using instant messaging (IM), voice, high-definition video, voice messaging, desktop sharing, and conferencing. Jabber delivers a collaborative experience from your preferred device that boosts your productivity, whether you are mobile or at your desk.

Cisco Jabber takes advantage of intelligence in Cisco networks and Cisco Unified Communications Manager to deliver highly secure, reliable, and high quality communications. Jabber puts IT in control with deployment flexibility and investment protection. It delivers a consistent experience across on-premises and cloud-based deployments, and uses industry standards to help ensure interoperability across Cisco and third-party solutions.

■ Instantly Interact with IM and Presence

Reduce delays with real-time presence information and instant messaging. View users' availability and chat with individuals or groups, within and outside your organization.

■ Enjoy Business-class IP Voice and Video Telephony

Cisco Jabber is a soft phone with HD video and desktop sharing capabilities. Powered by Cisco Unified Communications Manager call-control, it delivers secure, reliable communications.

■ Get a Complete Collaboration Experience for Your Mobile Devices

Be more productive from any location with Cisco Jabber on your mobile devices. Access presence, instant messaging (IM), voice, video, voice messaging, and conferencing, from anywhere.

■ Communicate from Microsoft Office

Cisco Jabber is integrated with Microsoft Office. See a user's availability and click to initiate communications such as chat, voice or video calls, or multi-party conferences.

■ Communicate from Within Web Applications

The Jabber Software Development Kit (SDK) lets you experience rich communications, including HD video, from within web-based business. Simplify workflows and increase productivity.

Conferencing

Cisco WebEx

Use People-Centric Web Conferencing Collaboration
Take advantage of industry-leading web conferencing capabilities to facilitate compelling, productive team meetings. With the **Cisco WebEx** online collaboration solutions, organizations of any size can:

- Promote collaboration with anyone globally, anywhere, anytime, on any device
- Increase productivity with an engaging, interactive web conferencing meeting experience
- Improve day-to-day efficiency and streamline meeting activities
- Save time and money by reducing the need to travel

Reduce Costs, Optimize Investments
Cisco WebEx web conferencing solutions help reduce costs and optimize IT resources. Delivered through the Cisco WebEx Cloud, these solutions are easy to implement and scale throughout your organization. Cisco WebEx solutions:

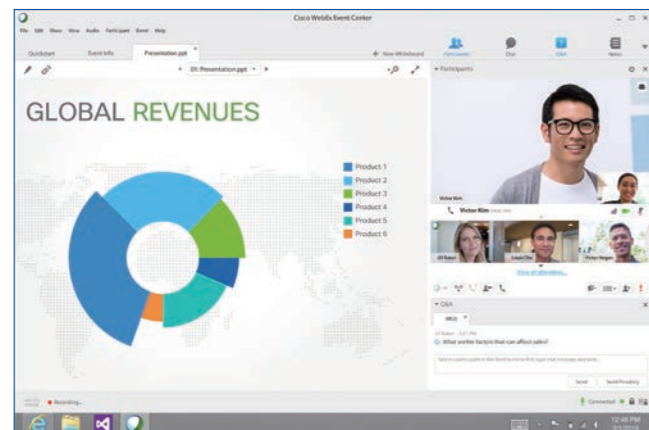
- Require no large, up-front investment, and offer a predictable cost and licensing model
- Offer quick global deployment and easy adoption for users inside or outside firewalls
- Help you cut costs on hardware, software, and maintenance
- Give you the time to focus on strategic business projects instead of conferencing operations
- Integrate web conferencing with existing Cisco investments such as Cisco Jabber, Cisco Spark, and Cisco TelePresence solutions



Cisco WebEx Meeting Center

Meet with Anyone, Anywhere, on Any Device
Be more productive, collaborative, and get more done faster using the **Cisco WebEx Meeting Center**, the proven, industry leader in web and video conferencing. Hold regular meetings with anyone – regardless of location. Manage

- Features**
- Document, Application, and Screen Share**
Share content or your entire screen with remote attendees in real time. Pass control to attendees so they can share content, or annotate yours.



- Meeting Recording, Editing, and Playback**
Record meetings for future reference, training, or demonstrations.
- Active Speaker**
Focus on who's talking with active speaker technology, which automatically displays the current speaker's video in the active speaker window.
- Call-Me**
Have your meeting call you. Simply enter your phone number when the meeting begins and the meeting calls you – no dialing, no passcodes.
- Personal Rooms**
Meet even faster in your own permanent, personalized video conferencing space. Schedule ahead or leave your door open and let people drop in.
- Integrated Video**
View videos from up to seven attendees. Or select full-screen mode to view the active speaker in the main video panel, with other participants' video displayed as thumbnails. And for the most detailed video view, select the expanded fullscreen option to view the active speaker in true high-definition, 720p display resolution.

projects, host sales meetings, and make faster, more informed decisions by keeping everyone on the same page with meetings that allow everyone to see, hear, and view the same information at the same time. And host engaging and creative sessions with customers, colleagues, or internal teams.

- Integrated Audio**
Offer an interactive meeting experience with Cisco WebEx integrated audio or a third-party audio options. Choose toll or toll-free, or call-in or call-back. Or give attendees the option to connect using voice over IP (VoIP), or your computer's built-in audio. Wideband audio support using VoIP provides outstanding audio quality – even over low bandwidth networks.
- One-Click Meeting Access**
Start a meeting and invite attendees instantly from your desktop, taskbar, or favorite applications.
- Easy Meeting Invites**
Send invitations and reminders using an automated phone call, text message, email from your local client, or instant messaging.
- Enterprise Integration**
Use single sign-on to access WebEx Meeting Center. Take advantage of integration and interoperability with Cisco collaboration products such as Cisco Jabber, Cisco Spark, and Cisco TelePresence.
- Cross-Platform Support**
Meet with anyone on all common operating system platforms. These can include Windows, Mac, and Linux.
- Mobile Support**
Enjoy a rich meeting experience with audio, video, and content sharing across Android, iPhone and iPad, BlackBerry, and Windows Phone devices.

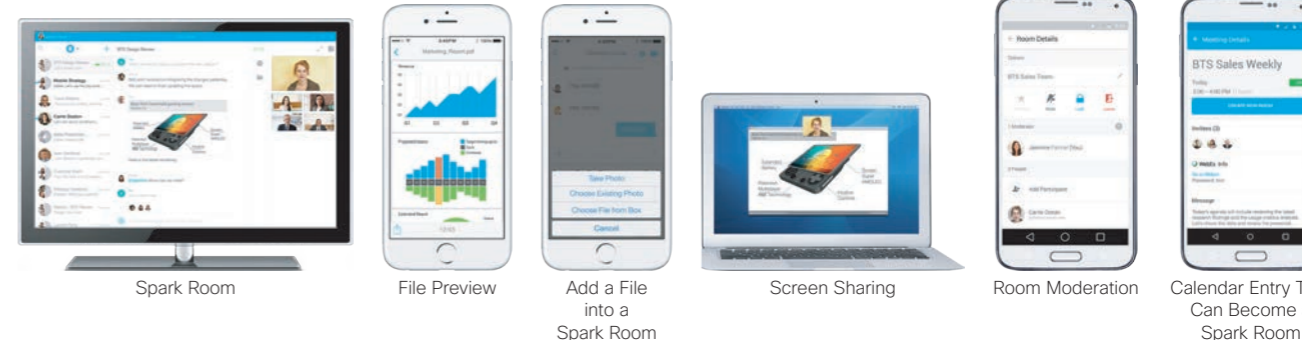
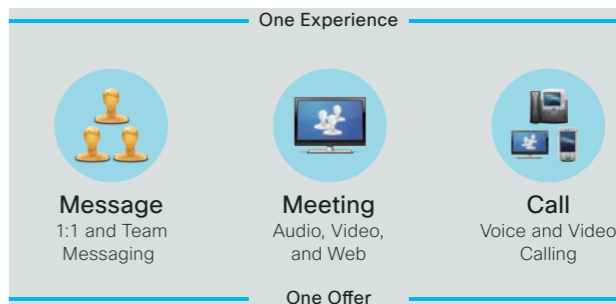


Cisco Spark

A Cloud-Based Business Collaboration Service
Communication is about more than simply being able to dial or send a message to employees or partners. It's about being able to message, meet, and call instantly in a way that strengthens relationships and increases productivity). And now communication needs to be agile. Mobile. Collaborative. All thanks to mobile devices and evolving innovations in infrastructure and applications for voice, video, messaging, and content sharing. The **Cisco Spark** service makes instant communications and live meetings possible through a deeply integrated set of industry-leading communications tools for an unmatched collaboration experience—that only the Cisco cloud can deliver.

Message. Meet. Call.
With the Cisco Spark solution, you can:

- Message:** Business messaging lets you prepare, share, and iterate on content. Enjoy 1:1 and team messaging in virtual rooms with persistent content and context for team interactions. Cisco Spark services break down communication barriers and make it incredibly simple to work with anyone.
- Meet:** Connect teams and meet customers easily with the added benefits of messaging and content sharing before, during, and after the meeting. It's easy to schedule or join a meeting at a main office, a branch office, at home, on the road, or from a room-based video system. Every meeting is video-centric. Users shouldn't have to think about what type of conferencing they need before scheduling; after all, it's just a meeting.
- Call:** The service enables voice and video communications via mobile, desktop, and room-based devices. Simply connect your existing PSTN1 services to Spark to enjoy one-touch directory dialing and join meetings from anywhere on any device. Mobile users get features such as single number reach, single voicemail service, video services, and the ability to seamlessly move between devices during a call.



Cisco Spark Subscriptions*1

	Free	Business Messaging	Business Messaging and Basic Meetings	Business Messaging and Advanced Meetings
Messaging	●	●	●	●
File Sharing	●	●	●	●
1:1 Video Calling with Screen Sharing	●	●	●	●
Meetings with Screen Sharing in Rooms with 3 Participants	●	●	●	●
Mobile Calendar and Contacts Integration	●	●	●	●
Online Self-Service Support	●	●	●	●
End-to-End Content Encryption and In-Transit and Media Encryption	●	●	●	●
Room Moderation	-	●	●	●
External Participants Indication	-	●	●	●
Directory Sync	-	●	●	●
Single Sign-On	-	●	●	●
Live Support	-	●	●	●
Meetings with Screen Sharing in Rooms with up to 25 Participants	-	-	●	●
Entitlement to WebEx Meeting Center or Enterprise Edition	-	-	-	●

*1 The free version of Cisco Spark is available in most Asia-Pacific countries except New Zealand and Vietnam. The other versions of Cisco Spark are available in Australia, Hong Kong, India, Indonesia, Japan, Korea, Singapore, Thailand. Contact your Cisco sales representative for the latest orderability in your country.



Positioning Map of Cisco UCS C-Series Rack Servers

■ Cisco Unified Computing System (UCS)

The **Cisco Unified Computing System (UCS)** is a revolutionary new computing architecture designed for IT innovation and business acceleration. The Cisco UCS enables Fast IT by combining computing, networking, and storage infrastructure with management and virtualization to offer exceptional speed, simplicity, and scalability.

Cisco's unique architecture provides pools of policy-based composable infrastructure that customers can optimize for traditional workloads, data analytics, and cloud-native applications, all within a common operating environment with open APIs for broad interoperability and automation. Cisco UCS has redefined computing to enhance application performance and scalability, simplify infrastructure management, reduce cost, and accelerate IT delivery to the business.

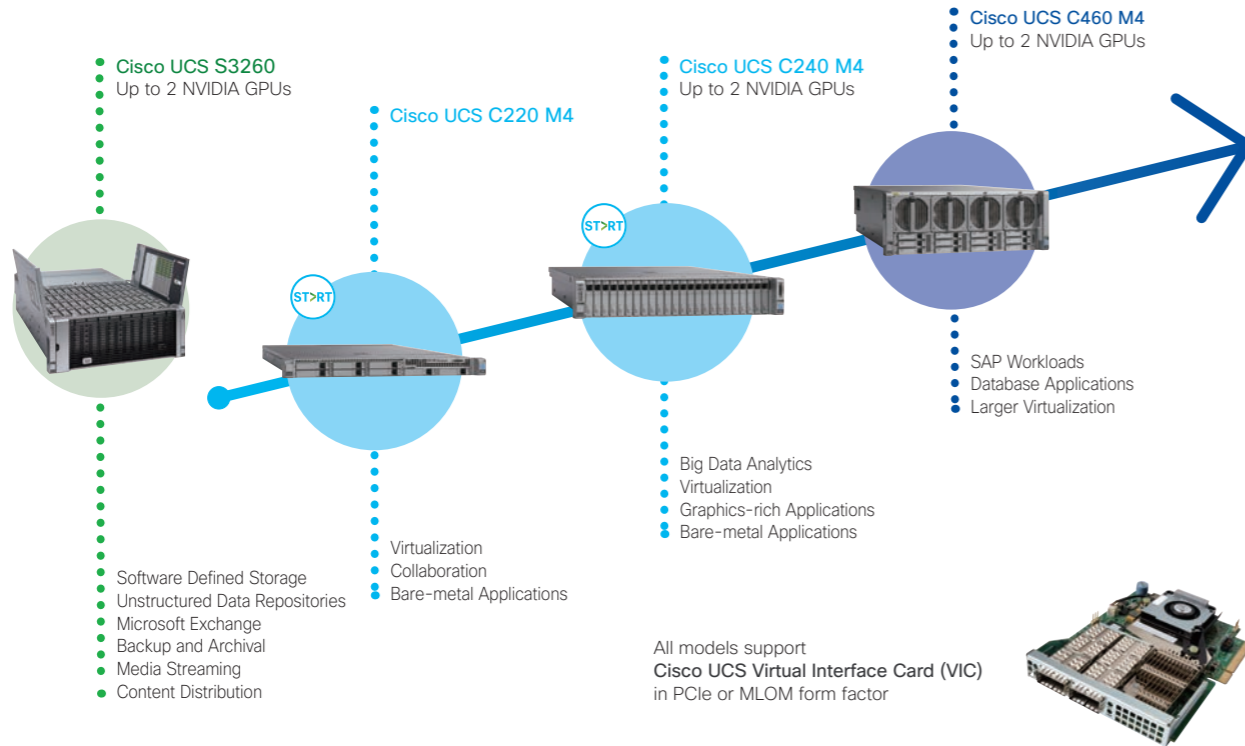
■ Cisco UCS C-Series Rack Servers

The Cisco UCS C-Series Rack Servers provide a rack-server entry point to Cisco UCS. With world-record-setting performance for 2- and 4-socket servers, Cisco UCS C-Series Rack Servers can integrate into Cisco UCS through a single set of cables. Cisco UCS C-Series Rack Servers provide a wide range of I/O, memory, internal disk, and solid-state disk (SSD) drive capacity, enabling you to easily match servers to workloads.

Massive Storage Capacity for Data-intensive Workloads

Performance and Expandability for Enterprise-class Workloads

Superior Performance for Mission-Critical Workloads



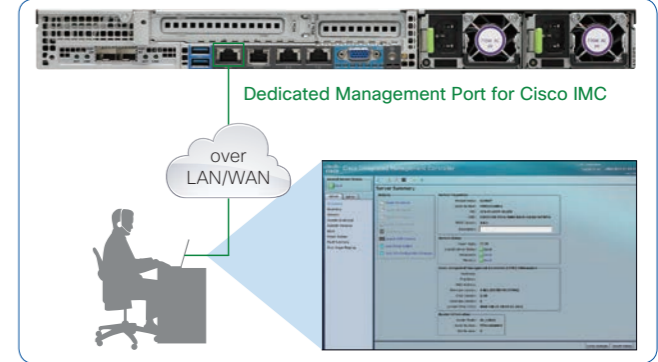
■ Cisco UCS C-Series Rack Servers

Model Name	Processor			Memory		Internal Storage				PCIe Gen3 Slots	Embedded NIC			Rack mount	
	Processor Supported	Sockets	Max Cores per Socket	Slots	Max Memory	Slots	SAS/SATA	SSD	Optional RAID		Max Internal Storage	GE	Mgmt GE		mLOM Slots
UCS C220 M4 SFF	Intel Xeon E5-2600v3/v4	2	22	24	1.5 TB	8	●	●	0/1/5/6/10/50/60	12.8 TB	2	2	1	1	1 RU
UCS C220 M4 LFF	Intel Xeon E5-2600 v3/v4	2	22	24	1.5 TB	4	●	-	0/1/5/6/10/50/60	16 TB	2	2	1	1	1 RU
UCS C240 M4 SFF	Intel Xeon E5-2600 v3/v4	2	22	24	1.5 TB	26	●	●	0/1/5/6/10/50/60	38.4 TB	6	2	1	1	2 RU
UCS C240 M4 LFF	Intel Xeon E5-2600 v3/v4	2	22	24	1.5 TB	12	●	-	0/1/5/6/10/50/60	48 TB	6	2	1	1	2 RU

Three Advantages over a White-Box Server

1 Cisco Integrated Management Controller (IMC)

The **Cisco Integrated Management Controller (IMC)** is a baseboard management controller that provides embedded server management for **Cisco UCS C-Series Rack Servers**. The Cisco IMC enables system management in the datacenter and across distributed branch-office locations. Cisco IMC supports multiple management interfaces, including a web user interface (Web UI), a command-line interface (CLI), and an XML API that is consistent with the one used by the **Cisco UCS Manager**. Cisco IMC also supports industry-standard management protocols, including Simple Network Management Protocol Version 3 (SNMPv3) and Intelligent Platform Management Interface Version 2.0 (IPMIv2.0).



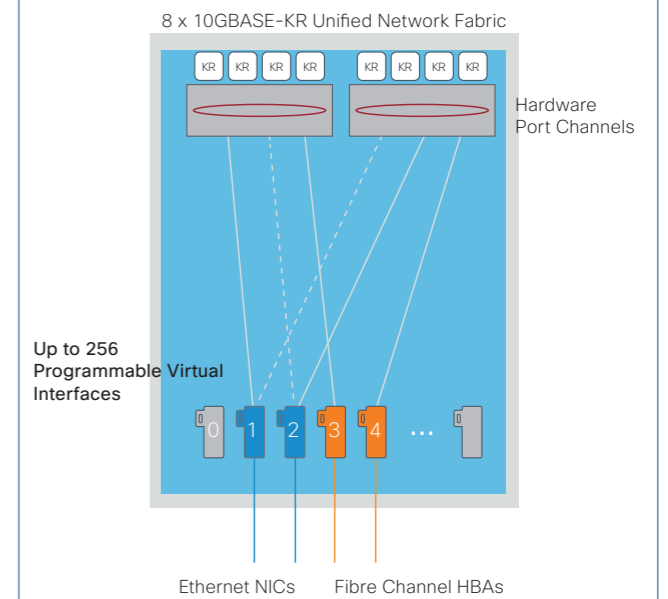
2 Cisco Virtual Interface Cards (VIC)

The **Cisco Virtual Interface Cards (VIC)** is PCIe-compliant interfaces that support up to **256 PCIe devices** with dynamically configured type (NIC or HBA), identity (MAC address or worldwide name [WWN]), fabric failover policy, bandwidth, and QoS policy settings. With Cisco VICs, server configuration—including I/O configuration—becomes configurable on demand, making servers stateless resources that can be deployed to meet any workload need at any time, without any physical reconfiguration or recabling required.

■ Cisco UCS Virtual Interface Card (VIC)

	UCS VIC 1385	UCS VIC 1387
Form Factor	PCIExpress (half height)	Modular LOM
Connectivity	PCIe 3.0 x 16 form factor	PCIe 3.0 x 8 form factor
Network Throughput	80 GB	80 GB
VXLAN/NVGRE	●	●
SMB Direct	●	●
RDMA	●	●
usNIC	●	●

■ Cisco UCS VIC 1380 Architecture

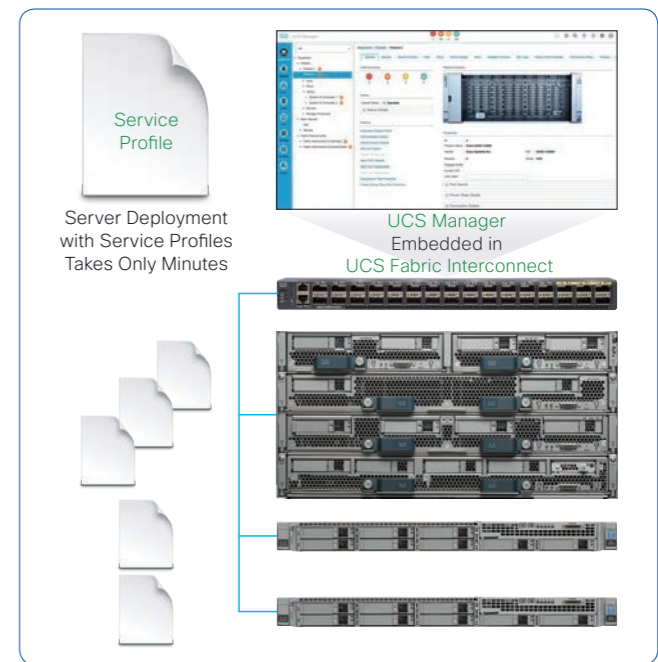


3 Cisco UCS Manager & Cisco UCS Fabric Interconnects

The **Cisco UCS Manager** integrates blade and rack servers into a single self-aware, self-integrating, unified system. It quickly and accurately configures computing, network, storage, and storage-access resources to increase compliance and reduce the chance of errors that can cause downtime. It uses a role- and policy-based approach that helps organizations more easily align policies and configurations with workloads, and it automates system configuration through a "create once, deploy many" approach. Cisco UCS Manager acts as a single point of management and monitoring for the entire system. It is embedded software that runs on the system's fabric interconnects, typically in a redundant, high-availability configuration. It can be accessed through an intuitive GUI, command-line interface (CLI), or XML API.

The **Cisco UCS Fabric Interconnects** provide a single point of connectivity and management for the entire system. Typically deployed as an active-active pair, the system's fabric interconnects integrate all components into a single, highly available management domain controlled by Cisco UCS Manager. The fabric interconnects manage all I/O efficiently and securely at a single point, resulting in deterministic I/O latency regardless of a server or virtual machine's topological location in the system.

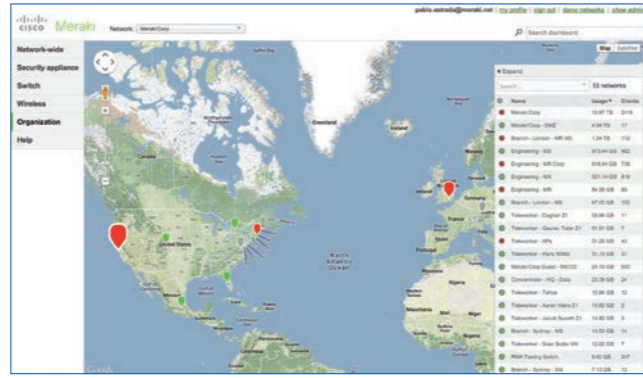
- **Cisco UCS 6200 Series Fabric Interconnects** support line-rate, lossless 10 Gigabit Ethernet and FCoE connectivity.
- **Cisco UCS 6200 Series Fabric Interconnects** can be used to create Cisco UCS domains containing blade or rack servers.
- **Cisco UCS 6300 Series Fabric Interconnects** support line-rate, lossless 40 Gigabit Ethernet and FCoE connectivity.
- **Cisco UCS 6324 Fabric Interconnects** can be used to create a self-contained Cisco UCS Mini solution for branch offices and remote locations.



100% Cloud Managed Networking

The Cisco Meraki portfolio of networking devices are centrally managed from the cloud. This feature-rich, easy-to-use cloud architecture enables customers to solve new business problems and reduce operating costs.

- Manage entire network from a single dashboard
- Control users, applications, and devices
- No controller or management hardware to install and maintain
- Secure (PCI and HIPAA-compliant) cloud infrastructure
- Scales from small sites to million-user deployments



Cisco Meraki Cloud Managed Products



Cloud Managed Wireless

- Indoor and outdoor access point models
- IEEE 802.11ac and 802.11n with ultra-high performance, up to 2.5 Gbps
- Integrated wireless security and guest access
- Third radio dedicated to security and RF optimization (indoor models)
- Ideal for high-density campuses, branches, teleworkers, and rugged/outdoor environments
- Built-in traffic shaping, location analytics, group policies—all configurable with just a few mouse clicks



Cloud Managed Switches

- GE access switches and 40 GE aggregation switches
- Centrally managed with monitoring and alerts
- Ultra reliable and includes lifetime warranty
- Optimized for voice and video traffic with PoE+ available on all ports



Cloud Managed Security Appliances

- Complete networking, security, and application control
- Centrally managed from the cloud
- Includes firewall, auto VPN, WAN optimization, and branch routing
- Six models scale from small branches to campuses



Cloud Managed Security Cameras

- Cloud-augmented edge storage eliminates infrastructure
- Suitable for deployments of all sizes: 1 camera or 1000+
- Intelligent motion indexing with search engine
- Easily export and share historical video
- Secure encrypted control architecture
- Granular user access controls



Mobility Management

- Network-wide visibility and control
- No on-site controller hardware
- Automatic monitoring and alerts
- Seamless over-the-web upgrades

For details on Cisco Meraki, visit the following Web site:

<http://meraki.cisco.com>

Use Cases: Features Most Used by Our Customers

	Retail	Education	Corporate Office
MX Security	Site-to-Site VPN	Content Filtering	IPS with Sourcefire Advanced Malware Protection (AMP)
MS Switching	Cloning Configurations	Virtual Stacking	Layer 3 and Redundancy
MR Wireless	Cloud CMX Analytics	High-Density WiFi	BYOD Policies
MV Security Cameras	Motion Search	Remote Viewing and Management	Granular Access Controls
SM Mobility	Tablet Management	Application Management	Security Policy Enforcement

Introduction to Cisco Meraki MX Cloud Managed Security Appliance Series

Cisco Meraki MX Cloud Managed Security Appliance Series are ideal for organizations with large numbers of distributed sites. Since the MX is 100% cloud managed, installation and remote management is simple.

Key Features

- **Cloud Based Management and Monitoring**
Built-in centralized management
Zero-touch provisioning, ideal for branches
- **Auto VPN (Site-to-Site VPN)**
Two-click setup
Automatic failover to MPLS, 4G, or 2nd WAN link
Data center redundancy
- **Best-in-class Layer 7 Security**
SourceFire-based IPS
Advanced Malware Protection (AMP)
BrightCloud URL filtering with 85 categories
Web (Google/Bing) SafeSearch
MaxMind based Geo-IP security
- **SD-WAN**
Active-Active VPN: Build VPN tunnels over all available uplinks for load balancing and faster failover
Policy-Based Routing (PbR): Assign different VPN paths for different types of traffic
Dynamic path selection: Set performance thresholds for dynamic performance-based failover between VPN paths, per application
- **Application Traffic Shaping**
Prioritize business critical apps like VoIP and video
Reduce Internet costs
Web caching for faster Internet access



Selection Guide

- **MX64/MX65: Up to 50 users**
Retail locations or small branches
Cost-conscious end customer
Customers who want a wired-wireless combo (MX64W/MX65W)
- **MX84: Up to 100 users**
1 TB built-in HDD for web caching
- **MX100: Up to 500 users**
Large branches or mid-size K-12 campuses
Needs more than 4 ports or SFP (fiber) connectivity
- **MX400: Up to 2,000 users**
Mid-size campus deployments
VPN concentrator for large deployments
- **MX600: More than 2,000 users**
Large campus deployments
Customers who need 4 TB for web caching
VPN concentrator for very large deployments

License Editions

	Enterprise	Advanced Security
Stateful Firewall, NAT, DMZ	●	●
Active/Passive HA	●	●
Layer 7 Traffic Shaping	●	●
Cloud-based Management	●	●
Monitoring and Alerts	●	●
Link Aggregation and Failover	●	●
Web Caching	●	●
Site to Site (IPsec) VPN	●	●
Client VPN	●	●
IDS/IPS	-	●
Content Filtering with SafeSearch	-	●
Anti-Virus and Anti-Phishing	-	●
Geo-IP Firewall Rules	-	●

Key Hardware Specifications

	MX64	MX65	MX84	MX100	MX400	MX600
Recommended Users	50	50	200	500	2,000	10,000
Firewall (Mbps)	250	250	500	750	1,000	1,000
Advanced Security (Mbps)	200	200	300	650	1,000	1,000
Max VPN Peers	25	25	100	250	1,000	5,000
Dual WAN Links	●	●	●	●	●	●
Web Caching	-	-	●	●	●	●
Web Cache Size (TB)	-	-	1	1	1	4
Fiber Connectivity	-	-	-	SFP	SFP+	SFP+
Dual Power Supply	-	-	-	-	●	●

Cloud Managed Wireless

Cisco Meraki MR Cloud Managed Wireless Access Points

Model	Indoor Access Points					
	MR18	MR30H <small>NEW</small>	MR32	MR33 <small>NEW</small>	MR42	MR52
Radios Specification	1 x 11b/g/n radio 1 x 11a/n radio	1 x 11b/g/n radio 1 x 11a/n/ac radio	1 x 11b/g/n radio 1 x 11a/n/ac radio 1 x BLE radio	1 x 11b/g/n radio 1 x 11a/n/ac radio	1 x 11b/g/n radio 1 x 11a/n/ac Wave 2 radio 1 x BLE radio	1 x 11b/g/n radio 1 x 11a/n/ac Wave 2 radio 1 x BLE radio
11n and 11ac Capabilities	2 x 2 MIMO 2 streams	2 x 2 MU-MIMO 2 streams	2 x 2 MIMO 2 streams	2 x 2 MU-MIMO 2 streams	3 x 3 MU-MIMO 3 streams	4 x 4 MU-MIMO 4 streams
Max Data Rate*1	600 Mbps	1.3 Gbps	1.2 Gbps	1.3 Gbps	1.9 Gbps	2.5 Gbps
Interface	1 x GE	1 x GE	1 x GE	1 x GE	1 x GE	2 x GE

*1 Combined aggregate dual-band data rate.

Model	Outdoor Access Points					Teleworker Gateway
	MR53	MR62	MR66	MR72	MR84 <small>NEW</small>	Z1
Radios Specification	1 x 11b/g/n radio 1 x 11a/n/ac Wave 2 radio 1 x BLE radio	1 x 11b/g/n radio	1 x 11b/g/n radio 1 x 11a/n radio	1 x 11b/g/n radio 1 x 11a/n/ac radio 1 x BLE radio	1 x 11b/g/n radio 1 x 11a/n/ac Wave 2 radio 1 x BLE radio	1 x 11b/g/n radio 1 x 11a/n radio
11n and 11ac Capabilities	4 x 4 MU-MIMO 4 streams	2 x 2 MIMO 2 streams	2 x 2 MIMO 2 streams	2 x 2 MIMO 2 streams	4 x 4 MU-MIMO 4 streams	2 x 2 MIMO 2 streams
Max Data Rate*1	2.5 Gbps	300 Mbps	600 Mbps	1.2 Gbps	2.5 Gbps	600 Mbps
Interface	1 x GE 1 x mGig (Up to 2.5 Gbps)	1 x GE	1 x GE	1 x GE	1 x GE 1 x mGig (Up to 2.5 Gbps)	1 x GE WAN 4 x GE LAN

*1 Combined aggregate dual-band data rate.

Cloud Managed Switches

Cisco Meraki MS Cloud Managed Switches

Model	Layer 2 Access Switches			Basic Layer 3 Access Switches		Premium
	MS220-8 MS220-8P	MS225-24 <small>NEW</small> MS225-24P <small>NEW</small>	MS225-48 <small>NEW</small> MS225-48LP <small>NEW</small> MS225-48FP <small>NEW</small>	MS250-24 <small>NEW</small> MS250-24P <small>NEW</small>	MS250-48 <small>NEW</small> MS250-48LP <small>NEW</small> MS250-48FP <small>NEW</small>	MS350-24 MS350-24P
Downlinks	8 x GE	24 x GE	48 x GE	24 x GE	48 x GE	24 x GE
Uplinks	2 x SFP	4 x SFP/SFP+	4 x SFP/SFP+	4 x SFP/SFP+	4 x SFP/SFP+	4 x SFP/SFP+
Stacking	Virtual	Physical (80 G) + Virtual	Physical (80 G) + Virtual	Physical (80 G) + Virtual	Physical (80 G) + Virtual	Physical (160 G) + Virtual
PoE/PoE+ Power Budget	124 W (8P)	370 W (24P)	370 W (48LP) 740 W (48FP)	370 W (24P)	370 W (48LP) 740 W (48FP)	370 W (24P)
Switching Capacity	20 Gbps	128 Gbps	176 Gbps	128 Gbps	176 Gbps	128 Gbps

*1 UPOE (60 W) is supported.

Model	Layer 3 Access Switches		Aggregation Switches			
	MS350-24X	MS350-48 MS350-48LP MS350-48FP	MS410-16	MS410-32	MS425-16	MS425-32
Downlinks	16 x GE, 8 x mGig	48 x GE	16 x SFP	32 x SFP	16 x SFP/SFP+	32 x SFP/SFP+
Uplinks	4 x SFP/SFP+	4 x SFP/SFP+	2 x SFP/SFP+	4 x SFP/SFP+	2 x QSFP+	2 x QSFP+
Stacking	Physical (160 G) + Virtual	Physical (160 G) + Virtual	Physical (160 G) + Virtual	Physical (160 G) + Virtual	Physical (160 G) + Virtual	Physical (160 G) + Virtual
PoE/PoE+ Power Budget	740 W*1	370 W (48LP) 740 W (48FP)	-	-	-	-
Switching Capacity	432 Gbps	176 Gbps	72 Gbps	144 Gbps	480 Gbps	800 Gbps

Cloud Managed Security Appliances

Cisco Meraki MX Cloud Managed Security Appliance Series

Model	Small Branch		Medium Branch		Large Branch, Campus / Concentrator	
	MX64 MX64W	MX65 MX65W	MX84	MX100	MX400	MX600
Recommended Max Users	50	50	200	500	2,000	10,000
Stateful Firewall Throughput	250 Mbps	250 Mbps	500 Mbps	750 Mbps	1 Gbps	1 Gbps
Advanced Security Throughput	200 Mbps	200 Mbps	300 Mbps	650 Mbps	1 Gbps	1 Gbps
Maximum VPN sessions	25	25	100	250	1,000	5,000
Interfaces	5 x GE	12 x GE (2 PoE+)	10 x GE 2 x SFP	9 x GE 2 x SFP	4 x GE	4 x GE
Wireless (MX64W/MX65W)	1 x 11b/g/n radio 1 x 11a/n/ac radio 2 x 2 MIMO 2 streams 1.2 Gbps	1 x 11b/g/n radio 1 x 11a/n/ac radio 2 x 2 MIMO 2 streams 1.2 Gbps	-	-	-	-

Cloud Managed Security Cameras NEW

Cisco Meraki MV Cloud Managed Security Cameras

Model	Indoor MV21	Outdoor MV71
	Camera	1/3.2" 5MP (2560x1920) progressive CMOS image sensor 3 - 10mm vari-focal lens with variable aperture f/1.3 - f/2.5 Variable field of view: 28 - 82° (Horizontal), 21 - 61° (Vertical), 37 - 107° (Diagonal)
Video	1/5 sec. to 1/32,000 sec. shutter speed Minimum illumination 0.27 Lux @ F1.3 (color) 0.001 Lux @ F1.3 (B&W)	
Storage	720p HD video recording (1280x720) with H.264 encoding 128 GB high endurance SSD	
Interface	1 x FE	
Dimensions	166 mm x 116.5 mm	173.3 mm x 115 mm
Weight	1.028 kg	1.482 kg
Lens Adjustment Range	65° Tilt, 350° Rotation, 350° Pan	
Weather-Proof IP66	-	●
Vandal-Proof IK10	-	●

Cisco Smart Net Total Care Service

Your IT infrastructure is the lifeline that connects your business to customers and suppliers. Business success requires maintaining high service levels for your network while reducing costs and expanding your network as your business grows. **Cisco Smart Net Total Care** can help you meet these objectives by providing technical services and smart capabilities that:



- Resolve Problems Faster**
 Identify issues quickly and streamline your incident management processes to reduce network downtime and improve IT service levels.
- Reduce Risk**
 Access to Cisco technical experts combined with smart, proactive tools and capabilities minimizes risks to business continuity.
- Increase Operational Efficiency**
 Proactive management and automated processes mean fewer support resource requirements and lower costs for managing your network.

Technical Service and Incident Management

- Cisco TAC**
 The **Cisco TAC** is staffed by Cisco professionals certified in a broad range of Cisco products and technologies and service provider architectures. We provide you with access by phone, fax, or email 24 hours a day, 365 days a year and can assist you with product use, configuration, and troubleshooting issues.
- Advance Hardware Replacement**
 With our customized hardware support service plans, you can have confidence knowing that your hardware can support your ongoing business needs. Cisco offers multiple service levels with different shipment options.

Advance Hardware Replacement Service Levels

Service Level	Description
Smart Net Total Care 24 x 7 x 2	2-hour response, 24 hours a day, 7 days per week, including holidays
Smart Net Total Care 24 x 7 x 4	4-hour response, 24 hours a day, 7 days a week, including holidays
Smart Net Total Care 8 x 5 x 4	4-hour response, local business hours based on depot time, 5 days a week
Smart Net Total Care 8 x 5 x Next Business Day	Next-business-day delivery, local business hours based on depot time, 5 days a week

- Onsite Support**
 Cisco is committed to providing professional, customer-focused support services in person at your location. Smart Net Total Care Onsite service includes installation of advance replacement parts.

Onsite Support Service Levels

Service Level	Description
Smart Net Total Care Onsite 24 x 7 x 2	2-hour response, 24 hours a day, 7 days per week, including holidays
Smart Net Total Care Onsite 24 x 7 x 4	4-hour response, 24 hours a day, 7 days a week, including holidays
Smart Net Total Care Onsite 8 x 5 x 4	Based on depot time. 4-hour response, 9 a.m. to 5 p.m., if the request is received before 1 p.m., the service (including parts, labor, and materials) will be provided the same day. For requests received after 1 p.m., the service will be provided the following business day.
Smart Net Total Care Onsite 8 x 5 x NextBusiness Day	Based on depot time. Next business day, 9 a.m. to 5 p.m., if the request is received before 3 p.m., the service (including parts, labor, and materials) will be provided the next business day. After 3 p.m., the service (including parts, labor, and materials) will be provided the following business day.

- Software Updates**
 Cisco provides OS software updates for your licensed feature set. Software releases and any supporting documentation are available through Cisco.com Software Central at <http://software.cisco.com/swcentral/home.html>.
- Online Self-Help Support**
 Cisco provides access to the Cisco Support website, which includes Cisco's extensive knowledge library, software downloads, and support tools designed to help users resolve network issues quickly without opening a case.

Security and Product Alerts

- Hardware Alerts**
 Hardware alerts inform you about devices that have reached or are approaching end of life in your network.
- Security Alerts**
 Security alerts are Product Security Incident Response Team (PSIRT) alerts that inform you about security vulnerabilities associated with specific devices in your network.
- Software Alerts**
 Software alerts inform you about end-of-life issues with specific software versions you are using.
- Field Notices**
 Field notices inform you about significant issues (other than security vulnerability issues) with a hardware device or software version.

Smart Net Total Care Capabilities	Faster Problem Resolution	Risk Mitigation	Operational Efficiency
Technical Service and Incident Management <ul style="list-style-type: none"> Fast expert technical support from Cisco TAC Advance hardware replacement Automated streamlined processes for incident management 	●	●	●
Security and Product Alerts <ul style="list-style-type: none"> Actionable security alerts Relevant product notices (Hardware and software) Service availability alerts (Hardware and software) 	-	●	●
Service Coverage Management <ul style="list-style-type: none"> Covered/uncovered, right coverage Renewal preparation and planning Budget planning 	-	●	●
Product Lifecycle Management <ul style="list-style-type: none"> Up-to-date installed base information EoS/EoL, software version mismatches Automation to reduce cost and risk of manual processes 	-	●	●

Service Coverage Management

- Service Coverage Reports**
 Device data from installed base collections can be matched against service contracts and purchase orders to identify coverage gaps. View all service contracts and coverage levels, including 24-month advance visibility into upcoming renewal dates. Reviewing coverage information can help ensure that devices in your network have the right kind of coverage for their intended use.
- Service Coverage and Renewal Management Workflow**
 This feature gives you the ability to document and annotate those devices that do not require service coverage and why. You can also assign tasks to people responsible for architectural or budget planning to ask for recommendations about renewing coverage versus replacing specific devices before their service contracts expire.

Product Lifecycle Management

- Role-based Access Control (RBAC)**
 The Smart Net Total Care portal gives you control over the types of data that users can see. User views within the portal are based on the user's role, allowing administrators to assign roles and designate network device data visibility for portal users, including partners. For example, a certain group of network administrators may be given access to data for a specific segment of the network, and other groups of users may be restricted to specific types of information such as device configuration data or security alerts.
- Device Data File Uploads**
 In addition to data uploads from the Cisco collector, data can be uploaded using manual file uploads (such as from a spreadsheet) or third-party collection mechanisms. After data is uploaded into the portal, it can be analyzed and enriched with Cisco support information.

Protection Beyond Warranty

- Services Difference**
 Provide your customers with piece of mind, security and protection to ensure they have the support they need for their network and eliminating the fear their data could get lost.
- Customer Experience**
 - Ease of doing business with SW upgrades, alerts and updates being managed by experts
 - Confidence the "whole network" is supported
 - Fast, efficient, and excellent customer delivery service

Technical Support Service Offering Comparison between the Different Product Warranties and a Service Contract

Warranty	Standard Warranty	Limited Lifetime Warranty	Enhanced Limited Lifetime Warranty	Service Support Contract
24/7 TAC Access	Limited Lifetime Warranty	Service Support Contract	90 days support from date of purchase (access only during business hours)	●
OS Updates and Upgrades	-	-	-	●
Application Software Updates and Upgrades	-	-	-	●
Online Technical Resources	Guest Access	Guest Access only	Guest Access	●
Hardware Replacement in as Little as 2 Hours	-	10 Business Days	Next Business Day Ship to original address	●
Proactive Diagnostics and Alerts	-	-	-	●
Renewable Contracts	-	-	-	●