Cisco Unified Communications 520:
A Complete Voice and Data Solution for Small Business

For
Small
Business
cisco

The Cisco® Smart Business Communications System (SBCS) enables businesses to enhance how they reach, serve, and retain customers. It is an affordable system that gives your staff anytime, anywhere access to business information and applications, making it easier than ever to communicate with customers and each other.

Product Overview

The Cisco Unified Communications 520 for Small Business, a critical part of the Cisco Smart Business Communications System, is an affordable unified communications appliance that provides voice, data, voicemail, Automated Attendant, video, security, and wireless capabilities while integrating with existing desktop applications such as calendar, email, and customer relationship management (CRM) programs. This easy-to-manage platform supports up to 64 phones and voice mailboxes and provides flexible deployment options based on your needs - a wide array of IP phones, public switched telephone network (PSTN) interfaces, and Internet connectivity (Figures 1 through 3).

Figure 1.   Cisco Unified Communications 520 Series: 8- and 16-User Configuration

Figure 2.   Cisco Unified Communications 520 Series: 24- and 32-User Configuration

Figure 3.   Cisco Unified Communications 520 Series: 48-User Configuration with upgrade capability to 64-User

Components of the Cisco Unified Communications 520 include:

- Cisco Unified Communications Manager Express for call processing of Cisco Unified IP Phones, providing a phone system rich in features
- Cisco Unity® Express for voice messaging and Automated Attendant, to help improve communication among employees and with customers
- An integrated 8-port Power over Ethernet (PoE) local-area network (LAN) switch
- Network security functions including Cisco IOS® Firewall, which protects the wide-area network (WAN) entry point into your network, and virtual private network (VPN), which gives up to 10 remote users highly secure access to your network
- Optional integrated wireless LAN (WLAN) capability on some models or external access points and Cisco Wireless LAN Controller Modules, to enable mobile networking, which can help increase employee flexibility and productivity
- Cisco Configuration Assistant so you can easily configure devices and technologies including unified communications (phones and software), switching, routing, security, and wireless
- Optional remote system-monitoring capabilities

Cisco Unified Communications 520 also supports (sold separately):

- Cisco Unified IP Phones and Cisco Small Business Pro IP Phones, including wireless handsets and Session Initiation Protocol (SIP) phones
- Cisco Unified CallConnectors for integration with Windows PC applications including Microsoft Outlook, Internet Explorer, Microsoft Dynamics CRM, or Salesforce.com CRM
- An ability to expand switching capabilities through a connection to Cisco Catalyst® Express 520 Series Switches, which provide an additional 8 to 24 ports, or Cisco ESW 500 Series Switches in 24- and 48-port Fast Ethernet, Gigabit Ethernet, and PoE models

Cisco Unified IP Phones

As a key component of the Cisco Unified Communications 520 Series, Cisco Unified IP Phones and communications devices are designed to take full advantage of converged voice and data networks. These devices offer the convenience and user friendliness found in business phones, and can help improve productivity by meeting the needs of different users throughout your organization.

The Cisco Unified IP Phone portfolio provides the following:

- IP phones with LCD displays, including dynamic soft keys for call features and functions
- Support for information services, including Extensible Markup Language (XML) capabilities to extend IP phone systems, giving you access to a variety of information, such as stock quotes, employee directories, and Web-based content

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Cisco Unified IP Phones provide a complete IP phone system portfolio with ease of use, excellent audio quality, increased accessibility for people with disabilities, ergonomic physical design, and advanced services and features.

The Cisco Unified IP Phone portfolio includes options for use from wherever you are: the company lobby, the manufacturing floor, the executive suite, at home, on the road, or in a branch office (Figure 4).

Figure 4. Cisco Unified IP Phone Portfolio

Cisco Unified IP Phones 500 Series

The Cisco Unified IP Phones 521G, 521SG, 524G, and 524SG (Figure 5) are a set of entry-level IP phones that provide key system type capabilities, built specifically for use with Cisco's Unified Communications 500 Series platforms. These phones can be used to handle low to moderate telephone traffic. The Cisco Unified IP Phones 521G and 521SG are single-line IP phones being able to handle up to two active calls. The Cisco Unified IP Phones 524G and 524SG provides 4 programmable line or feature buttons with each line being able to handle up to two active calls. Four dynamic soft keys on each phone guide you through core business features and functions, while a back-lit monochrome pixel-based display combines intuitive features, calling information, and device system information. The Cisco Unified IP Phones 521G, 521SG, 524G, and 524SG offer IEEE 802.3af PoE, or local power through an optional power adapter.

Figure 5. Cisco Unified IP Phones 500 Series

The phones in the Cisco Unified IP Phones 500 Series work exclusively with the Cisco Unified Communications 520 Series for Small Business and cannot be used with other Cisco call processing platforms.

Cisco SPA 500 Series IP Phones

Part of the Cisco Small Business Pro Series; The Cisco SPA 500 Series IP Phones (Figure 6) are a robust portfolio of small business phones that provide a rich user experience with Cisco wide band audio support, XML applications, and intuitive menu options. Intended for use with the Cisco Smart Business Communications System and Cisco SPA9000 Voice System applications, or SIP based open source or hosted IP telephony solutions.

Figure 6. Cisco SPA 500 Series IP Phones

Cisco Unified Communications Manager Express

Cisco Unified Communications Manager Express is a Cisco IOS Software solution embedded in the Cisco Unified Communications 500 Series appliance that provides call processing for Cisco Unified IP Phones. Simple to deploy, administer, and maintain, Cisco Unified Communications Manager Express is a reliable, feature-rich telephony solution.

Cisco Unity Express

Embedded Cisco Unity Express helps enable voicemail, desktop messaging, and Automated Attendant services for increased customer service and a rich employee communications experience.

Cisco Unified CallConnectors for Windows PC Applications

The Cisco Unified Communications 520 Series integrates with common Windows desktop applications to give your business access to productivity gains once available only to large businesses. With Cisco Unified CallConnectors, you can integrate your Cisco Unified IP Phones with common business applications, including Microsoft Outlook, Internet Explorer, Microsoft Dynamics CRM, or Salesforce.com CRM.

Cisco Smart Business Productivity Applications

New productivity applications on the Cisco Unified Communications 520 Series integrate it with business processes and operations. Some examples of Smart Business Productivity Applications are:

- Cisco Single Number Reach provides follow-me capabilities for Cisco Unified IP Phone users
- Cisco TimeCardView is a time and attendance application that allows staff to clock in and out, track hours, send reports, and upload information to payroll applications from their IP phone

LAN Switching and Routing

The Cisco Unified Communications 520 Series has an integrated, managed Ethernet switch that provides eight ports of 10/100 PoE optimized for integration with the Cisco Smart Business Communications System. Additionally, you can expand the capacity of the by adding a switch from the Cisco Catalyst Express 520 Series or from the Cisco ESW 500 Series, part of the Cisco Small Business Pro product portfolio. Cisco Catalyst Express 520 Series switches provide 8 to 24 additional 10/100 Power over Ethernet ports. Cisco ESW 500 Series switches provide up to 48 additional 10/100 Power over Ethernet or 24 10/100/1000 Power over Ethernet ports. Both series ship with a software configuration that enables them to work immediately with the Cisco Unified Communications 520 Series platform.

Firewall for Network Security

Security is a fundamental element of any network, and Cisco products play an important role in embedding security at the customer's access edge. The Cisco IOS Firewall is a stateful-inspection firewall available with the Cisco Unified Communications 520 Series. Built from market-leading Cisco PIX® Firewall software technologies, the Cisco IOS Firewall is a base feature on the Cisco Unified Communications 520 Series platform; it is ideal for protecting the WAN entry point into the network.

Virtual Private Networking

VPNs carry private data over a public network and extend remote access to users over a shared infrastructure. Maintaining the same security and management policies as private networks, VPNs are the most cost-effective means of establishing point-to-point connections between remote users and a central network. VPNs have been the fastest-growing form of network connectivity, and Cisco takes this approach to a new level by making VPN functions an integral part of the Cisco Unified Communications family of products. The Cisco Unified Communications 520 Series supports a maximum of 10 VPNs and includes built-in hardware-based encryption acceleration that offloads IP Security (IPsec), Advanced Encryption Standard (AES), Data Encryption Standard (DES), and Triple DES (3DES) encryption and VPN processes to provide increased VPN throughput on the Cisco Unified Communications 520 Series platform.

Wireless Mobility Services

Note: The 8- and 16-user models of the Cisco Unified Communications 520 Series support an optional integrated WLAN access point for secure WLAN connectivity. As part of the Cisco Smart Business Communications System, the Cisco Unified Communications 520 Series also supports the optional external Cisco AP 541N clustering wireless access point that enables mobile networking (data and voice) for office spaces, helping increase employee flexibility and productivity. The 24-, 32-,48-user and upgraded 64-user models of the Cisco Unified Communications 520 Series do not support an optional integrated WLAN access point. These models can use the Cisco AP 541N clustering wireless access point to enable WLAN functions.

Cisco Configuration Assistant

The Cisco Configuration Assistant, a PC-based, intuitive GUI configuration tool, is an integral component of the Cisco Smart Business Communications System. With a focus on ease of use, it simplifies the task of configuring and modifying multiple technologies, such as unified communications, switching, routing, security, and wireless. Features include an interactive topology view, front-panel views of devices, wireless deployment setup wizard, and drag-and-drop Cisco IOS Software upgrades (Figure 7).

Figure 7.   System Dashboard in Cisco Configuration Assistant
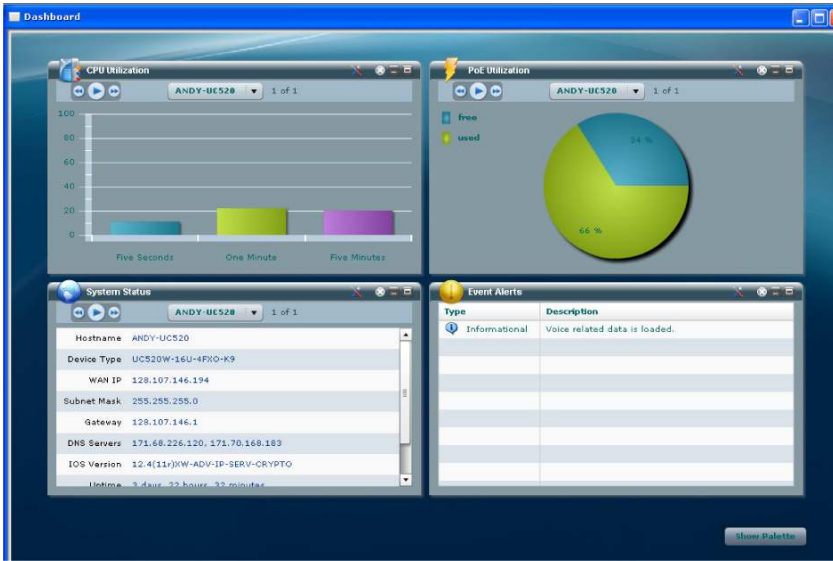
Architecture Features and Benefits

The Cisco Unified Communications 520 Series integrates voice, data, video, security, wireless, and management into one platform. It brings unified communications to small businesses and organizations by providing a simplified, affordable solution that is easy to configure, deploy, and manage. By combining call control, messaging, and mobility into one device, the Cisco Unified Communications 520 Series eliminates the added costs of multiple servers and provides a solution that is easy to set up and manage at a lower price point.

Table 1 summarizes the features and benefits of the Cisco Unified Communications 520 Series.

Table 1.   Platform Features and Benefits

Feature	Benefit
Solution packaging	The solution offers various fixed configurations, eliminating the guesswork.
	Each configuration is equipped with the appropriate number of feature licenses for call processing, voicemail, and Cisco Unified IP Phones, simplifying the product structure.
	A modular slot is available in most of the configurations, allowing expansion of the system with additional PSTN or analog station interfaces.
	The appropriate number of fixed digital signal processors (DSPs) is packaged with each configuration.
Default system configuration	Although packaged to support various deployment configurations, the solution comes with a Cisco Smart Assist predefined configuration from the factory, allowing for rapid deployment of the product in the field:
	● Preassigned phone extensions
	● Background images for color IP phones
	● Ringtones for IP phones
	● Music-on-hold
	● Dial plan
	● Voice and data VLANs
	● Firewall settings
	With the appropriate licensed base platform, expanding the system is easy; simply connect the companion Cisco Catalyst Express 520 Switch and connect phones to the new PoE Ethernet ports.

Feature	Benefit
Integrated voicemail and Automated Attendant	Voice messaging raises the level of professionalism, productivity, and customer service available to small business customers with built-in Automated Attendant and advanced voicemail capabilities.
	With Professional Automated Attendant, all calls can be handled efficiently and reliably 24 hours a day. Callers can dial by extension number of the group or person they are trying to reach or use the Dial-by-Name feature when they do not know a specific extension.
	Voicemail extends your organization's productivity by allowing employees to access messages at any time from any telephone. Both internal and external calls to a busy or unattended phone are forwarded to the user's voice mailbox and are greeted with the user's personalized greeting.
	Integrated messaging allows you to check your voicemail using Internet Mail Access Protocol (IMAP) email clients, including Microsoft Outlook, Outlook Express, or Lotus Notes. You can also access voicemail features using the XML display on Cisco Unified IP phones.
Ethernet connectivity with quality of service (QoS)	Ethernet connectivity is provided for IP phones or wireless access points by PoE ports that provide connectivity speeds for up to 100BASE-T Ethernet technology without the need for additional power modules. Most Cisco Unified IP phones include a 10/100 switch with QoS to provide PC desktop connectivity to the network.
	Optimized QoS is provided for IP phone and desktop configurations. The QoS level helps ensure that voice over IP (VoIP) traffic takes precedence.
	Voice and data traffic have separate VLANs.
	Port security limits unauthorized access to the network.
Power failover	A power failover feature on the base configuration allows access to the PSTN line if a power outage occurs. When power is lost, the first foreign exchange office (FXO) PSTN trunk is directly connected to foreign exchange station (FXS) analog port, allowing for calls to be placed and received.
Recorded announcements for callers: music on hold (MOH)	The process for providing customized MOH announcements is simplified with a dedicated MOH port, allowing small-business owners to play recorded announcements to their callers by simply plugging the audio source into the provided 3.5-mm mini-jack.
	You can also use. wav files stored on flash memory of the system.
	MOH is an audio stream that is played to PSTN and VoIP G.711 or G.729 callers who are placed on hold, reassuring the callers that they are still connected to the called party.
Deployment options	Depending on the configuration, the Cisco Unified Communications 520 Series can be deployed as a desktop unit, wall-mounted, or installed in a standard 19-inch (48.26-cm) rack with an optional rack-mount kit.
	The Cisco Unified Communications 520 Series can be deployed in a wired (standard) configuration, using the LAN wiring to connect the system components. As an alternative, the Cisco Unified Communications 520 Series can be deployed in a wireless-only configuration with the Cisco Small Business Pro IP Phone SPA525G, eliminating the need for cables and making deployment easier.

Unified Communications Features

IP telephony is currently experiencing tremendous growth, accelerated by access to value-added features and applications that only IP telephony can provide to the end user. Additionally, the cost benefits of converging data, voice, and video on a single network are adding to the rapid acceptance of this technology. Because it is integrated into a single system, Cisco Unified Communications 520 Series for Small Business enhances the advantages of convergence by offering the following benefits:

- **Cost-effective operations through a single, integrated voice-and-data platform for all small-office needs:** This highly reliable platform provides robust QoS and the right level of security, encryption, and firewall to deliver enhanced VPN services to meet small-business needs. The system delivers integrated IP telephony, voicemail, and Automated Attendant functions, allowing you to deploy one device to address all your business needs - thereby simplifying management, maintenance, and operations and delivering a lower total cost of ownership (TCO).

- **Sophisticated key system and private branch exchange (PBX) capabilities:** Small businesses have different workflows and require specialized features to support their work practices. The Cisco Unified Communications 520 Series delivers a robust set of telephony features for the small office and delivers unique, value-added capabilities through XML. These capabilities, which cannot be delivered by traditional systems, enhance the productivity of the end user and the business.

- **Remote maintenance and troubleshooting:** You can use the industry-standard Cisco IOS Software command-line interface (CLI) or user-friendly GUI to configure and administer the Cisco Unified Communications 520 Series system.

The Cisco Unified Communications 520 Series appliance offers the feature set available with Cisco Unified Communications Manager Express 7.0 and Cisco Unity Express 3.2.

Note: The Cisco Unified IP Phone 500 Series and SPA 500 Series work exclusively with the Cisco Unified Communications 520 Series for Small Business and cannot be used with other Cisco call processing platforms. Cisco Configuration Assistant Release 1.6 (or a more recent release) and Cisco IOS Software Release 12.4(11)XW7 (or a more recent release) are required in order for the 521G and 524G phones to be recognized by the Unified Communications 520 Series. Cisco Configuration Assistant Release 1.7 (or a more recent release) and Cisco IOS Software Releases 12.4(11)XW9 or 12.4(20)T (or more recent releases) are required for the 521SG and 524SG phones.

Table 2 summarizes the unified communications features.

Table 2.   Cisco Unified Communications 520 Series for Small Business Features

Feature	Benefit
End-user phone features	• Multiline appearances on phone • Attendant console functions using Cisco Unified IP Phone Expansion Module 7914 or PC-based attendance console • Fast transfer: Blind or consult • Busy Lamp Field • Silent ringing options • Automatic line selection for outbound calls • Call Forward on busy, no answer, and all • Call Forward All restriction control • Do Not Disturb (DND) • Feature ring with DND set • IP phone display of DND state • Dial-plan pattern load on SIP phones • Diversion of calls directly to voicemail • Customization of soft keys • Enable and disable Call Waiting notification per line • Call Waiting with overlay Directory Number • Call Waiting Ring • Dual line appearances per button • After-hours toll-bar override • Auto-answer with headset • European date formats • Hook flash pass-through across analog PSTN trunks • Idle URL: Periodically pushes messages or graphics on IP phones • Last Number Redial • Local Name Directory Lookup • On-Hook Dialing • Station Speed Dial with configuration changes from IP phone • System Speed Dial for 10,000 numbers • Silent and Feature Ring options • SIP-based Line-Side Subscribe, providing basic presence of phone status • Access features using soft keys or feature access codes • Remote teleworker IP phone support • Dynamic Hunt-Group Join or Leave • Support for fax machines on FXS ports using H.323, Skinny Client Control Protocol (SCCP), and SIP • XML application services on Cisco Unified IP Phone displays • Station-to-station video telephony using Cisco Unified Video Advantage or Cisco Unified IP Phone 7985G endpoints

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Feature	Benefit
PSTN interfaces and features	• Analog FXO Loop and Ground Start • Basic Rate Interface (BRI) support for several switch types currently supported in Cisco IOS Software • T1/E1 for PSTN Connectivity • Caller ID name and number • Automatic Number Identification (ANI) • Direct inward dialing (DID) • Direct outward dialing • Dedicated trunk mapping to phone button • H.323 trunks with H.450 support • H450.12 automatic detection of H.450 support for remote H.323 endpoints • H.323-to-H.323 Hairpin Call Routing for non-H.450-compliant H.323 endpoints • SIP trunks and RFC 2833 support • Transcoding G.711 and G.729a
System calling features	• Account codes and call detail record (CDR) field entry • Callback Busy Subscriber Camp-On • Per-phone call coverage rules • Call Hold and Retrieve • Call Park: Personal and directed • Call Park Recall • Call Park Assign to Extension • Call Pickup Directed • Call Pickup Local Group • Call Pickup Explicit Group • Call Transfer: Consultative and blind • Call Waiting • Eight-party impromptu conferencing • Computer telephony integration (CTI) with Microsoft Dynamics CRM, Outlook, or Salesforce.com CRM using Cisco IOS Software Telephony Services Provider (TSP) • Directory services using XML • Hunt groups: Sequential, circular, and longest idle • Hunt-group dynamic log in and log out • Hunt-groups statistics: Daily and hourly • Intercom • Meet-Me Conferencing • MOH: Internal or external source • Night Service Bell or Call Forwarding • Overlay extensions for enhanced call coverage • Called-name display for overlay extensions • Paging: Internal through IP phones or to external system • Per-call caller ID blocking • Secondary dial tone • Additional system speed-dial option through XML service • Time-of-day and day-of-week call blocking • Customizable called-name display • Basic automatic call distributor (B-ACD) (three queues) with Automated Attendant and call statistics • Display of number of calls in queue on IP phone • Agent log in and log out of B-ACD hunt group • Secure voice IP phone certificate authentication and provisioning plus secure device signaling using Transport Layer Security (TLS) • For additional information about Cisco Unified Communications Manager Express features, please visit http://www.cisco.com/go/ccme

Feature	Benefit
Voice messaging	• Integrated voicemail and Automated Attendant solution using Cisco Unity Express • Complete yet concise telephony user interface (TUI) tutorial: Takes the user step by step through the mailbox setup process, minimizing the need for administrator assistance, saving time and money • Full range of commonly used voicemail features • Comprehensive voicemail feature set: Replying, forwarding, saving messages; message tagging for privacy or urgency; alternate greetings; pause, fast forward, and rewind; and envelope information • Networking: Voice Profile for Internet Mail (VPIM) protocol to communicate with other Cisco messaging platforms • Distribution lists and broadcast messages • Public and private distribution list function and broadcast messaging capability • General-delivery mailboxes (GDMs) • Multiple GDM voicemail boxes for designated team members • Ability for subscribers to recover a message if it is inadvertently deleted • Ability to share the user interface, menu structure, and commands with other Cisco voice messaging products • Personal operator: Configurable alternate telephone number (per voice mailbox) for "zero out" option • Voicemail access using IMAP integration with Microsoft Outlook, Outlook Express, or Lotus Notes • Cisco Unified IP phone voicemail and mailbox settings access using Cisco Unity Express VoiceView Express XML application • Integrated Messaging Support for Apple Macintosh users allows Microsoft Entourage 2004 and 2008 as an IMAP client • PINless login to voicemail enables users to login to a voice mailbox from either the telephony user interface or through VoiceView Express without entering a PIN • Record live conversations and store the recording as a message in a mailbox • Reply to a voice message by establishing a phone call with the person that left a voicemail • For additional information about voicemail features, please visit http://www.cisco.com/go/cue
Automated Attendant	• Up to five Automated Attendants per system • Standard dial-by-name and dial-by-extension Automated Attendant • Holiday schedules and calendar • Business-hours schedule • Script editor: Graphical scripting tool that creates customized Automated Attendant menu flows • Support for time-of-day and day-of-week routing • Unlimited menu items and unlimited nesting • Administration through telephony • Ability to record Automated Attendant prompts from phone or computer • Capability to create and manage broadcast messages • Ability to record spoken names for remote users • Emergency alternate greeting: Alerts callers to temporary schedule changes due to snow, holidays, etc. • For additional information about Automated Attendant features, please visit http://www.cisco.com/go/cue
Integrated applications	• Single Number Reach capabilities • XML application on IP phone provides time and attendance capabilities (8 users maximum)
Configuration and management	• Preconfigured to allow for connection of phones and PSTN lines to start using system upon startup • Automatic assignment of extensions and voicemail boxes for phones for ease of deployment and future phone additions • Extension assigner that allows replacement of phones using simple, easy-to-follow voice prompts • Windows GUI-based Cisco Configuration Assistant for complete system setup; customization and management included • Simple Network Management Protocol (SNMP) support with Cisco Unified Operations Manager or third-party management consoles • For additional information about Cisco Configuration Assistant, please visit http://www.cisco.com/go/configassist. For additional information about Cisco Monitor Director and Cisco Monitor Manager, please visit http://www.cisco.com/go/sbnm

Network Security Features and Benefits

Security is a fundamental part of the Cisco Unified Communications 520 Series. Table 3 summarizes the security features.

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Table 3.   Secure Networking Features and Benefits

Feature	Benefit
Cisco IOS Firewall	Sophisticated security and policy enforcement provides features such as stateful, application-based filtering (context-based access control [CBAC]), per-user authentication and authorization, real-time alerts, and transparent firewall.
Cisco Easy VPN	The Cisco Unified Communications 520 Series eases administration and management of point-to-point VPNs by actively pushing new security policies from a single head end to remote sites. Note: Maximum of 10 VPN tunnels are supported on the platform.
Standard 802.1X support on integrated switching	Standard 802.1x applications require valid access credentials that make unauthorized access to protected information resources and deployment of unsecured wireless access points more difficult.
Network Address Translation (NAT)	NAT simplifies and reduces costs associated with global IP address allocation and management. Only a single registered IP address is required to support all users on an entire LAN infrastructure.

Wireless Support Features and Benefits

The 8- and 16-user models of the Cisco Unified Communications 520 Series support an optional integrated WLAN access point for highly secure WLAN connectivity. The e 24-, 32-, 48-user, and 64-user upgraded models do not support an optional integrated WLAN access point. These models can use the optional external Cisco AP 541N clustering wireless access point.

Note: Table 4 summarizes the wireless features.

Table 4.   Wireless Features and Benefits

Feature	Benefit
WLAN connectivity	The 802.11b/g integrated access point (available only on the 8- and 16-user Cisco Unified Communications 520 Series models) can be used to provide integrated WLAN connectivity to mobile clients - voice and data - resulting in mobility and enhanced productivity for users. The integrated 802.11b/g access point in the Cisco Unified Communications 520 Series supports up to 54-Mbps connections. Cordless WLAN IP phones allow users to be mobile and more productive.
Enhanced security	Enhanced security is provided with support for Wi-Fi Protected Access (WPA and WPA2), including authentication with 802.1x and Cisco LEAP, Protected Extensible Authentication Protocol (PEAP), dynamic Wired Equivalent Privacy (WEP), or static WEP. WLAN VLANs and 802.1q/e are also supported; these features prioritize voice and video traffic with queuing. Employee and guest WLAN access is through separate VLANs.

For additional flexibility and easy deployment, the Cisco Unified Communications 520 Series can be deployed without network cabling, by using its integrated or external wireless access points and the built-in wireless client on the Cisco Small Business Pro IP Phone SPA 525G.

Summary

The Cisco Unified Communications 520 Series for Small Business is a simple, smart, and affordable solution designed specifically for growing businesses with 8 to 64 phones. It integrates industry-leading, business-class, proven unified communications technologies (voice, data, video, security, and wireless) into one platform and facilitates integration with commonly used desktop applications such as Microsoft Outlook and Outlook Express, IBM Lotus Notes, and CRM software. Functions include Automated Attendant and voicemail, PSTN and Internet connectivity, and analog phone and fax machine support. A wide array of IP phones are supported by PoE ports. The Cisco Unified Communications 520 Series also provides the capability for voice, video, and data networking and allows business owners and employees to be securely connected to the office while they are traveling or working from their home offices.

Product Hardware Specifications

Table 5 lists the Cisco Unified Communications 520 Series chassis specifications.

Table 5. Specifications of Cisco Unified Communications 520 Series

Cisco Unified Communications 520 Series	Cisco Unified Communications 520 System (8- and 16-user configuration)	Cisco Unified Communications 520 System (24-, 32- 48-user, and 64-user upgraded configuration)
Packaging type	Desktop or wall-mount	Rack-mount
Product Architecture		
DRAM	• Cisco IOS Software: 256 MB • Voice messaging: 512 MB	
Compact flash memory	• Cisco IOS Software: 128 MB • Voice messaging: 1 GB Compact Flash	
Onboard Ethernet ports	• Eight 10-/100-Mbps LAN • One 10/100 WAN uplink • One 10/100 Ethernet expansion port	
Voice expansion slots	1 voice interface card (VIC) slot to support Cisco VIC modules listed in Table 7 for voice and fax	
MOH	Single 3.5-mm audio port	
Integrated hardware-based encryption	Yes	
Integrated inline PoE ports	8 built-in PoE ports	
FXS and DID ports	4 built-in FXS ports (DID is available via additional module listed in Table 7)	
PSTN interfaces (FXO, BRI or T1/E1)	4 to 12 FXO ports or 2 to 6 BRI ports (VIC slot can be used to add interfaces in some configurations) Fixed 48-user configuration is also available with integrated T1/E1 interface Accessory T1/E1 VWIC interface card: Available for use in the 8-, 16-, 24- and 32-user UC520 models (VIC slot can be used to add this T1/E1 interface card)	
Console port (up to 115.2 kbps)	1	
Voicemail ports	6 ports for voicemail and Automated Attendant	
Deployment options	Desktop, wall-mount, and rack-mount (rack-mount requires an optional rack-mount bracket)	19-in. (48.26-cm) rack-mount
Power Requirements		
Power supply	External	Internal
AC input voltage	100 to 240 VAC	100 to 240 VAC
AC input frequency	50 to 60 Hz	50 to 60 Hz
AC input current	4 to 2A (100 to 240V)	3 to 1.5A (100 to 240V)
AC input surge current	50 to 100A (100 to 240V)	30 to 60A (100 to 240V)
Maximum inline power distribution	82W	82W
Power dissipation: AC without IP phone support	80W 90W (including external adapter)	95W
Power dissipation: AC with IP phone support for IP phones	175W 180W (including external adapter)	200W
Environmental Specifications		
Operating temperature	32°to 104°F (0°to 40°C)	32°to 104°F (0°to 40°C)
Operating humidity	10% to 85% noncondensing operating; 5 to 95 noncondensing, nonoperating	
Nonoperating temperature	4°to 149°F (-20°to 65°C)	4°to 149°F (-20°to 65° C)
Operation altitude	• 104°F (40°C) at sea level • 87.8°F (31°C) at 6,000 ft (1800m) • 77°F (25°C) at 10,000 ft (3000m) • 34.7°F (1.5°C) per 1,000 ft	• 104°F (40°C) at sea level • 87.8°F (31°C) at 6,000 ft (1800m) • 77 °F (25°C) at 10,000 ft (3000m) • 34.7°F (1.5°C) per 1,000 ft

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Cisco Unified Communications 520 Series	Cisco Unified Communications 520 System (8- and 16-user configuration)	Cisco Unified Communications 520 System (24-, 32-48-user, and 64-user upgraded configuration)
Dimensions (H x W x D)	2.625 x 10.5 x 11.05 in. (6.67 x 26.67 x 28.07 cm)	3.5 x 17.5 x 14 in. (8.89 x 44.45 x 35.56 cm)
Power supply dimensions (H x W x D)	1.7 x 4 x 7.5 in. (4.3 x 10.16 x 19.05 cm)	Internal power supply
Rack height	1.5 rack unit (RU)	2Rus
Weight (fully configured)	8 lb (3.63 kg)	14.5 lb (6.58 kg)
Power supply weight	3 lb (1.36 kg)	Internal
Noise level (minimum and maximum)	Normal operating temperature: <78℉ (25.6℃): 34 dBA ->78℉ (25.6℃) through <104℉ (40℃): 37 dBA ->104℉ (40℃): 42 dBA	Normal operating temperature: <90℉ (32.2℃): 44 dBA 53 dBA (at maximum fan speed)
Regulatory Compliance		
Safety	• IEC 60950-1 • AS/NZS 60950.1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • UL 60950-1	
Immunity	• EN 55024 • EN 300-386 • EN 61000-6-2 • EN 50082-1 • EN 55024 (CISPR 24)	
EMC	• FCC Part 15, ICES-003 • EN55022, CISPR 22 • AS/NZS • CNS13438 • VCCI V-3 • EN 55024 • EN 300-386 • EN 61000-3-2 • EN 61000-3-3 • EN 50082-1 • EN 55024 (CISPR 24) • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-8 • EN 61000-4-11 • EN 61000-6-2	

Cisco Unified Communications 520 Series	Cisco Unified Communications 520 System (8- and 16-user configuration)	Cisco Unified Communications 520 System (24-, 32- 48-user, and 64-user upgraded configuration)
TELCOM*	• FXS/DID • TIA-968-A3 • CS-03 Part I • ACIF S002 • ACIF S003 • ANZ PTC200 • ISDN BRI S/T (voice and data BC) • TIA-968-A3 • CS-03 Part VI • TBR3 • ACIF S031 • ANZ PTC200 • MPMHAPT Japan Digital • FXO • TIA-968-A3 • CS-03 Part I • TBR21 • MPMHAPT Japan Analog • ACIF S002 • ACIF S003 • ACIF S004 • ANZ PTC200 • MOH interface • ACIF S038 • ACIF S004 • TIA-464C	

Modular Support

Table 6 lists available modules and interface cards supported in the open slot.

Table 6.   Modules and Interface Cards Supported in the Open Slot

Feature	Benefit
VIC-4FXS/DID, VIC3-4FXS/DID	4-port VIC-FXS/DID (note that VIC3-4FXS/DID requires Cisco IOS Software release 12.4(20)T or later)
VIC2-FXS	2-port VIC-FXS
VIC2-2FXO	2-port VIC-FXO (universal)
VIC3-2FXS/DID	2-port VIC-FXS/DID (note that VIC3-2FXS/DID requires Cisco IOS Software release 12.4(20)T or later)
VIC2-4FXO	4-port VIC-FXO (universal)
VIC2-2BRI-NT/TE	2-port VIC card-BRI (NT and TE)
VWIC2-1MFT-T1/E1	1-port VWIC-T1/E1 for voice (ISDN PRI and CAS) - data is not supported

WLAN Specifications

Table 7 lists the WLAN specifications of the Cisco Unified Communications 520 Series

Table 7.   WLAN Specifications

Feature	Description
WLAN hardware	• 802.11b/g • Automatic rate selection for 802.11b/g • RP-TNC connectors for field-replaceable external antennas (antenna options for extended coverage) • Antenna diversity • Indoor range: 1 Mbps at 320 ft (97.54m) • Wireless Ethernet Compatibility Alliance (WECA) interoperability • Default antenna gain: 2.2 dBi

Feature	Description
WLAN software	• Options to maximize throughput or maximize range • Software-configurable transmit power • Wireless Multimedia (WMM) certification • Service Set Identifier (SSID) globalization
WLAN security	• 802.1X • 802.11e • WPA and AES (WPA2) • EAP authentication: Cisco LEAP, PEAP, and Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) • Static and dynamic WEP • Temporal Key Integrity Protocol Simple Security Network (TKIP/SSN) encryption • MAC authentication and filter • User database for survivable local authentication using LEAP and EAP-FAST • Configurable limit to the number of wireless clients • Configurable RADIUS accounting for wireless clients • Preshared keys (PSKs) • Workgroup Bridge Association
SSIDs and Service Set Identification List (SSIDL)	3
Wireless VLANs	3
Encrypted wireless VLANs	3
Multiple Basic SSIDs (MBSSIDs)	1

Localization

The Cisco Unified Communications 520 Series supports the localization available on Cisco Unified Communications Manager Express 7.0 and Cisco Unity Express 3.2. Table 8 summarizes the localization supported on the platform.

Table 8. Localization Support

Language	Variation	Phone Prompts, Cadences, and Network Tones	Voicemail Prompts
English	United States	Yes	Yes
German		Yes	Yes
French	European	Yes	Yes
Spanish	European	Yes	Yes
Italian		Yes	Yes
Portuguese	Brazilian	No	Yes
Spanish	Latin American	No	Yes
Danish		Yes	Yes
English	British	Yes	Yes
Japanese		Yes	Yes
Spanish	Mexican	No	Yes
French	Canadian	No	Yes
Chinese	Mandarin	Yes	Yes
Korean		Yes	Yes
Arabic		No	Yes
Dutch		No	Yes
Russian		No	Yes
Swedish		No	Yes
Turkish		No	Yes

Note: Additional languages may be supported on Cisco Unified IP Phones; for more information, visit: http://www.cisco.com/go/ipc.

Ordering Information

To order, find a Cisco partner near you: http://www.cisco.com/go/partnerlocator.

Table 9. UC 520 Ordering Information

Part Number	Description
UC520-8U-4FXO-K9	• 8-user configuration with 4 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail and Cisco Unified IP Phones
UC520W-8U-4FXO-K9	• 8-user configuration with 4 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion, Integrated Wireless • Feature licenses for call control, voicemail and Cisco Unified IP Phones
UC520-8U-2BRI-K9	• 8-user configuration with 2 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail and Cisco Unified IP Phones
UC520W-8U-2BRI-K9	• 8-user configuration with 2 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion, integrated wireless • Feature licenses for call control, voicemail, and Cisco Unified IP Phones
UC520-16U-4FXO-K9	• 16-user configuration with 4 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires an 8-port Cisco Catalyst Express 520 switch
UC520W-16U-4FXO-K9	• 16-user configuration with 4 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion, integrated wireless • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires an 8-port Cisco Catalyst Express 520 switch
UC520-16U-2BRI-K9	• 16-user configuration with 2 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires an 8-port Cisco Catalyst Express 520 switch
UC520W-16U-2BRI-K9	• 16-user configuration with 2 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion, integrated wireless • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires an 8-port Cisco Catalyst Express 520 switch
UC520-24U-8FXO-K9	• 24-user configuration with 8 PSTN (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for user configurations of call control, voicemail, and Cisco Unified IP Phones Note: requires a 24-port Cisco Catalyst Express 520 switch
UC520-24U-4BRI-K9	• 24-user configuration with 4 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires a 24-port Cisco Catalyst Express 520 switch
UC520-32U-8FXO-K9	• 32-user configuration with 8 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for user configurations of call control, voicemail, and Cisco Unified IP Phones Note: requires a 24-port Cisco Catalyst Express 520 switch
UC520-32U-4BRI-K9	• 32-user configuration with 4 BRI trunks (BRI), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for call control, voicemail, and Cisco Unified IP Phones Note: requires a 24-port Cisco Catalyst Express 520 switch
UC520-48U-12FXO-K9	• 48-user configuration with 12 PSTN trunks (FXO), 4 analog ports (FXS), 8 PoE ports • Feature licenses for user configurations of call control, voicemail, and Cisco Unified IP Phones Note: requires two 24-port Cisco Catalyst Express 520 switches
UC520-48U-6BRI-K9	• 48-user configuration with 6 BRI trunks (BRI), 4 Analog ports (FXS), 8 PoE ports • Feature licenses for call control, voicemail and Cisco Unified IP Phones Note: requires two twenty-four (24) port Cisco Catalyst Express 520 switch
UC520-48U-T/E/F-K9	• 48-user configuration with a T1/E1 interface, 4 additional PSTN trunk ports (FXO), 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for user configurations of call control, voicemail, and Cisco Unified IP Phones Note: requires two 24-port Cisco Catalyst Express 520 switches

Part Number	Description
UC520-48U-T/E/B-K9	• 48-user configuration with a T1/E1 interface, 2 additional BRI trunk ports, 4 analog ports (FXS), 8 PoE ports, 1 VIC slot for expansion • Feature licenses for user configurations of call control, voicemail, and Cisco Unified IP Phones Note: requires two 24-port Cisco Catalyst Express 520 switches

License-based upgrades are now orderable for the Unified Communications 520 Series (Table 10). This allows upgrades from the 8-user, desktop form factor version to the 16-user version. In addition, the 24-user system, available in the 19-inch rack-mount form factor, can be upgraded to either a 32- or 48-user system. Users can upgrade to the 64-user system from a 48-user system. Upgrades to a 64-user system from either a 24- or 32-user system are not available.

Table 10.   License-Based Upgrades

Part Number	Description
SL-UC520-16UPG=	Software license upgrade from 8 to 16 users
SL-UC520-32UPG=	Software license upgrade from 24 to 32 users
SL-UC520-24-48UPG=	Software license upgrade from 24 to 48 users
SL-UC520-48UPG=	Software license upgrade from 32 to 48 users
SL-UC520-64UPG=	Software license upgrade from 48 to 64 users

Note: Software upgrades require Cisco IOS Software Release XW6 and above on the Cisco Unified Communications 520 Series and Cisco Configuration Assistant 1.5 and above. The 64-user system upgrade requires Cisco IOS Software Release XW9 and above on the Unified Communications 520 Series and Cisco Configuration Assistant 1.8 and above.

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Limited 1-Year Hardware Warranty

For details about the Cisco Unified Communications 520 Series limited 1-year hardware warranty, visit: http://www.cisco.com/go/warranty.

For More Information

For more information about the Cisco Unified Communications 520 Series, visit: http://www.cisco.com/go/uc500 or contact your local Cisco account representative.

Cisco partners can also visit: http://www.cisco.com/web/partners/sell/smb/products/sbcs.html.

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