



# Cisco Smart Business Communications System Setup

Version 1.2



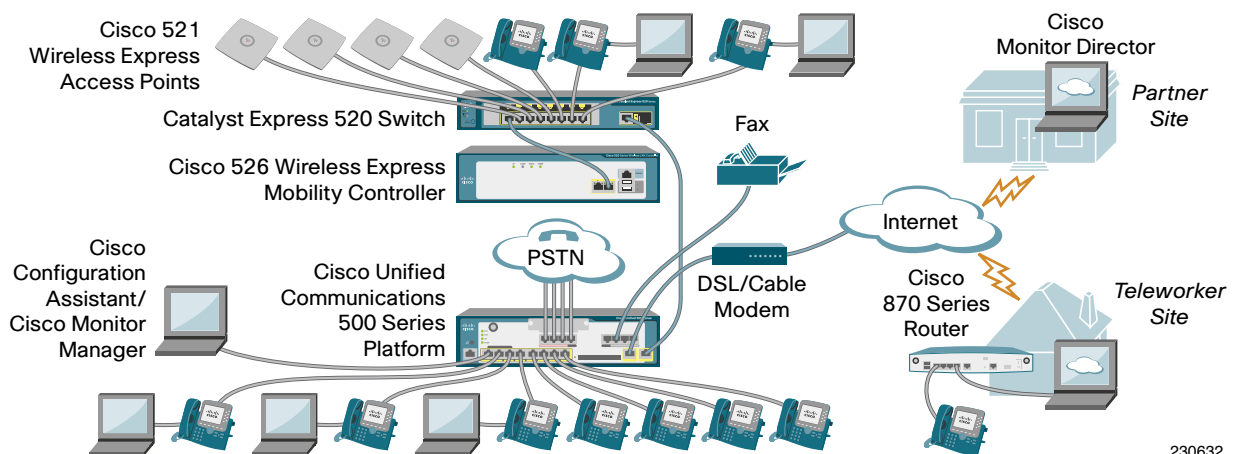
# The Smart Choice for Small Business

Small- and medium-sized businesses are looking for reasonably priced products and services to meet their growing communications needs. With the **Cisco Smart Business Communications System**, you can offer your small- and medium-sized business customers:

- An affordable, complete portfolio of Cisco Unified Communications products that interoperate seamlessly to provide secure voice, video, mobility, and data networking
- Access to the right mix of key communications, productivity, and business operations applications

This versatile solution supports desktop-mounted deployments of up to 16 voice users (as shown here) or rack-mounted deployments of up to 48 voice users. In addition, the system can support wired and wireless access for up to 250 users. The full system comprises multiple components:

- **Cisco Unified Communications 500 Series for Small Business (Cisco Unified Communications 500 Series)** — IP telephony solution that provides an integrated voice-messaging system and automated attendant, eight Power-over-Ethernet (PoE) ports for wired Cisco Unified IP Phone and PC connections, and wireless connectivity through an integrated wireless access point option. Supports public switched telephone network (PSTN) trunks, IP trunks, and local analog devices. Enables data, security, and wireless services for up to two teleworkers.
- **Cisco Catalyst Express 520 Switch** — Enables the number of voice and data users to be increased by providing additional PoE ports for wired and wireless Cisco phones, Wireless Express Access Points, and PCs. The desktop model provides 8 additional PoE ports while the rack-mount models provide up to 24 additional PoE ports.
- **Cisco Mobility Express Solution**
  - *Cisco 500 Series Wireless Express Access Points* — Wireless 802.11g access points that are available in two modes of operation: standalone-mode and controller-mode Cisco 521 Wireless Access Points (AP521s). Controller-mode AP521s work only with the Cisco 526 Wireless Express Mobility Controller (WLC526).
  - *Cisco 500 Series Wireless Express Mobility Controller* — Controls and automatically configures the controller-mode AP521s. Provides a platform for mobility services such as secure guest access, voice over WLAN, and optimized radio coverage.
- **System Management**
  - *Cisco Configuration Assistant* — Simplifies the task of configuring, deploying, and administering Cisco network solutions, improves network security and performance, and substantially reduces the time needed for network deployment and configuration. Cisco Smart Assist features help enable plug-and-play functionality, reducing the time needed to set up the devices and applications in the network. Some examples of features include automatic discovery of supported devices, firewall activation with a default configuration, automatic phone extension assignments, and password and VLAN synchronization.
  - *Cisco Monitor Manager and Cisco Monitor Director* — Deployed at your customer's main site, Cisco Monitor Manager actively monitors key device parameters on voice and data networks serving 5 to 250 users. Cisco Monitor Director, a comprehensive management application that is deployed at your site (the partner site), works with Cisco Monitor Manager to provide your customers with around-the-clock, active voice and data network management support.





# Installation Checklist

This document guides you, as a Cisco partner, through the initial desktop installation of the full Smart Business Communications System. The ease of use and the level of preconfiguration make this system easy to deploy, operate, and manage, with expansion capabilities to support business growth. A typical installation involves some or all of the following activities:

## ■ Determining the dial plan settings for deployment: PBX or key operation mode.

- *Single-site PBX* — PBX mode is set as the default. Most settings are preconfigured, and voice connectivity is provided through the PSTN, using the line interface Foreign Exchange Office (FXO) ports. A DSL or cable modem is used for Internet access.
- *Single-site key system* — Key system square mode and some default settings need to be changed. Voice connectivity is provided through the PSTN, using the line interface (FXO ports). A DSL or cable modem is used for Internet access.
- *Session Initiation Protocol (SIP) trunk configuration*—A service provider supplies PSTN access to the phones, using the VoIP/SIP protocol through the Internet connection.

## ■ Determining wireless network options.

- *All-in-one architecture* — Single integrated access point (factory-installed access point option in the desktop model of the Cisco Unified Communications 500 Series platform) provides Wi-Fi Protected Access (WPA/WPA2) and multiple service set identifiers (SSIDs). This single integrated access point cannot be upgraded to a controller-based architecture. For broader coverage, two Wireless Express Access Points can be deployed in a standalone mode in addition to the integrated access point.
- *Standalone architecture* — Up to three standalone-mode AP521s can be deployed and managed by Cisco Configuration Assistant.
- *Controller-based architecture* — Up to 12 controller-mode Cisco 521 Lightweight Wireless Access Points (LAP521s) can be deployed (6 LAP521s per WLC526 and up to 2 WLC526s per network) for advanced wireless coverage.

## ■ Determining remote monitoring options (Cisco Monitor Manager and Cisco Monitor Director).

- A 60-day evaluation version of Cisco Monitor Manager and Cisco Monitor Director can be downloaded from Cisco.com at <http://www.cisco.com/go/sbnm>. Launch and log in to Cisco.com. If you are not already registered with Cisco.com, then register now. The evaluation version of Cisco Monitor Manager can monitor up to 25 network devices and 48 Cisco Unified IP Phones. The evaluation version of Cisco Monitor Director can monitor up to 5 customers.

## ■ Ensuring that PC prerequisites are met.

- *Cisco Configuration Assistant* — Installs on PC with Pentium III–based IBM PC or compatible, with 512 MB of DRAM (1 GB of DRAM is recommended); minimum screen resolution of 1024x768; either Windows XP Service Pack 1 or later, or Windows 2000 (Service Pack 3 or later).
- *Cisco Monitor Manager* — Installs on PC with 40 GB of disk space recommended, 1 GB of RAM, Intel Pentium IV (1.2 GHz or greater) or compatible, and Windows XP Professional Service Pack 2.
- *Cisco Monitor Director* — Installs on PC with 60 GB of disk space recommended, 2 GB of RAM, Intel Pentium IV (3 GHz or greater) or compatible. Requires Windows XP Professional Service Pack 2 or Windows 2003 Server (Service Pack 1 or later).

## ■ Consulting the appropriate product documentation for the default username and password of each device that you plan to install. Also see the product documentation for safety information and for wall- or rack-mounting instructions.

## ■ Collecting ISP information and SIP trunk service provider information.

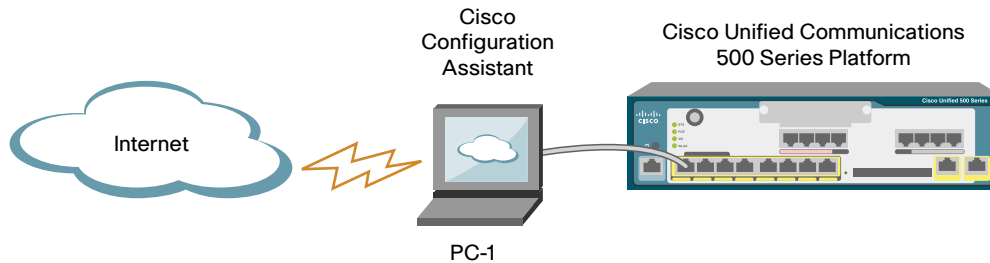
## ■ Downloading the latest version of this document from Cisco.com at <http://www.cisco.com/go/sbcs>.

## ■ Performing an initial installation of the full Cisco Smart Business Communications System.

**Note:** We strongly recommend that you use the factory default settings for the initial installation whenever possible. After you verify that the initial installation is working properly, you can use Cisco Configuration Assistant to easily change the default settings. Use a Category 5 cable with RJ-45 connections to connect the devices in a Smart Business Communications System, unless specified otherwise.

# 1

## Configure the UC500 Series Platform



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The UC500 can be mounted on a desktop, on a wall, or in a rack. This document describes a desktop mounting (on a desktop, table, or shelf). For wall- or rack-mounting instructions, see the UC500 product documentation.

**Note:** Throughout the rest of this document, the term “UC500” refers to the Cisco Unified Communications 500 Series platform.

This document assumes that PC-1, the PC that is running Cisco Configuration Assistant and that will be used to perform the initial installation, is connected directly to the UC500. However, Cisco Configuration Assistant can be run on a PC that is connected to the UC500 through a VPN connection, if desired.

- 1 Unpack the UC500, and attach the four rubber pads to the bottom.
- 2 Place the UC500 on a desktop, table, or shelf.
- 3 Power up the UC500.
- 4 Download a copy of Cisco Configuration Assistant from Cisco.com at <http://www.cisco.com/go/configassist>.

**Note:** If Internet access is not available, use the Smart Business Communications System CD to install Cisco Configuration Assistant on the PC that will be used for the initial installation of the Smart Business Communications System.

- 5 Install Cisco Configuration Assistant on PC-1. Follow the prompts. When the setup is complete, click **Finish**.
- 6 Launch Cisco Configuration Assistant by clicking the desktop icon.
- 7 Connect PC-1 to one of the PoE ports on the UC500, as shown. Verify that PC-1 is set to use DHCP to obtain its IP address.

### 8 From Cisco Configuration Assistant:

- Choose **Create Community**, and click **OK**.
- From the Create Community window, enter the community name and the IP address 192.168.10.1. Click **Start**. When the device is discovered, click **OK**.
- Use the default system administrator username and password for the UC500.
- Use the default configuration settings for the rest of the installation.

The following are preconfigured:

- Network and device parameters
- Internet connection (DHCP)
- Firewall and Network Address Translation (NAT)

**Note:** If you are installing a single-site key system configuration, change the Voice System Type setting from PBX to Key System Configuration. Choose **Telephony > Voice > Device Parameters**.

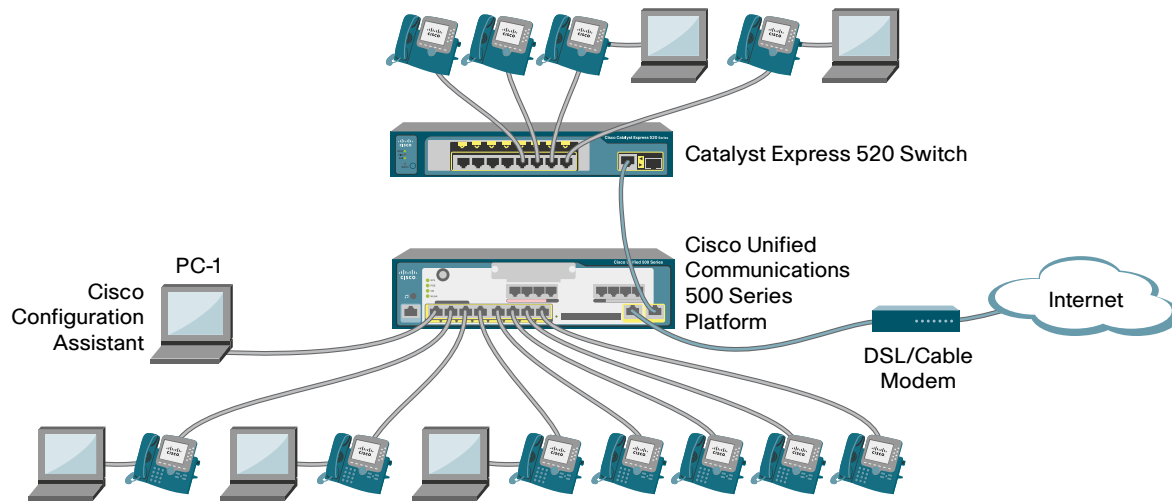
- 9 Click **OK** to save the configuration changes to the UC500. The system indicates when the configuration is complete.

- 10 From Cisco Configuration Assistant, verify that the UC500 appears in the Topology view.

**Tip!** Throughout these installation procedures, you are instructed to verify that the Topology view includes the new device. If the Topology view does not include the new device, then choose **Application Menu > Refresh** to refresh the Topology view. For more information about Cisco Configuration Assistant, see the online help.

# 2

## Set Up Phone and PC LAN Connections and WAN Connection



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### Set Up Cisco Phone and PC LAN Connections

The CE520 can be mounted on a desktop, on a wall, or in a rack. This document describes a desktop mounting (on a desktop, table, or shelf). For wall- or rack-mounting instructions, see the CE520 product documentation.

**Note:** Throughout the rest of this document, the terms “CE520” and “Cisco phone” refer to the Cisco Catalyst Express 520 Switch and a Cisco Unified IP Phone, respectively. The Smart Business Communications System supports all Cisco Unified IP Phones.

- 1 Connect PC-1 to one of the PoE ports on the UC500, as shown.
- 2 Attach the four rubber pads to the recessed areas on the bottom of the CE520. Place the CE520 on a desktop, table, or shelf.
- 3 Connect the CE520 uplink port to the UC500 expansion port, as shown.
- 4 Connect the AC power cord, and power up the CE520.
- 5 Launch Cisco Configuration Assistant, and verify that the installed CE520 appears in the Topology view.
- 6 In the Topology view, right-click the **CE520** icon, and choose **Add to community**.
- 7 If prompted, use the default system administration username and password for the CE520.
- 8 Connect the Cisco phones to the PoE ports on the UC500 and CE520, as shown.
- 9 From Cisco Configuration Assistant, verify that the installed Cisco phones appear in the Topology view.
- 10 Test the extensions by calling another Cisco phone that is connected to the UC500 or CE520.
- 11 Test the PC LAN connection. For example, from PC-1 try to access an intranet page.

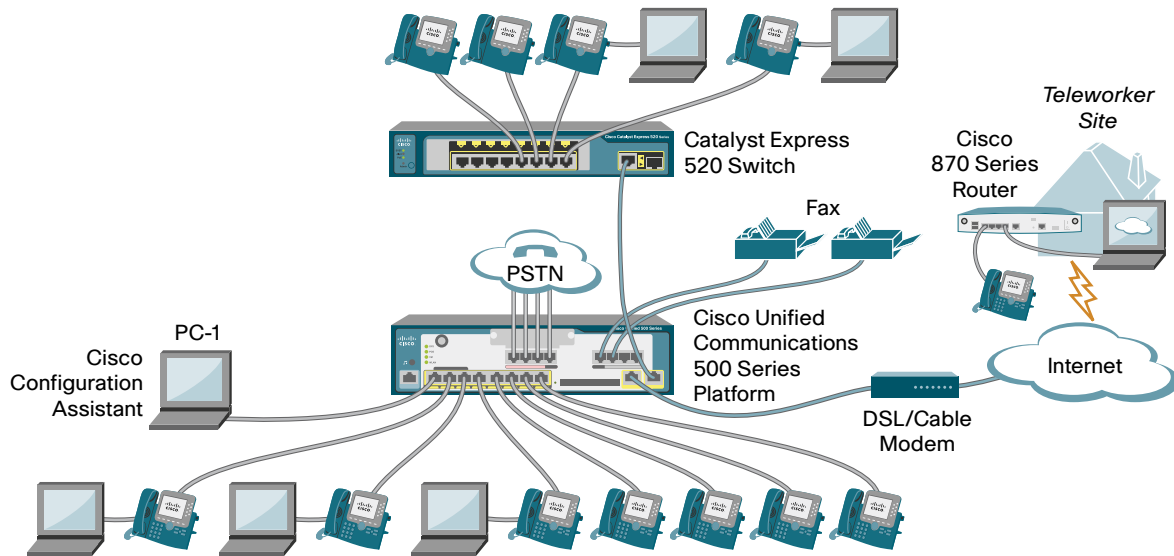
- 12 Use the wired Cisco phone connections to provide wired connectivity for end-user PCs. Connect the Ethernet port on the end-user PC to the 10/100 PC port on the back panel of the installed Cisco phone. You can also use PC-1 to run Cisco Monitor Manager, as described on page 9.

### Set Up WAN Connection

- 1 At the main site, connect the WAN port on the UC500 to the DSL or cable modem.
- 2 In the DHCP Server window, edit the data and phone pools to reflect the DNS server IP address that your service provider has assigned you. To make this change, choose **Configure > DHCP Server**, select the data pool, and click **Modify**.
- 3 If the ISP requires a WAN configuration other than DHCP, then you must use Cisco Configuration Assistant to change the WAN settings on the UC500. (The ISP provides all information required for the WAN Parameters window.)
  - From Cisco Configuration Assistant, in the **Configure > Internet Connection** window, choose **Interface FastEthernet0/0**, and click **Modify**.
  - If PPPoE, check the **PPPoE** check box, and enter the username and password provided by the ISP.
  - If static IP address, choose **Static IP**, and enter the Internet IP address, subnet mask, and default gateway address.
- 4 From PC-1, test the Internet and WAN link by accessing an Internet page.

# 3

## Set Up PSTN or SIP Trunks and Teleworker Connections



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### Setup for FXO or BRI Lines

This document describes how to set up a deployment that uses FXO lines and a UC500 desktop model. The UC500 also has models with Basic-Rate Interface (BRI) ports instead of FXO ports. For instructions on how to set up a deployment that uses BRI lines or a rack-mount model of the UC500, see the UC500 product documentation.

- 1 To connect a PSTN line or a station interface on a PBX, use an RJ-11 cable to connect an FXO port on the UC500 to the PSTN or PBX.
- 2 Use an RJ-11 cable to connect a fax machine to a Foreign Exchange Station (FXS) port on the UC500, as shown.
- 3 Using a cell phone, verify outgoing and incoming calls from the system. When you dial in to the UC500 PSTN numbers, the Auto Attendant picks up the call, and the voice-messaging system greeting is played.
- 4 At the Auto Attendant prompt, verify the FXS connections by dialing the fax extension.

### Setup for SIP Trunking

From Cisco Configuration Assistant, set up SIP trunking.

- In the Topology view, choose **UC500**.
- Click the **Telephone > Voice > SIP Trunk Parameters** tab.
- From the drop-down list, choose your SIP Trunk service provider.

- Enter the fully qualified domain names provided by the SIP Trunk service provider. Enter the SIP proxy domain name. Enter the remaining required information.
- Click **OK** to save the configuration changes to the UC500. The system indicates when the configuration is complete.

**Tip!** All information required in the SIP Parameters window is provided by the SIP Trunk service provider. Although the items required vary according to the service provider, the Service Provider and SIP Proxy fields are mandatory.

The T1 interface on the 48-voice user, UC500 rack-mount model supports an additional option for configuring PSTN links. For more information, see the UC500 product documentation.

### Setup for a Teleworker (Optional)

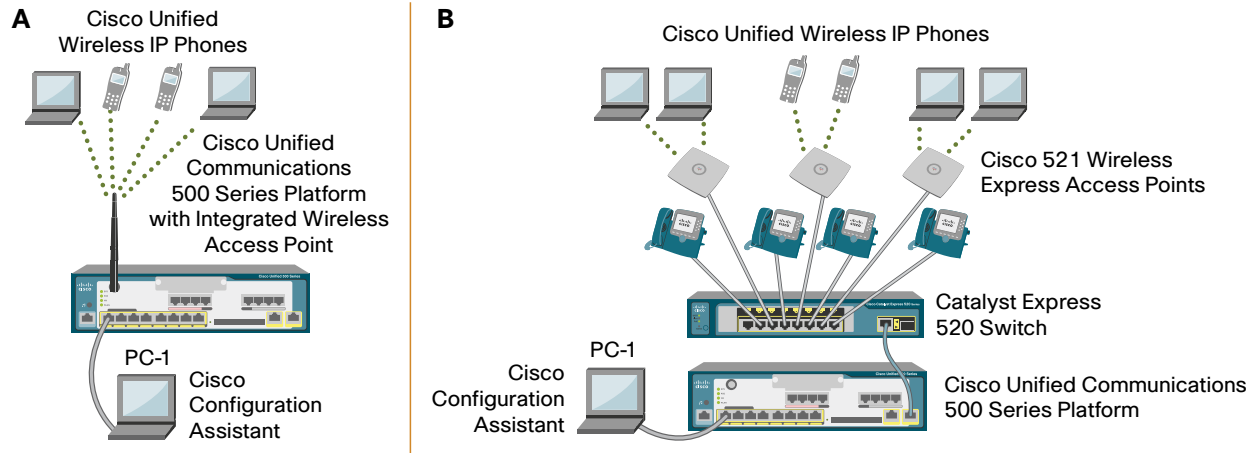
You can use a Cisco 800 Series router (for example, the Cisco 871 router) to set up a teleworker site. For more information on this topic, see “Where to Go from Here” on page 11.

**Note:** Voice extensions for teleworkers are typically deployed as part of a PBX system rather than as part of a key system.



# 4

## Deploy Integrated or Standalone Wireless Access Points



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### Cisco Smart Business Communications System with Wireless Access

To provide wireless access with the UC500:

- Use a single integrated wireless access point for a small coverage area. No additional network hardware is needed for voice and data wireless connectivity. To extend coverage, you can deploy two standalone-mode AP521s in addition to the integrated access point.
- For broader wireless coverage and support of advanced mobility services, such as secure guest access or voice over Wi-Fi, the Cisco Mobility Express Solution can be deployed in a non-integrated standalone or controller-based architecture.

**Note:** The Cisco Mobility Express Solution can be deployed without the UC500 for customers who need increased wireless scalability beyond three access points and want to deploy mobility services. For information about this type of deployment, see the documentation for the Cisco Wireless Express Mobility Controllers.

#### A. Deploy a Single Integrated Wireless Access Point

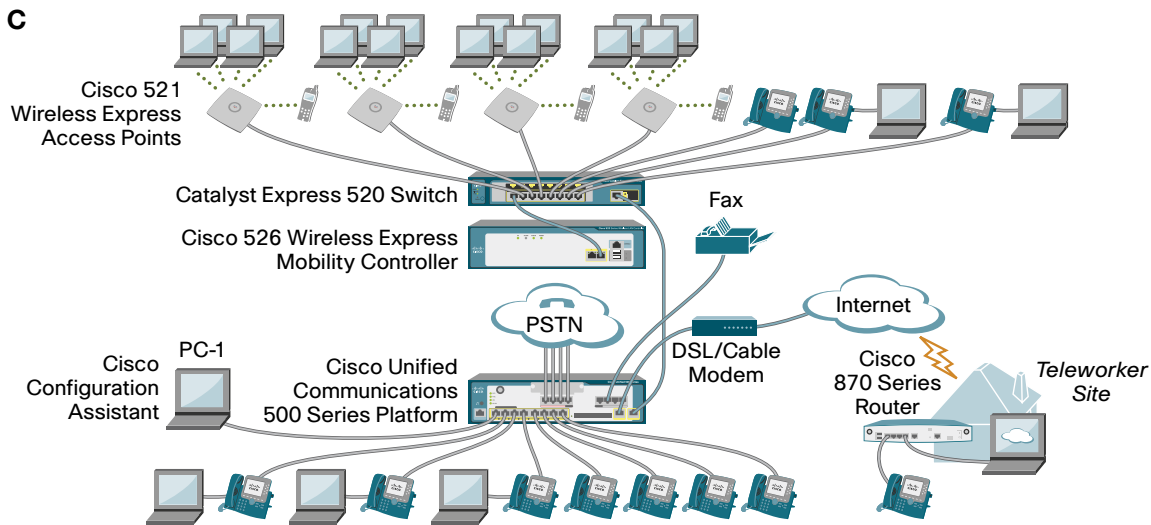
- 1 Connect the swivel-mount dipole antenna to the UC500.
- 2 From Cisco Configuration Assistant, choose **Configure > Wireless > WLANs**, and configure the options in the Secure Wireless window.

#### B. Deploy Cisco Mobility Express Solution in Standalone Mode

In the standalone architecture, you can deploy up to three AP521s and configure them through Cisco Configuration Assistant. You can upgrade these standalone access points into a controller-based architecture later, as desired.

**Tip!** For the standalone-mode AP521, the VLAN should be between 1 and 1000. If you set a native VLAN for the SSID, it should match the native VLAN value set for the switch port to which the AP521 is connected. Also, the IP address of the AP521 should belong to the same native VLAN.

- 1 Verify that a DHCP server is operating on the network. You can use the DHCP server features of the UC500.
- 2 Determine which of the available PoE ports on the CE520 you will connect the first AP521 to. From Cisco Configuration Assistant, change the port role of the designated port to Access Point by choosing **CE520** in the Topology view. Choose **Configure > Smartports**. Then in the displayed Smartports window, assign the designated port a port role of Access Point.
- 3 Connect the AP521 to the designated port to which you just assigned a port role of Access Point.
- 4 In the Topology view, right-click the **AP521** icon, and choose **Add to community** to add the AP521 to the community. Use the default system administration username and password for the AP521.
- 5 From Cisco Configuration Assistant, choose **Configure > Wireless > WLANs**, and create a WLAN. From the displayed WLANs window, specify the desired options for the newly added AP521. To enable the radio on a standalone access point, you must create an SSID and save the configuration. After the radio is enabled, clients that have the same SSID as the access point will associate with that access point and pass traffic.
- 6 Repeat Step 2 through Step 5 for each AP521.



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### C. Deploy Cisco Mobility Express Solution in Controller Mode

When more wireless coverage or the advanced features of Mobility Express, such as secure guest access and fast secure roaming for Voice over WLAN (VoWLAN), are needed, deploy the controller-based architecture. In the controller-based architecture, you can deploy up to 2 controllers and 12 access points (6 LAP521s per controller). If desired, you can deploy the 2 controllers in redundant mode.

**Tip!** By default, the WLC526 management and AP manager interfaces are set to the untagged VLAN (or VLAN 0) and should not be changed. In the Secure Wireless window, the untagged VLAN 0 is displayed as VLAN 1 for consistency with the switch VLAN.

- 1 Verify that a DHCP server is operating on the network. You can use the DHCP server features of the UC500.
- 2 Power up the Cisco 526 Wireless Express Mobility controller (WLC526).
- 3 Connect PC-1 to the controller management port (port 1) of the WLC526.
- 4 From PC-1, launch Cisco Configuration Assistant application in offline mode. From the **Setup** tab, click **Device Setup Wizard**. Choose **WLC526** from the pull-down menu and follow the wizard online instructions. Add the parameters needed to configure the WLC526.
- 5 Power off the WLC526, and disconnect PC-1 from the WLC526. Reconnect PC-1 to a PoE port on the UC500, and launch Cisco Configuration Assistant.
- 6 Determine which of the available PoE ports on the CE520 to connect the WLC526. From

Cisco Configuration Assistant, change the port role of the designated port to Access Point by choosing **CE520** in the Topology view. Choose **Configure > Smartports**. Then in the Smartports window, assign the designated port a port role of Access Point.

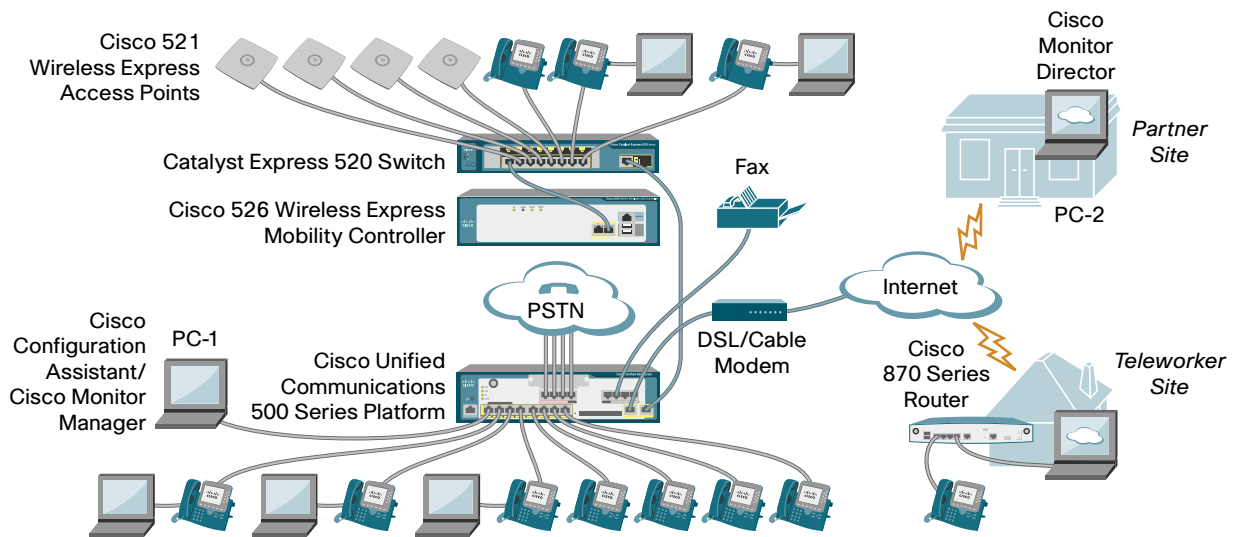
- 7 Connect the WLC526 to the designated port that you just assigned a port role of Access Point, and power up the WLC526.
- 8 In the Topology view, right-click the **WLC526** icon, and choose **Add to community** to add the WLC526 to the community. Use the default system administration username and password for the WLC526. Accept any certificate, if prompted by Cisco Configuration Assistant.
- 9 From Cisco Configuration Assistant, choose **Configure > Wireless > WLANs**, and create a WLAN for the newly added WLC526 device by using the options in the WLANs window.
- 10 On the CE520, install up to six LAP521s:
  - Determine which of the available PoE ports on the CE520 to connect the LAP521. From Cisco Configuration Assistant, change the port role of the designated port to Access Point:
    - In the Topology view, choose **CE520**.
    - Choose **Configure > Smartports**. In the Smartports window, assign the designated port a port role of Access Point.
  - Connect the LAP521 to the designated port that you just assigned a port role of Access Point.

The WLC526 configures the access points automatically. For information about establishing wireless connectivity, see the Release Notes for the WLC526 and LAP521.



# 6

## Deploy Remote Monitoring



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### Install Cisco Monitor Manager

- 1 At the main site, install and launch the Cisco Monitor Manager evaluation software on PC-1.
  - Download a copy of the software from Cisco.com at <http://www.cisco.com/go/sbnm>.
  - Double-click the downloaded Cisco Monitor Manager executable (.exe) file to start the installation.
  - Follow the prompts to install and launch the software.
  - Choose the evaluation version, and click **OK**. Create a user by entering a user ID, password, and customer name. Click **OK**. The Discover Devices window opens.
- 2 Click **Create** to open the Create New Location dialog box. Enter the name and description of a new device location. Then click **OK**.
- 3 Verify that Cisco Monitor Manager is operating properly.
  - In the **Specify a Seed IP Address** field, enter the IP address of the UC500, and click **Start**.
  - If prompted, enter the username and password of the UC500.
  - In the device table, choose **UC500**, and click **OK**.

### Install Cisco Monitor Director

- 1 At your site, make sure that PC-2 can be reached through the Internet on TCP port 443.
- 2 Install and launch the Cisco Monitor Director evaluation software on PC-2.

- Download a copy of the software from Cisco.com at <http://www.cisco.com/go/sbnm>.
- Double-click the downloaded Cisco Monitor Director executable (.exe) file to start the installation.
- Follow the prompts to install the software.
- Open a browser and log in to the dashboard at [https://<server\\_ip\\_address>](https://<server_ip_address>). Choose **Administration > Customer Management**. In the displayed Customer Management window, enter the information about the site at which Cisco Monitor Manager is installed.

### Verify Communication Between Cisco Monitor Manager and Cisco Monitor Director

**Tip!** If you are using Windows XP, and Windows Firewall is enabled, open the port that is used for HTTPS through the firewall so that Cisco Monitor Manager and Cisco Monitor Director can communicate.

- 1 From Cisco Monitor Manager, in the **Administration > Options > Cisco Monitor Director** window, enter information for your Cisco Monitor Director software. Check the **Enable Communication with Cisco Monitor Director** check box. Click **Test**. Make sure a solid green dot appears in the Cisco Monitor Manager status bar.
- 2 From Cisco Monitor Director, in the Customers table in the Administrator dashboard, check the **MM-MD Status** column to verify that communication is enabled.

For additional information, see the online help quick start guides for Cisco Monitor Manager and Cisco Monitor Director.



# Post-Installation Checklist

After you install the Cisco Smart Business Communications System, perform the following activities as needed.

## ■ Use Cisco Configuration Assistant to change the default settings.

- Choose **Configure > Device Properties > Users and Passwords**, and change the default username and password for all the devices.
- Choose **Configure > Device Properties > Hostname**, and change the default hostname for each device.
- Choose **Configure > Device Properties > System Time**, and set the system time zone, the time display, and the NTP servers for the UC500.
- To access the voice system configuration tabs for the UC500, choose **Configure > Telephony > Voice**.
  - In the Device Parameters tab, designate the system message. This message appears on the Cisco Unified IP Phone screens. For example, change the system message to the customer business name.
  - In the Dial Plan/Voice Mail tab, set the number of digits for each Cisco phone extension.
  - In the Voice System Features tab, configure Cisco phone features and intercom.
  - Configure extensions in the User Parameters tab, or build a comma-separated value (.csv) file with names and extension numbers to import into the Cisco Configuration Assistant.
  - In the Network Parameters tab, configure network settings for voice.

**Note:** You perform all of the above tasks from PC-1, the PC that is running Cisco Configuration Assistant.

For more information about Cisco Configuration Assistant, see the online help.

## ■ Perform remote monitoring activities.

- Inform your customer that Cisco Monitor Manager has been installed at the customer's main site. Then show the customer how to use Cisco Monitor Manager.
- Decide whether you want to use Cisco Monitor Director to generate subscription-based reports for your customers. If yes, generate a Network Summary Report, a Performance Summary Report, and an Instant Summary Report to demonstrate the value of these subscription-based reports.

## ■ Enable your customers to make future configuration changes.

If you want your customers to be able to use Cisco Configuration Assistant to make future configuration changes themselves (for example, by adding another Cisco Unified IP Phone), then inform your customers that you have installed Cisco Configuration Assistant on PC-1 and that they can use Cisco Configuration Assistant for future configuration changes.



## Where to Go from Here

Cisco provides a wide range of resources to help you and your customer obtain the full benefits of the Cisco Smart Business Communications System.

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The **Cisco Smart Business Communications System website** provides information and references pertaining to the system, including links to the full documentation set for each component.

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

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The **Cisco Smart Business Communications System Teleworker Setup** document describes how to use a Cisco 800 Series router to set up a teleworker site.

[http://www.cisco.com/en/US/products/ps7293/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html)

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The **Cisco Monitor Manager and Cisco Monitor Director website** provides the links for downloading the evaluation software and product information, including the product benefits to Cisco VAR partners.

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

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The **Cisco Partners website** provides access to a variety of information and tools for Cisco partners.

<http://www.cisco.com/web/partners/index.html>

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The **Cisco Support website** provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies.

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