



# Cisco Smart Business Communications System Setup

Version 1.0



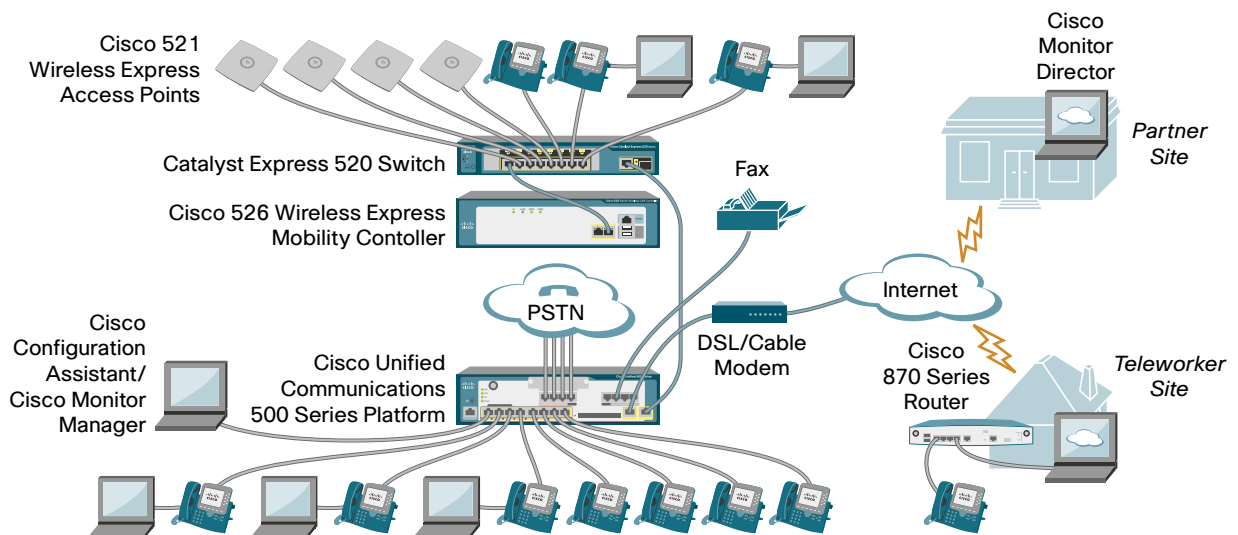
# The Smart Choice for Small Business

Small businesses are looking for appropriately priced products and services to meet their growing communications needs. With the **Cisco Smart Business Communications System**, you can offer your small-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 can be deployed as an 8-voice user system or 16-voice user system and up to 250 data users with wireless access. 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 also provides 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 system to expand to a 16-voice user system by providing 8 additional PoE ports for wired and wireless support.
- **Cisco Mobility Express Solution**
  - *Cisco 500 Series Wireless Express Access Points* — Wireless access points that are available in two modes of operation: standalone-mode Cisco 521 Wireless Access Points and controller-mode Cisco 521 Wireless Access Points. The controller-mode access point works only with the Cisco 526 Wireless Express Mobility Controller.
  - *Cisco 500 Series Wireless Express Mobility Controller* — Controls and automatically configures the controller-mode access points. Retrieves air-monitoring information from the controller-based access points, analyzes the information, and takes the appropriate measure for optimum coverage.
- **System Management**
  - *Cisco Configuration Assistant* — GUI software that simplifies system configuration.
  - *Cisco Smart Assist Features* — By enabling plug-and-play functionality, reduces the time needed to set up the devices and applications in the network. Helps to optimize the network settings. Some Smart Assist features include default configuration to allow automatic discovery of supported devices, PBX configuration on the Cisco Unified Communications 500 Series, firewall activation with a default configuration, auto phone extension assignments, and password and VLAN synchronization for supported system devices.
  - *Cisco Monitor Manager and Cisco Monitor Director* — GUI software for real-time monitoring of the system.





# Installation Checklist

This document guides you, as a Cisco partner, through the initial 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, while providing 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. 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. A DSL or cable modem is used for Internet access.
- *Session Initiation Protocol (SIP) Trunk configuration*—A service provider supplies connection to the phones.

## ■ **Determining wireless network options.**

- *All-in-one architecture* — Single integrated access point (factory-installed access point option within 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 into a controller-based architecture. For a 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 wireless express access points can be deployed to offer extended coverage.
- *Controller-based architecture* — Advanced wireless with up to 12 wireless express access points associated with Wireless Express Mobility Controllers (up to 6 access points per controller). Provides advanced features such as Radio Resource Management, secure wireless guest access, and optimized support for voice over Wi-Fi with roaming and load balancing.

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

- A 30-day evaluation version of Cisco Monitor Manager and Cisco Monitor Director can be downloaded from Cisco.com at <http://www.cisco.com/go/sbnm>. The evaluation version of Cisco Monitor Manager can monitor up to 5 network devices, 5 access points, and 48 Cisco Unified IP Phones. The evaluation version of Cisco Monitor Director can collect data from up to 5 customers.

## ■ **Make sure that PC prerequisites are met.**

- *Cisco Configuration Assistant* — Installs on PC with Pentium III-based IBM PC or compatible, 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 available disk space, 1 GB of RAM, Intel Pentium IV (1.2 GHz or greater) or compatible, and either Windows 2000 Professional Service Pack 4 or Windows XP Professional Service Pack 2.
- *Cisco Monitor Director* — Installs on PC with 40 GB of available disk space, 2 GB of RAM, Intel Pentium IV (3 GHz or greater) or compatible. Also required is Windows 2000 Professional Service Pack 4, Windows XP Professional Service Pack 2, or Windows 2003 Server Service Pack 1, as appropriate.

## ■ **Refer to the appropriate product documentation for safety information and for the default username and password of each device that you plan to install.**

## ■ **Collect ISP information and session initiation protocol (SIP) trunk service provider information.**

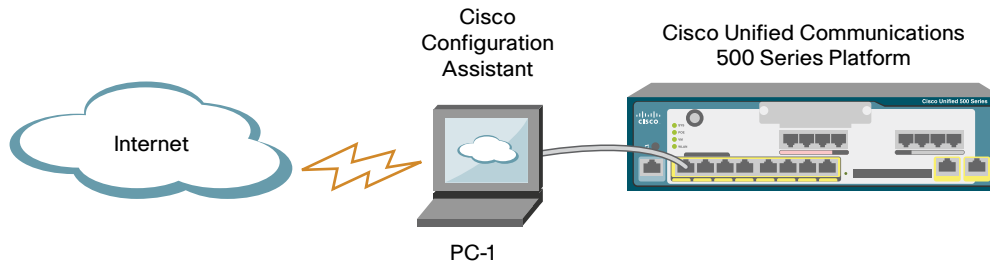
## ■ **Go to <http://www.cisco.com/go/sbcs> to download the latest version of this document from Cisco.com.**

## ■ **Perform 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 the 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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**Note:** Throughout the rest of this document, the terms “UC500” and “CE520” refer to the Cisco Unified Communications 500 Series platform and the Cisco Catalyst Express 520 Switch, respectively.

The UC500 can be installed on a desktop or mounted on a wall or rack. This document describes the desktop installation (installing the UC500 on a desktop, table, or shelf). For wall- or rack-mounting instructions, refer to the documentation for the UC500 platform.

This document assumes that PC-1, the PC that is running the Cisco Configuration Assistant and that will be used to perform the initial installation, is connected directly to the UC500. However, the 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, place it on a desktop, and power it up.
- 2 Download a copy of the Cisco Configuration Assistant from Cisco.com at <http://www.cisco.com/go/configassist>.
- 3 Install the Cisco Configuration Assistant on PC-1. Follow the prompts. When the setup is complete, click **Finish**.
- 4 Launch the Cisco Configuration Assistant by clicking the desktop icon.
- 5 Connect PC-1 to one of the PoE ports on the UC500, as illustrated. Verify that PC-1 is set to obtain its IP address using DHCP.

- 6 From the Cisco Configuration Assistant:
  - Choose **Connect to a new community**, and enter a name for the community.
  - In the **IP address** field, enter 192.168.10.1 and 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)

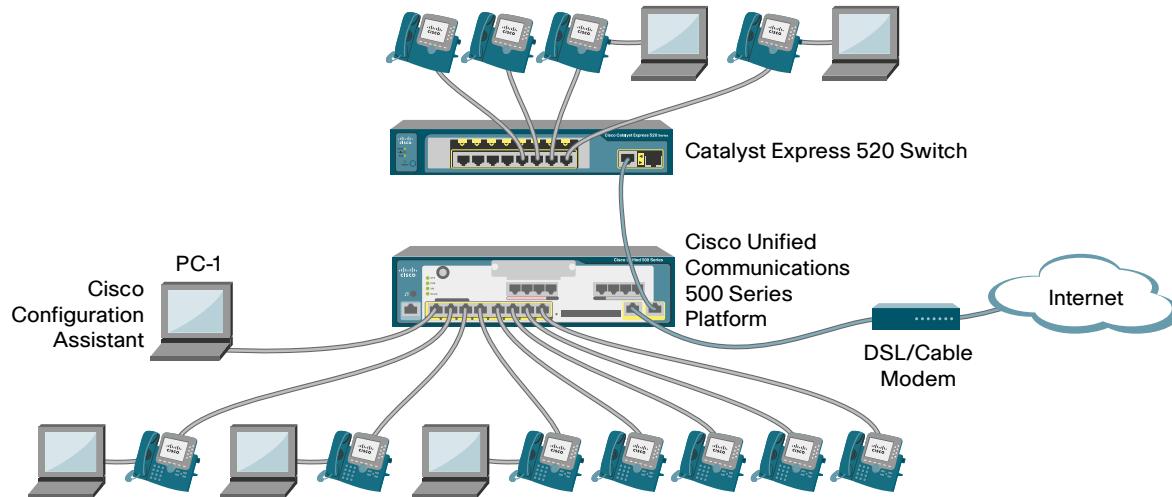
**Note:** If you are installing a single-site key system configuration, change the Voice System Type setting from PBX to Key System Configuration. This setting is in the **Telephony > Voice > Device Parameters** tab.

- 7 Click **OK** to save the configuration changes to the UC500. The system indicates when the configuration is complete.
- 8 From the Cisco Configuration Assistant, verify that the UC500 appears in the Topology View window.

**Tip!** Throughout these installation instructions, you are instructed to verify that the Topology View window includes the new device. If the Topology View window does not include the new device, then choose **Application Menu > Refresh** to refresh the Topology View window. For more information about the 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

**Note:** The Smart Business Communications System supports all Cisco Unified IP Phones. Throughout the rest of this document, the term “Cisco phone” refers to a “Cisco Unified IP Phone.”

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

- 11 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 rear panel of the installed Cisco phone.

**Note:** You can also use PC-1 to run the Cisco Monitor Manager, as described on page 9.

### Set Up WAN Connection

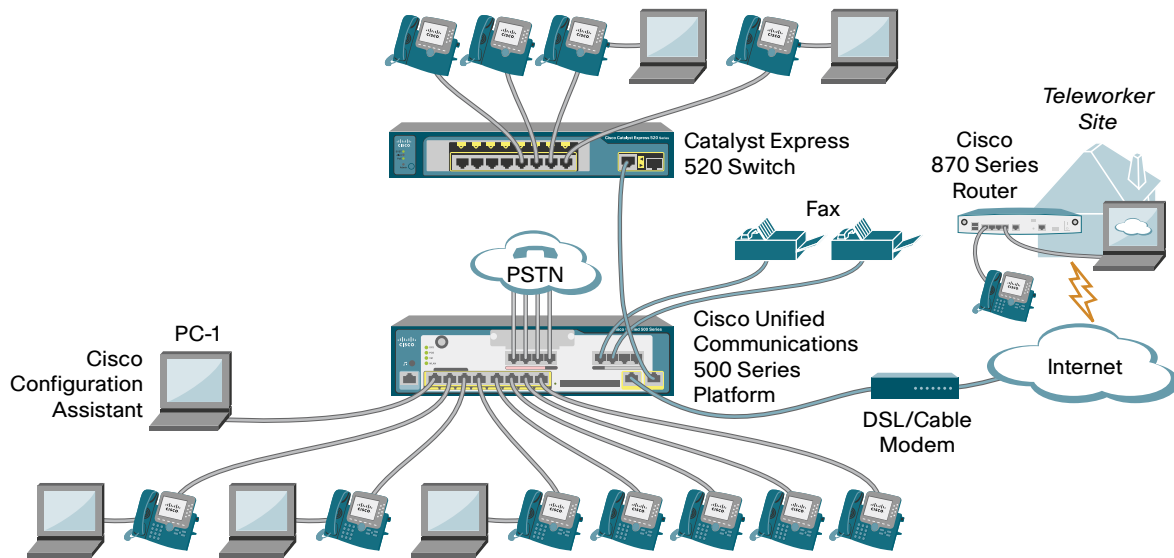
- 1 At the main site, connect the WAN port on the UC500 to the DSL or cable modem.
- 2 If the ISP requires a WAN configuration other than DHCP, then you must use the Cisco Configuration Assistant to change the WAN settings on the UC500.
  - From the Cisco Configuration Assistant, in the **Configure > Internet Connection** window, choose **Interface FastEthernet0/0**, and click **Modify**.
  - If PPPoE, check the **PPPoE** checkbox, 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.

**Note:** The ISP provides all information required in the *WAN Parameters* window.

- 3 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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### Set Up for FXO or BRI Lines

This document describes how to set up a deployment that uses Foreign Exchange Office (FXO) lines. The UC500 also has models with Basic-Rate Interface (BRI) ports rather than FXO ports for deployments that use BRI lines. For instructions on how to set up a deployment that uses BRI lines, refer to the documentation for the UC500 platform.

- 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 illustrated.
- 3 Using a cell phone, verify outgoing and incoming calls from the system. When you dial into 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.

### Set Up for SIP Trunking

- 1 From the Cisco Configuration Assistant, set up SIP trunking.
  - In the Topology View window, choose the 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.

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

### Set Up a Teleworker (Optional)

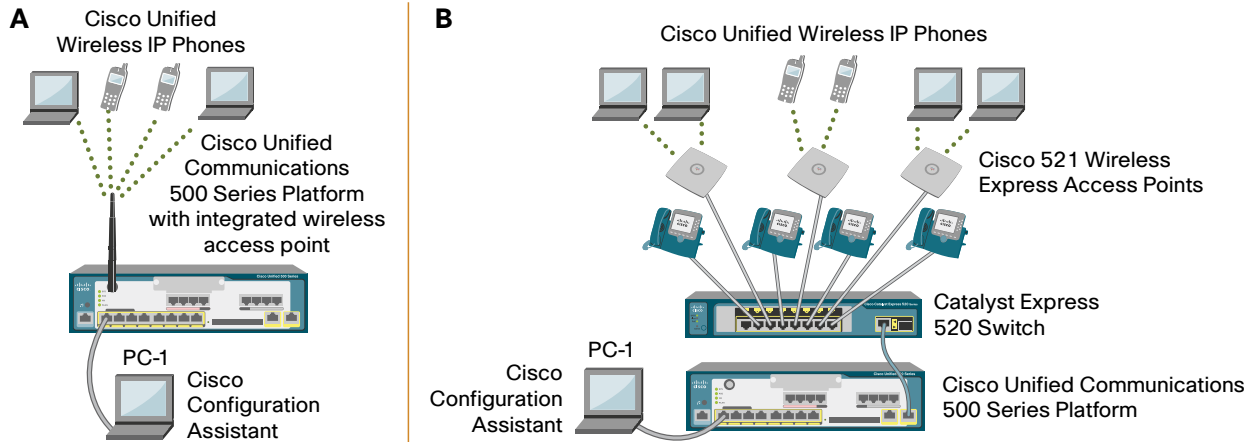
You can utilize a Cisco 870 Series router (for example, the Cisco 871 router) to set up a teleworker. For more information on the configuration steps for the Cisco 800 Series router, refer to the Cisco 800 Series documentation, which can be found at <http://www.cisco.com/go/800>.

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



# 4

## Deploy Integrated or Standalone Wireless Access Points



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### Cisco Smart Business Communications System with Wireless Access

You can provide wireless access to the Cisco Smart Business Communications System in two ways:

- Use a single integrated wireless access point for a small coverage area. No additional network hardware is needed for voice and data wireless connectivity. For broader coverage, you can deploy two wireless express access points in a standalone mode in addition to the integrated access point.
- Use the Cisco Mobility Express Solution in a standalone or controller-based architecture.

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

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

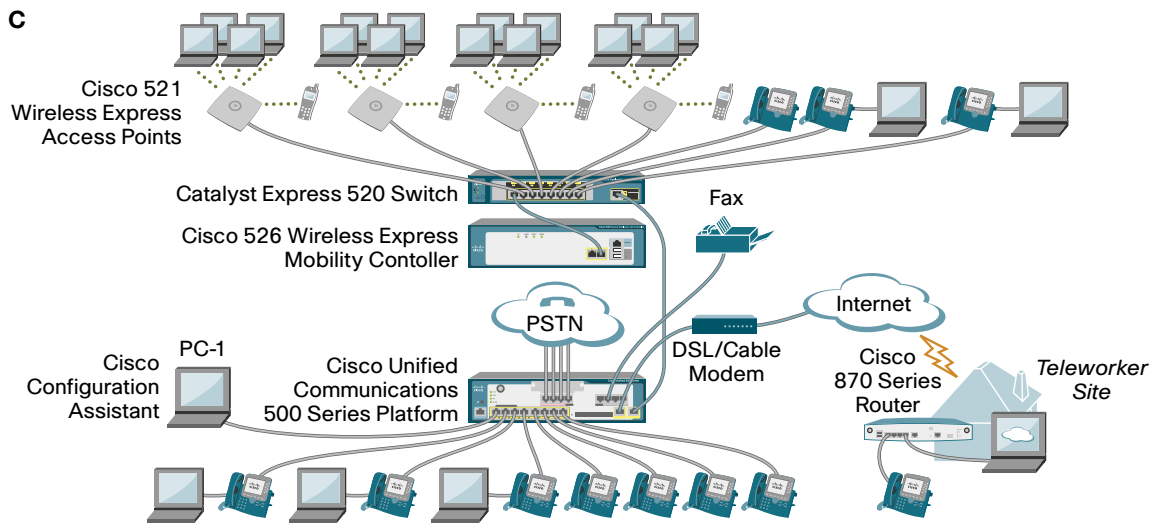
#### B. Deploy Cisco Mobility Express Solution in Standalone Mode

In the standalone architecture, you can deploy up to three Cisco 500 Series Wireless Access Points and configure them through the Cisco Configuration Assistant.

- 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 is to be used to connect the first AP521. From the Cisco Configuration Assistant, change the port role of the designated port to Access Point:
  - In the Topology View window, choose the CE520.
  - Choose **Configure > Smartports**. In the displayed Smartports window, assign the designated port a port role of Access Point.
- 3 Connect the AP521 to the designated port that you just assigned a port role of Access Point.
- 4 In the Topology View window, 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 the Cisco Configuration Assistant, choose **Configure > Wireless > Secure Wireless**, and configure the options in the Secure Wireless window. 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 be associated with that access point and pass traffic.
- 6 Repeat Step 2 through Step 5 for each AP521.

**Note:** The Cisco Mobility Express Solution can be deployed without the UC500 for customers who want to immediately use wireless connectivity for their data network, complete with wired and wireless security, and who want to add voice in the future. For information about this type of deployment, refer to the documentation for the Cisco Wireless Express Mobility Controllers.



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

When the advanced features and controller-mode access points are needed, deploy the controller-based architecture. In the controller-based architecture, you can deploy up to two controllers and 12 access points (six Cisco 521 Wireless Express Access Points per controller). If desired, you can deploy the two controllers in redundant mode.

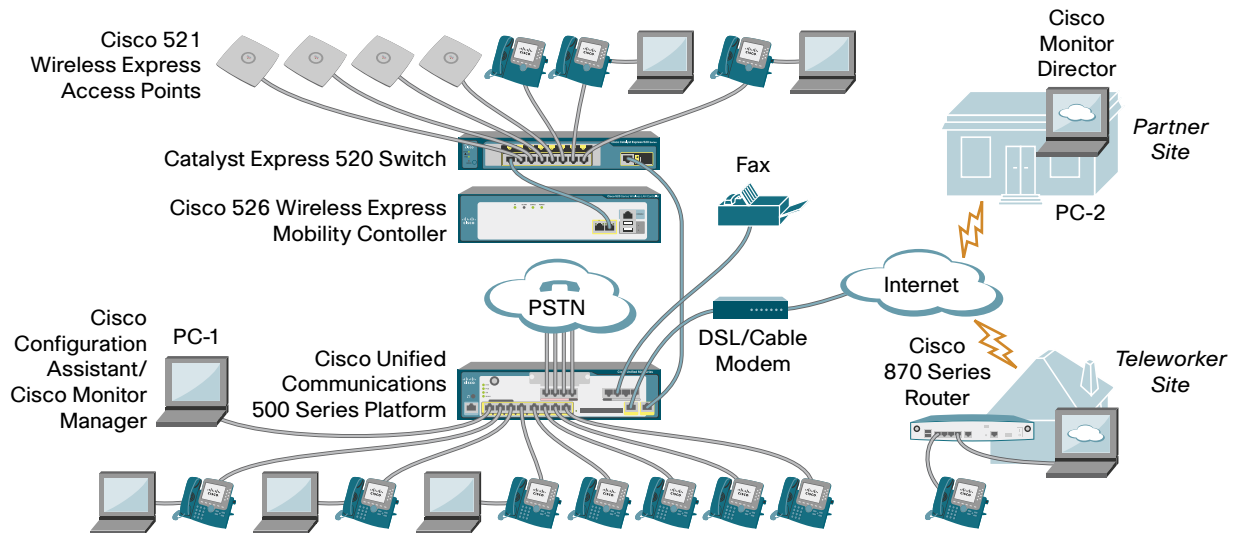
- 1 Verify that a DHCP server is operating on the network. You can use the DHCP server features of the UC500.
  - 2 Power up the Cisco 526 Wireless Express Mobility controller (WLC526).
  - 3 Connect PC-1 to the controller management port (port 1) of the WLC526.
  - 4 From PC-1, start Internet Explorer and browse to <http://192.168.1.1>. The Startup Wizard launches. Follow the prompts to configure the WLC526. When you save your settings, the WLC526 restarts.
  - 5 Start Internet Explorer again, enter the new IP address of the management port, obtained in Step 4, for the WLC526, and verify that the WLC526 is accessible.
  - 6 Power off the WLC526, and disconnect PC-1 from the WLC526. Reconnect PC-1 to a PoE port on the UC500, and launch the Cisco Configuration Assistant.
  - 7 Determine which of the available PoE ports on the CE520 is to be used to connect the WLC526.
- From the Cisco Configuration Assistant, change the port role of the designated port to Access Point:
- In the Topology View window, choose the CE520.
  - Choose **Configure > Smartports**. In the Smartports window, assign the designated port a port role of Access Point.
- 8 Connect the WLC526 to the designated port that you just assigned a port role of Access Point.
  - 9 In the Topology View window, 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.
  - 10 From the Cisco Configuration Assistant, choose **Configure > Wireless > Secure Wireless**, and configure the options in the Secure Wireless window for the WLC526.
  - 11 On the CE520, install up to six access points:
    - Determine which of the available PoE ports on the CE520 is to be used to connect a Cisco 521 Wireless Express Access Point. From the Cisco Configuration Assistant, change the port role of the designated port to Access Point:
      - In the Topology View window, choose the CE520.
      - Choose **Configure > Smartports**. In the Smartports window, assign the designated port a port role of Access Point.
    - Connect the Cisco 521 Wireless Express Access Point to the designated port that you just assigned a port role of Access Point.

The WLC526 configures the access points automatically.



# 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 **CiscoMMInstaller.exe** 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 and then click **OK**.
- 3 Verify that the 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.
  - Choose the UC500 in the device table, 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 **CiscoMDInstaller.exe** to start the installation.
  - Follow the prompts to install and launch the software.
  - Choose the evaluation version, and click **OK**. You are prompted to create a customer account. Enter the appropriate information in the Add Customer dialog box, and click **OK**. The customer should be one at which the Cisco Monitor Manager is installed.

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

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

- 1 From the 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** checkbox. Click **Test**. Make sure that a solid green dot appears in the Windows system tray.
- 2 From the Cisco Monitor Director, in the Customer Network Status window, make sure that a solid green circle appears in the **MM-MD Status** field for the customer.

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



# Post-Installation Checklist

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

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

- In **Configure > Device Properties > Users and Passwords**, change the default username and password for all the devices.
- In **Configure > Device Properties > Hostname**, change the default hostname for each device.
- In **Configure > Device Properties > System Time**, set the system time zone, time display, and the NTP servers for the UC500.
- To access the voice system configuration tabs for the UC500, launch **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 the above tasks from PC-1, the PC that is running the Cisco Configuration Assistant.

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

## ■ Perform remote monitoring activities.

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

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

If you want your customer to be able to use the 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 the Cisco Configuration Assistant on PC-1 and that they can use the 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 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. <http://www.cisco.com/en/US/support/index.html>

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**Cisco Marketplace** provides a variety of Cisco books, reference guides, and documentation. <http://www.cisco.com/go/marketplace/>

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