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## Cisco Small Business Pro

# Cisco Unified Communications 500 Series Model UC 540

### Package Contents

- Cisco Unified Communications 500 Series Model UC 540
- 4 rubber mounting feet for desktop installation
- Ethernet cable (yellow RJ-45 to RJ-45)
- Console cable (light blue RJ-45 to DB9)
- Power cord and external power supply
- Wall-mount bracket for power supply
- Quick Start Guide
- Product CD-ROM

# Welcome

Thank you for choosing the Cisco Unified Communications Model 540. The UC 540, part of the Cisco Smart Business Communications System (SBCS), is a unified communications solution for small businesses that provides voice, data, video, security, and wireless capabilities for 8 to 32 employees.

This guide describes how to install the UC 540 hardware and how to install and launch the Telephony Setup Wizard provided with Cisco Configuration Assistant (CCA).

# 1

## Before You Begin

Before you begin the installation, make sure that you have the following:

### For Hardware Installation:

- Cisco IP phones
- (Optional) One or more Power over Ethernet (PoE) switches for connecting IP phones or computers. We recommend that you use Cisco ESW 500 Series switches.
- Cables
  - Ethernet cables (Category 5 or higher) for connecting IP phones and computers, WAN interfaces, or other devices.  
One Ethernet cable is included with the UC 540 and one cable is included with each IP phone.
  - RJ-11 cable for analog Line (FXO) and Phone (FXS) connections.
  - RJ-45 (non-Ethernet) cable for ISDN (BRI) connections.
  - RJ-48 cable for ISDN (PRI) T1/E1 connections (only needed if a T1/E1 voice interface card is installed).



#### NOTE

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You can purchase the RJ-45 and RJ-48 cables from your telephony service provider or reseller. The RJ-11 cable can be purchased from any electronics store.

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- (Optional) Cable for connecting an external audio device to the 3.5 mm Music on Hold (MoH) port.
- (Optional) Additional Voice Interface Card (VIC) to insert in the expansion slot.
- Mounting screws for wall mount installation
  - Two number-10 wood screws (round- or pan-head) with number-10 washers, or two number-10 washer-head screws.  
The screws must be long enough to penetrate at least 3/4 inch (20 mm) into supporting wood or into a metal wall stud.

## For Software Installation:

- A PC running:
  - Windows Vista Ultimate, or Window XP (Service Pack 1) operating system
  - Microsoft Internet Explorer 6.0 or later
  - Adobe Flash Player with add-on version 10.0.0 or later
- A registered account on Cisco.com. You need this so that you can download the CCA software necessary to configure your UC 540.



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**NOTE** We highly recommend that you download Cisco Configuration Assistant (CCA) before you install and configure your UC 540. See [Installing Cisco Configuration Assistant, page 16](#).

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## UC 540 Default Information

Attribute	Default Setting
IP address	192.168.10.1
Username	cisco
Password	cisco
Voice VLAN (100)	10.1.1.x
Data VLAN (1)	192.168.10.x
Wireless SSID (Data)	cisco-data
Wireless SSID (Voice)	cisco-voice
Smartports	Role: IP Phone + Desktop Access VLAN: 1 Voice VLAN: 100

# 2

## Getting to Know the UC 540

The UC 540 includes these features:

- 8 switched 10/100 Power-over-Ethernet (PoE) ports
- 4 Phone (FXS) ports
- 4 Line (FXO) ports or 2 ISDN (BRI) ports for Public Switched Telephone Network (PSTN) connections
- Music-on-Hold (MoH) audio port
- 10/100 Ethernet WAN uplink port
- 10/100 Ethernet expansion port
- Console port for command-line interface (CLI) access. This port can also be used for connecting to the CLI through a modem.
- Integrated Wi-Fi for voice and data access
- Licenses to support 8 users (by default). You can increase the number of users on the system by purchasing and applying additional licenses.
- Optionally, you can connect any Cisco ESW 500 Series switch to the expansion port to increase the number of ports for connecting phones and data devices. A number of models are available, including PoE and non-PoE versions. For information about the switches, see <http://www.cisco.com/go/esw500help>.

The UC 540 can be installed in various types of network configurations. For guidance in planning, designing, and deploying the UC 540 in your network, use Cisco Smart Designs.

Cisco Smart Designs are a collection of validated network designs and deployment best practices, that feature simple step-by-step implementation guidance specifically tailored for Small Business Solutions. See <http://www.cisco.com/go/partner/smartdesigns>.

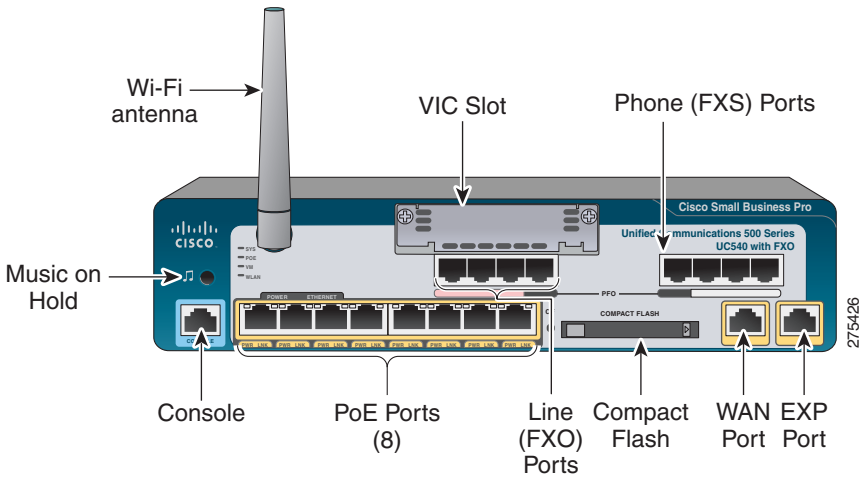
# Front Panel

The front panel is where you connect the IP phones and other network devices. The ports on the panel vary depending on the model.

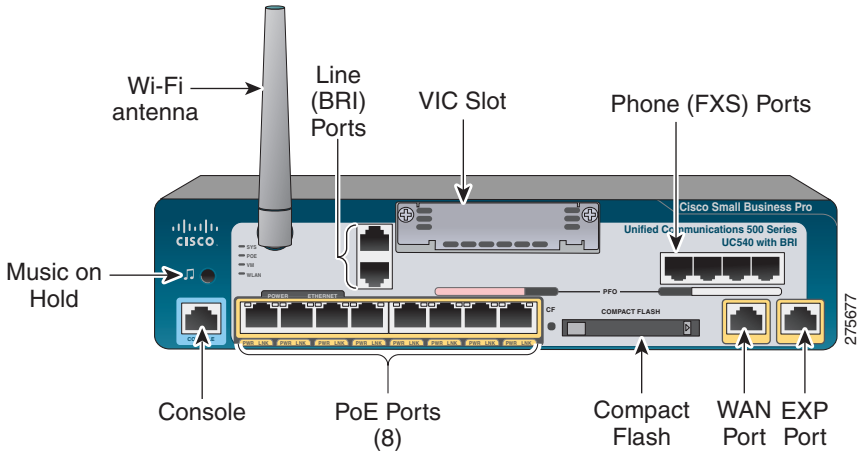
There are two UC 540 Series model numbers:

- UC540W-FXO-K9—Base model with 8 user license, integrated Wi-Fi, 4 Line (FXO) ports, and 1 VIC expansion slot
- UC540W-BRI-K9—Base model with 8 user license, integrated Wi-Fi, 2 Line (BRI) ports, and 1 VIC expansion slot

## Cisco UC 540 with Line (FXO) Ports



## Cisco UC 540 with Line (BRI) ports

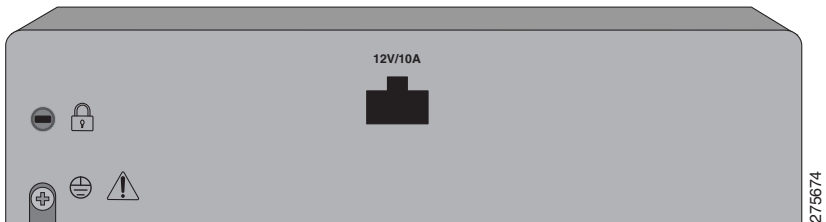


Feature	Description
Music-on-Hold (MoH) audio port	Connects to an audio device (such as an MP3 player or radio) to provide streaming audio for music on hold.
Console port	Connects the UC 540 to a console PC to provide access to the CLI. This port can also be used for connecting to the CLI through a modem.  Recommended for advanced users or for device access recovery purposes.
Wi-Fi	Wireless access point that provides connectivity for wireless computers, phones, and other devices.
Basic Rate Interface (BRI) ports	Connects the UC 540 to an Integrated Services Digital Network (ISDN). Only applies to model UC540W-BRI-K9.
Power Over Ethernet (PoE) ports	Provides network connectivity and power for devices that can draw power from PoE ports.
Phone (FXS) ports	Connects directly to an analog telephone, fax machine, or similar device.

Line (FXO) ports	Connects your phone system to the PSTN. Only applies to model UC540W-FXO-K9.  If the power fails, you can still make and receive emergency calls if you have a telephone line connected to the Line (FXO) port 0 and an analog phone connected to the Phone (FXS) port 3, even if the unit is not powered on.
(Optional) One factory-installed Voice Interface Card (VIC)	Provides connectivity to a Public Switched Telephone Network (PSTN) or for additional phone ports.
Compact Flash	Storage that contains the UC 540 software image, default configuration values, and phone software.
WAN port	Provides dedicated WAN (Internet) access. Connects to a DSL router, cable modem, or other WAN connectivity devices
Expansion port	Provides a connection to a switch with ports for additional phones or data devices. (We recommend that you connect the UC 540 to a Cisco ESW 500 Series switch.)

## Back Panel

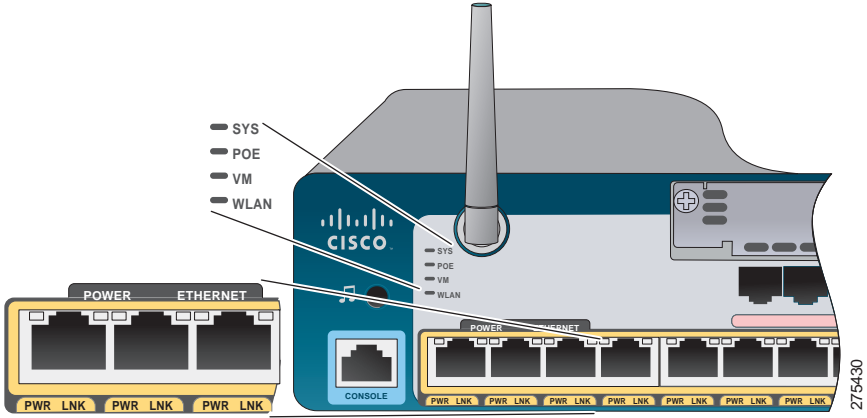
The back panel is where you connect the UC 540 to power. There is no external On/Off power switch on the unit.





# LEDs

The LEDs on the front panel of the UC 540 are used for monitoring system activity and performance.



LED	Description
SYS	Indicates that the system has successfully booted and is ready to use. The LED flashes green while the system is booting and then turns solid green when booting is complete.
POE	Indicates there are voice and data devices connected to the PoE ports. The LED is solid green when the connected devices are all operating correctly.
VM	Indicates that voice mail is active. The LED is solid green when voice mail is active.
WLAN	Indicates that the wireless network status is UP. The LED flashes green when it is ready to send and receive signals.
PoE, WAN, and EXPANSION Ports	Each port has a right and left LED. The left flashes green when there is activity on the port. The right LED is solid green when the connection is active.
Compact Flash	Flashes green when the compact flash is accessed. Otherwise, the LED is off.

# 3

## Installing the UC 540

Before you install the UC 540, review the *Regulatory Compliance and Safety Information for Cisco Unified Communications 500 Series for Small Business* on your product CD.



### NOTE

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Only install supported Voice Interface Cards (VICs) into the VIC expansion slot of the UC 540. For a list of these cards, see the *Cisco Unified Communications Model UC 540 System Reference Guide*.

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### Placement Tips

- **Wireless Installation**—Place the device in the center of your office space so that there are no obstructions. The embedded access point recommended coverage area is 2,500 sq. ft. /232 ms.
- **Ambient Temperature**—To prevent the device from overheating, do not operate it in an area that exceeds an ambient temperature of 104°F (40°C). Do not block or cover the vents.
- **Air Flow**—Make sure that there is adequate air flow around the device.
- **Mechanical Loading**—Check that the device is level and stable to avoid any hazardous conditions.

You can install the UC 540 on a desktop or mount in on a wall. To install it on a desktop, attach the four rubber feet (included) on the bottom of the unit and place it on a flat surface.

### Wall Mounting

The UC 540 has two key holes on the bottom of the chassis for mounting the unit on a wall or other vertical surface. The power supply is mounted to the wall using the supplied wall-mount bracket.

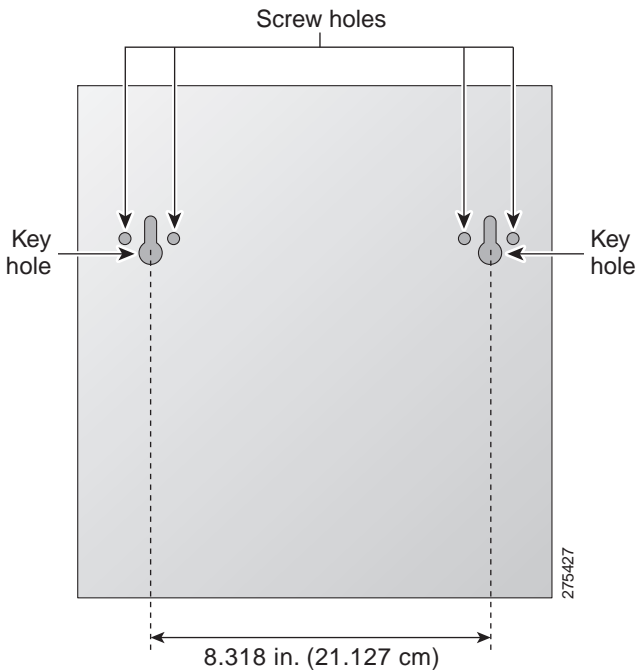
To mount the chassis and power supply on a wall, follow these steps:

**STEP 1** Align the mounting-screw holes with a wall stud, or use wall anchors.

- For attaching to a wall stud, use two number-10 wood screws (round- or pan-head) with number-10 washers, or two number-10 washer-head screws.

The screws must be long enough to penetrate at least 3/4 inch (20 mm) into supporting wood or into a metal wall stud.

- For hollow-wall mounting, the wall must be at least 1/2 inch (12.7 mm) thick.

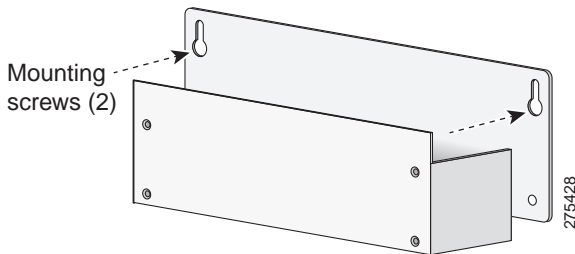


**STEP 2** Position the UC 540 on the wall.

- a. Orient the front and back of the unit vertically.
- b. Place the unit with the front panel facing up and the connection to the power cord facing down.

**STEP 3** Attach the power supply bracket to the wall.

The following illustration shows the wall-mount bracket for the power supply and the mounting-screw holes on the back of the bracket.



- a. Attach the bracket to the wall by using the mounting hardware specified in **Step 1**.
- b. Orient the front and back of the power supply vertically.
- c. Position the end nearest the power cable at the top.

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## Grounding the Chassis

The UC 540 chassis must be reliably grounded with a supplementary ground wire to comply with the relevant product safety standards. This supplementary ground is in addition to the ground connection made by the power cord.

For the supplementary ground connection, use size 14 AWG (2 mm) or larger copper wire and an appropriate user-supplied ring terminal with an inner diameter of 1/4 inch (5 to 7 mm).



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**NOTE** The UC 540 is not NEBS-compliant.

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To connect the chassis to a reliable earth ground:

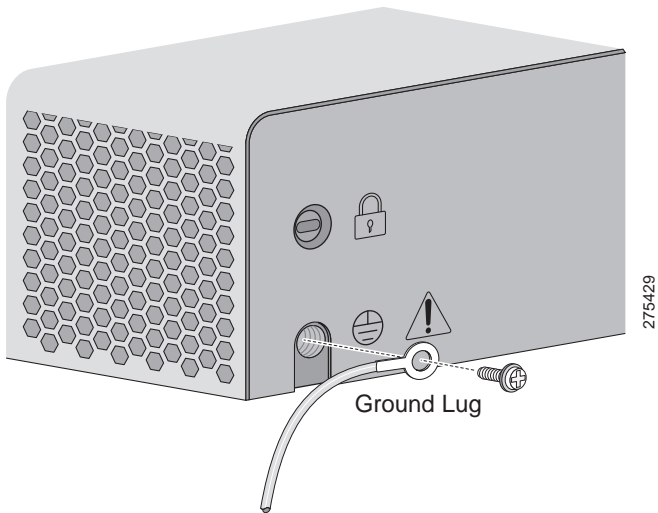
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**STEP 1** Strip one end of the ground wire to the length required for the ground lug or terminal.

- For the ground lug, strip approximately 0.75 in. (20 mm).
- For the user-provided ring terminal, as required.

**STEP 2** Crimp the ground wire to the ground lug or ring terminal, using a crimp tool of the appropriate size.

**STEP 3** Attach the ground lug or ring terminal to the chassis. Tighten the screws to a torque of 8-10 in-lb. (0.9-1.1 N-m).



**STEP 4** Connect the other end of the ground wire to a known reliable earth ground point. If there is any doubt as to the reliability of the ground point, contact a licensed electrician for assistance.

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# 4

## Connecting the Equipment

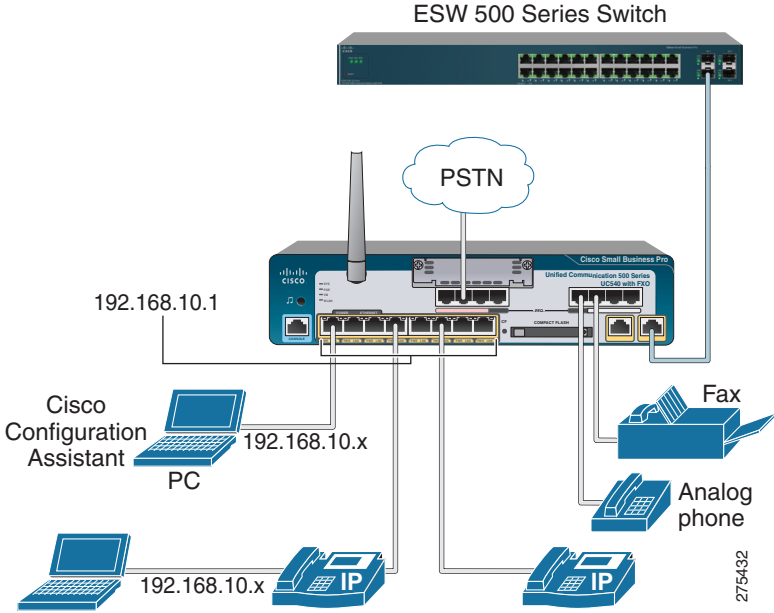
- STEP 1** Insert the power cord into the back of the UC 540. Do not connect to power.
- STEP 2** Screw the antenna onto the threaded connector on the front panel. Orient the antenna to point upward.
- STEP 3** Connect the interfaces and devices as described below.

Type of Connection	Description
DSL, cable modem, or broadband network devices.	Connect the supplied Ethernet cable from the device to the WAN port on the front panel of the UC 540. Cisco strongly recommends using Category 5 or better cable.
PSTN analog trunks	Connect an RJ-11 cable to one of the Line (FXO) ports on the front panel of the UC 540. Connect the other end of the cable to a PSTN line or a station interface on a PBX.
ISDN line <sup>1</sup> (only applies to model UC540W-BRI-K9)	Connect the cable provided by the ISDN provider to one of the Line (BRI) ports on the front panel of the UC 540. Connect the other end of the cable to the ISDN provider equipment.
IP phones and other network devices (such as a wireless access point, IP video cameras, and network attached storage (NAS) devices)	Connect an Ethernet network cable from the network device to one of the PoE ports on the UC 540 front panel.
Fax machine or analog phone	Connect an RJ-11 cable to one of the Phone (FXS) ports on the front panel of the UC 540. Connect the other end of the cable to the fax machine or phone.
ESW switch	Connect an Ethernet network cable from the expansion port of the UC 540 to one of the uplink ports on the switch.

1. If a T1/E1 controller is installed in the VIC slot, connect either a T1/E1 straight-through cable (identical to the Ethernet straight-through cable), or a T1/E1 crossover cable to the controller. Connect the other end of the cable to the ISDN provider equipment. The cable that you use depends on the type of termination on the network interface device (NID), and is the point in which the telephone company network ends and connects with the wiring at the customer site.

**STEP 4** Power on the UC 540 by inserting the power cord plug into a power outlet. There is no external Power On/Off switch on the unit.

**STEP 5** Power on the connected devices.



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# 5

## Verifying the Hardware Installation

To verify the hardware installation, complete the following tasks:

- Check the status of the UC 540 by looking at the LEDs on the front panel. See **LEDs, page 8**.
- Check that the devices connected to the PoE ports are all receiving power.

Verify the communications.

- To test IP connectivity, launch a Web browser and enter `http://192.168.10.1`. When the authentication window appears, this means that your system is active.
- Make sure that each connected IP phone displays an internal extension number or a line number, on at least one of the phone line buttons. Verify the phone connectivity by making a call from one phone to another.



**NOTE**

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If you need help resolving a problem, go to the Cisco Small Business Support Community website at: <http://www.cisco.com/go/smallbizsupport>. For technical documentation and other links, see **Suggested Next Steps, page 20** and **Where to Go From Here, page 21**.

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# 7

## Getting Started with the Configuration

After you install the UC 540, you configure it by using Cisco Configuration Assistant (CCA). CCA is an easy to-use application used to configure, manage, and administer your UC 540 and other devices in the Cisco Smart Business Communications System. It provides everything you need to quickly set up a small office network.



**NOTE** Only use CCA to configure your device. Using the Command-Line Interface (CLI) is not supported.

### Installing Cisco Configuration Assistant

To install CCA on your PC:

**STEP 1** Go to this web address to download CCA: <http://www.cisco.com/go/configassist>.

To access the software, you must be a registered user on Cisco.com.

**STEP 2** Click the **Download Software** link in the Support box.

**STEP 3** Enter your Cisco.com **Username** and **Password** and click **Log In**.

**STEP 4** Click **Cisco Configuration Assistant**. Then select the largest numbered file under **Latest Releases** (for example, Cisco-config-assistant-win-k9-2\_1-en.exe).

**STEP 5** Run the installer and follow the prompts. The install wizard will guide you through the installation process.

**STEP 6** When the setup is complete, click **Finish**.

**STEP 7** Launch CCA by clicking the CCA icon on your desktop.

The **Application Update Check** window appears.

**STEP 8** Check that you are using the latest version of CCA and install it if required.

# Connecting to the UC 540

This section describes how to connect your PC to the UC 540 and how to use CCA to connect to the UC 540.

Before you connect your PC, do the following:

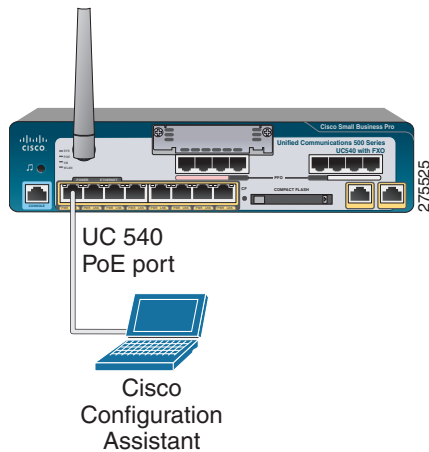
- Disable all network interface Cards (NICs) that are not directly connected to the UC 540.
- Disable the wireless network card.
- Turn off any third-party FTP or TFTP services.
- Temporarily disable any software firewalls running on the PC.

To connect to the UC 540:

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**STEP 1** Connect an Ethernet cable to one of the PoE ports on the front panel of the UC 540. Connect the other end of the cable to the Ethernet port on your PC.

Verify that the PC is set to use the Dynamic Host Configuration Protocol (DHCP) to obtain its networking parameters (such as IP Address, Subnet Mask, Default Gateway, DNS Server, and so forth).



**STEP 2** From CCA, open the **Connect** window and click **Add a New Site**.

This is the preferred way to connect to a Cisco Smart Business Communications System (SBCS).

**STEP 3** Enter the **name** and **description** for the new customer site.

**STEP 4** From the **Discover Devices** drop-down menu, select **Using a Starting IP address**.

**STEP 5** Enter **192.168.10.1** in the **Starting IP Address** field.

This is the default IP address for the UC 540.

**STEP 6** Click **Start**.

**STEP 7** When prompted, enter the **username** and **password** for the UC 540 and click **OK**.

The default username is **cisco** and the default password is **cisco**. Passwords are case sensitive.

**STEP 8** If prompted for the login information for a connected ESW switch, enter the switch **username** and **password**. CCA will automatically discover the device.

The switch default username is **cisco** and the default password is **cisco**.

**STEP 9** When CCA discovers both the UC 540 and ESW switch (if installed), click **OK**.

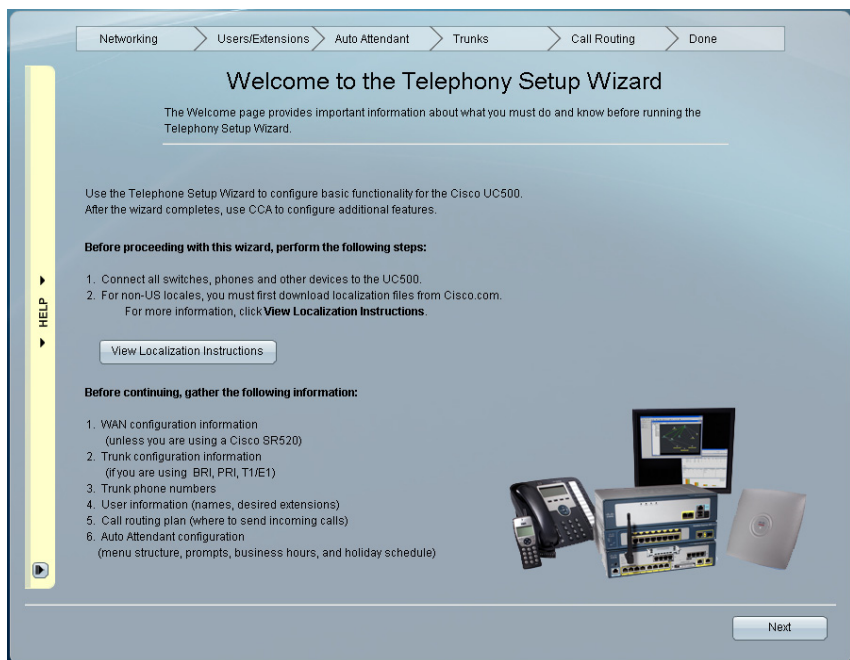
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## Using the Telephony Setup Wizard

When CCA connects to the UC 540, the **Telephony Setup Wizard** automatically launches. You can also run the Wizard by choosing **Home >Telephony Setup Wizard**. The wizard guides you through the steps needed to configure a basic telephony solution for a Cisco Smart Business Communications System.

Before you begin:

- Gather the information listed in the **Welcome** window. This is important information about what you must **do** and **know** before running the wizard.
- If you are setting up the system for a locale other than US/English, click **View Localization Instructions** and follow the instructions to download and install the language files to your PC.



**STEP 1** Click **Next** and follow the prompts to complete the installation.

**STEP 2** After the wizard completes:

- Verify Internet connectivity by going to: <http://www.cisco.com>.
- Test calls to and from the PSTN.
- Test calls to voice mail and Auto Attendant (AA), if configured.
- Verify that the IP phones show the correct date and time.



**NOTE**

The Wizard requires that you change the default administrator login and password. Use the new username and password to access and administer the UC 540.

Congratulations! The basic installation of the UC 540 is complete.

# 8

## Suggested Next Steps

You are now ready to start using your UC 540. Depending on how you plan to use the UC 540 in your network, here are some suggested next steps to take.

### Implementing a Small Business Network Solution

Use Cisco Smart Designs to plan and implement a Small Business network solution.

Cisco Smart Designs are a collection of validated network designs and deployment best practices, that feature simple step-by-step implementation guidance specifically tailored for Small Business Solutions. For more information, see <http://www.cisco.com/go/partner/smartdesigns>.

### Managing your Cisco SBCS Solution

Use CCA to configure, manage, and administer your UC 540 and other devices in your SBCS solution.

For more information, refer to the CCA online help or see the *Cisco Configuration Assistant Smart Business Communications System Administrator Guide* at: [http://www.cisco.com/en/US/products/ps7287/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7287/tsd_products_support_series_home.html).

See the *Release Notes for Cisco Configuration Assistant* for important information about CCA and any limitations, restrictions, and caveats that apply.

### Accessing Product-Specific Feature Documentation

For additional product information for the Cisco Unified Communications 500 Series for Small Business, including Cisco Smart Business Communications System (SBCS) documentation, see <http://www.cisco.com/go/sbcs-docs>.

### Visiting the Cisco Small Business Community Website

Visit the Small Business Support Community website at: <http://www.cisco.com/go/smallbizsupport>. Here you can find support resources for your product including FAQs, support forums, training and tutorials, Video on Demand (VODs), and additional technical documentation.

## 9

# Where to Go From Here

Support	
Cisco Small Business Support Community	<a href="http://www.cisco.com/go/smallbizsupport">http://www.cisco.com/go/smallbizsupport</a>
Online Technical Support and Documentation (Login Required)	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>
Phone Support Contacts	<a href="http://www.cisco.com/en/US/support/tsd_cisco_small_business_support_center_contacts.html">http://www.cisco.com/en/US/support/tsd_cisco_small_business_support_center_contacts.html</a>
Software Downloads (Login Required)	Go to <a href="http://www.cisco.com/public/sw-center/index.shtml">http://www.cisco.com/public/sw-center/index.shtml</a> and enter the model number in the Software Search box.
Cisco IP Phones	
Cisco IP Phone SPA 500 Series	<a href="http://www.cisco.com/en/US/products/ps9730/index.html">http://www.cisco.com/en/US/products/ps9730/index.html</a>
Cisco IP Phone SPA 525G Deployment Guide	<a href="http://www.cisco.com/en/US/docs/voice_ip_comm/sbcs/deployment_guides/spa525g_phone/sbcs_spa525g_wireless_deployment_guide.pdf">http://www.cisco.com/en/US/docs/voice_ip_comm/sbcs/deployment_guides/spa525g_phone/sbcs_spa525g_wireless_deployment_guide.pdf</a>
Cisco IP Phone Quick User Guides	<a href="http://cisco.com/go/sbcs-docs">http://cisco.com/go/sbcs-docs</a>
Cisco Unified IP Phones 7900 Series	<a href="http://www.cisco.com/en/US/products/hw/phones/ps379/">http://www.cisco.com/en/US/products/hw/phones/ps379/</a>
Cisco Small Business	
Cisco Partner Central for Small Business (Partner Login Required)	<a href="http://www.cisco.com/web/partners/sell/smb">http://www.cisco.com/web/partners/sell/smb</a>
Cisco Small Business Home	<a href="http://www.cisco.com/smb">http://www.cisco.com/smb</a>
Marketplace	<a href="http://www.cisco.com/go/marketplace">http://www.cisco.com/go/marketplace</a>

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