

# Release Notes for Cisco Unified Communications UC320W Release Candidate 2.1.0(22)

## August 2011

These Release Notes describe new features, resolved issues, known issues, system requirements, and firmware upgrade procedures for Cisco Unified Communications UC320W Release Candidate 2.1.0(22).

**This release is intended for these supported regions: Australia, Canada, Hong Kong, New Zealand, the United Kingdom, and the United States.**



**CAUTION** Before you can upgrade to Release Candidate 2.1.0(22), you must install interim version 2.0.12(8). If you do not install the interim release first, the upgrade to 2.1.0(22) will fail. This process is streamlined when you install firmware from the Cloud. For more information, see [Upgrading the Firmware, page 13](#).

## Contents

This document includes the following topics:

- [Device Firmware, page 2](#)
- [Enhancements Since Release Candidate 2.0.9, page 2](#)
- [Issues Fixed Since Release Candidate 2.0.9, page 3](#)
- [Known Issues, page 5](#)
- [Required Equipment and Services, page 12](#)
- [Upgrading the Firmware, page 13](#)

- [Where to Go From Here, page 16](#)

## Device Firmware

This version of the Cisco UC320W firmware includes the following device firmware.

- **Cisco SPA525:** 7.4.8(012i)
- **Cisco SPA501, SPA502, SPA504, SPA508, SPA509, SPA301, SPA303:** 7.4.7v20
- **Cisco SPA8800:** 6.1.9 (GW008)

## Enhancements Since Release Candidate 2.0.9

- **Support for dual language Auto Attendant:** If you choose the English/French option on the *Configuration > Site > Region* page, you can allow callers to choose a preferred language for the Auto Attendant prompts. The settings are configured on the *Configuration > Call Routing > Auto Attendant* page.
- **Capacity improvements:**
  - Maximum simultaneous calls per SIP trunk increased from 8 to 12.
  - Maximum simultaneous hunt group calls increased from 8 to 12.
  - Maximum simultaneous AA calls increased from 8 to 12.
  - Maximum simultaneous VM accesses increased from 4 to 8.
  - Maximum duration of each AA prompt has been increased from 1 minute to 2 minutes.
- **CLID option (Direct Inward Dialing) for SIP phone numbers:** If you have multiple phone numbers for a SIP/BRI trunk, you can set up your call routing to use these numbers as Calling Line Identifiers for users and groups. For example, if calls to a particular SIP/BRI number are routed to a hunt group, you can use that phone number as the calling ID for all outbound calls from the group members. This option is available on the *Configuration > Call Routing > Inbound Calls* page.

- **New option for call monitoring:** The Busy Lamp Field (BLF) feature has been expanded and renamed. Two phone button options allow a user to monitor calls another user.
  - Line Monitor, which is similar to the previous BLF option, allows a user to monitor a single extension for another user.
  - Phone Monitor allows a user to monitor all extensions on another user's phone.
  - These buttons also allow a user to pick up a ringing call on the monitored extension or phone, to speed-dial the user's personal extension, or to immediately transfer a call to the user.
- **New group paging option:** When creating a paging group, you can choose whether it performs Gentle Paging or Emergency Paging.
  - Gentle Paging is non-intrusive, sending a page only to group members who do not have active calls.
  - Emergency Paging immediately sends a page to all group members. Active calls are placed on hold.
- **CDP Neighbor information:** Use the *Status > CDP Neighbors* page to view status information about neighboring devices that were discovered by the Cisco Discovery Protocol. This information is useful for discovering the IP addresses of neighboring Cisco devices such as switches and security appliances.
- **Day/Night call forwarding:** Now you can configure night-time call forwarding, along with the existing options for night-time call routing and night-time Auto Attendant. After you enable this function on the *Configuration > Day/Night Features* page, you can select night-time destinations on the *Configuration > Call Forwarding* page. After your initial configuration is applied, you also can choose night-time destinations on the pages where you configure the settings for groups.

## Issues Fixed Since Release Candidate 2.0.9

- Fixed an issue with the Show SIP Only filter becoming deactivated when a user navigated away from the *Status > Support Tools* page. (CSCtk14157)
- Fixed an issue with queuing delays during call transfers. (CSCtq22456)

## Release Notes

---

- Fixed an issue in which a caller heard music on hold instead of a ringback tone during a call transfer. (CSCtk58177)
- Fixed an issue in which the *Status > External Trunks* page displayed multiple listings for a single SIP trunk. (CSCth85437)
- Updated the dial plan to ensure that the "+1 dialing" feature functions correctly with SIP provider networks that require either "1" or "+1" to be prepended to the telephone number. (CSCtq51942, CSCtq37949)
- Fixed an issue in which the selected Music on Hold source (internal or external) was not streamed for calls through certain SIP provider networks. (CSCtq37896)
- Fixed issues with applying or backing up a configuration when the Cisco UC320W was configured with the Routes Voice Only topology. (CSCto97373)
- Fixed an issue in which the Voicemail to Email feature did not include messages that were forwarded from one user's mailbox to another's. (CSCtq49285)
- Fixed an unclear error indicator for duplicate Call Park buttons on the *Configuration > User/Group Features > Phone Buttons* page. (CSCti08815)
- Fixed an issue in which system access was blocked after a LAN IP address change if multiple browser windows were open. (CSCtl74903).
- Fixed a display issue with the French "FIN D APPEL" softkey. (CSCto81331)
- Fixed an issue in which the Auto Attendant failed to detect some callers' inputs. (CSCtk62126)
- Corrected Australian dial plan settings that caused analog phone users to hear the reorder tone after pressing the outside line digit for FXO calls. (CSCtn84123)
- Modified the UK parameters for disconnect tones, port impedance, and co-termination to prevent active calls from becoming disconnected. (CSCtq14519)
- Corrected the *Configuration > Site > Summary* page to correctly display the UK dial plan settings from the *Configuration > Site > Region* page. (CSCtq13921)

- Fixed an issue in which the phones restarted if the WAN IP address changed or the WAN cable was connected or disconnected. (CSCth24069, CSCtl11481)
- Fixed an issue in which call forwarding to voicemail failed when a user had an active call and chose not to answer a transferred call. (CSCtq62192)
- Fixed an issue in which Group Pickup failed when a user tried to pick up a ringing call on an extension that had another active call. (CSCtq85752)
- Corrected the *Configuration > Ports and Trunks > SIP/BRI Trunks* page to display the correct default codec for Hong Kong. (CSCtq77010)
- Updated the dial plan settings for Hong Kong to correct an issue with outbound dialing.
- Updated the code to ignore empty SIP headers that caused the system to re-register and reboot.
- Fixed an audio issue that occurred on FXO calls when the Cisco SPA8800 was installed into a network in which other devices used its default LAN address, 192.168.0.1. (CSCtq11270)

## Known Issues

This section includes the following types of issues:

- [System Management, page 6](#)
- [Audio Quality, page 8](#)
- [Call Routing, page 8](#)
- [Voicemail, page 8](#)
- [Display Issues, page 10](#)
- [Other, page 10](#)

### Browser Requirements for Configuration Utility

- Cisco recommends Internet Explorer version 7 or 8, Firefox version 3.6.19 or later, Safari version 4 or 5, and Google Chrome 10.
- Internet Explorer 9 is not supported. There are known issues running Flash programs in Internet Explorer 9.

- Mozilla Firefox version 4 has not been tested.
- Because the configuration utility requires Adobe Flash Player, it is not compatible with Apple iPhone, iPod Touch or iPad devices.

**NOTE** Do not run the configuration utility from a computer that is connected to the PC port of a Cisco IP phone. When you apply the configuration, which causes the phone to reboot, you will lose connectivity to the configuration utility. Instead, run the configuration utility from a computer that is connected either to a LAN port of the Cisco UC320W or to the LAN port of a switch that has connectivity to the Cisco UC320W.

### System Management

- After restoring a configuration with different LAN or network topology settings than were in use for the current session, there may be issues launching the configuration utility. (CSCtn57188)  
**Work Around:** Ensure that your PC received an IP address in the correct range for the restored configuration. Restart the browser and enter the new IP address for the Cisco UC320W.
- With very high data traffic to and from the WAN (rates over 100MB), system performance may be slow. Administrators also will notice slow performance in the configuration utility. (CSCtj13887)  
**Work Around:** Configure the Cisco UC320W as a DHCP client of the data network, if WAN network throughput above 100 Mbps are required.
- There are intermittent issues in which configuration changes are not passed down to a Cisco SPA8800 gateway. (CSCtk15802)  
**Work Around:** To synchronize configuration changes, factory reset the Cisco SPA8800 by using the built-in IVR. Connect an analog phone to Port 1 of the unit. Press the star key four times: \*\*\*\*. After the greeting plays, enter the R-E-S-E-T option, followed by the pound key: **73738#**. Press **1** to confirm.
- The *Status > Support Tools* page includes the built-in FXO ports of the Cisco UC320W but does not include the ports of any connected Cisco SPA8800 units. (CSCtn59149)

- There are occasionally issues detecting some USB keys, specifically those using the USBest UT166 controller. (CSCtI89883)  
**Work Around:** Use one of the following USB keys, which have been tested successfully with the Cisco UC320W: A-DATA C905, PD1, T807; Apacer AH225; KingMax super stick mini; Kingston Datatraveler, Kingston Datatraveler DT101C; Nokia 5310 mobile phone (micro SD); Patriot Memory RAZZO; PNY Attaché; PQL, PQL Intelligent Stick; Toshiba TransMemory; Transcend JetFlash 2A, v20, v33, JF150, V10; Zynet
- Spanning Tree Protocol is not currently implemented in the built-in switch of the Cisco UC320W. The administrator must be careful not to introduce any Layer 2 network loops. (CSCtI77145)
- Creating a new configuration does not erase Call History logs from the phones. (CSCtn08849)  
**Work Around:** After initiating a new configuration in the configuration utility, use the phone menus to factory reset the phones. Instructions are provided below.
  - **Cisco SPA301 or Cisco SPA501:** Lift the receiver, and access the Interactive Voice Response unit by pressing the \* key four times: \*\*\*\*. Enter the R-E-S-E-T option, **73738**, followed by #. Press **1** to confirm. Wait about 40 seconds for the *Option Successful* message, and then hang up.
  - **Cisco SPA303 and other Cisco SPA50x Series models:** Press the Setup key on the phone keypad. Scroll down to **Factory Reset**, and press **Select**. When the confirmation message appears, select **OK**.
  - **Cisco SPA525G/G2:** Press the Setup key on the phone keypad. Scroll down to **Device Administration**, and press **Select**. Scroll down to **Factory Reset**, and press **Select**. When the confirmation message appears, select **OK**.
- After an attempt to load a configuration file with the same wireless settings as the current configuration, the wireless SPA525G phones get stuck in a resynchronization loop. (CSCtq64852)  
**Work Around:** Use the Setup menu on the phone to reboot the phone.

### Audio Quality

- Echo may be heard if the IP phones are connected to a switch that is not configured with a voice VLAN. (CSCth53813)  
**Work Around:** Cisco recommends Cisco Small Business 300 Series Managed Switches and Cisco ESW500 Series Ethernet Switches. These switches require no special configuration for use with the Cisco UC320W. Other switches may require special configuration of the voice VLAN (100). For more information about switch configuration, see [www.cisco.com/go/partner/smartdesigns](http://www.cisco.com/go/partner/smartdesigns)
- One-way audio occurs after a parked SIP call is unparked. (CSCtr91557)

### Call Routing

- When a call is placed to an external number through an FXO trunk, there is a long delay before the ringback tone plays. (CSCtl49731, CSCtj57861)
- If a Shared Extension's Call Forward setting is None, an unanswered call rings for 1 minute and then is disconnected. (CSCtr67150)
- When the Outside Line digit is not 9, the system ignores the Emergency Trunk Assignment settings on the *Configuration > Ports and Trunks > Outbound Trunks* page. Instead, the Outbound Trunk Assignment settings are used for emergency calls. (CSCtq65533)  
**Work Around:** Use 9 as the Outside Line digit.

### Auto Attendant

- The Auto Attendant Prompt Recorder plays instructions in English even when the Region is set to Canada (French). (CSCtq11206)

### Voicemail

- If a user records a temporary greeting, it remains in use until it is deleted. (CSCtn56684)  
**Work Around:** If a user no longer wants to use a temporary greeting, the user can log in to the mailbox and go through these options: Press **4** for setup options, press **4** for the temporary greeting, and then press **2** to erase the temporary greeting.
- When a Shared Extension or Hunt Group is busy, the caller hears the "unavailable" greeting instead of the "busy" greeting. (CSCtj21082)
- When a Hunt Group call is transferred to voicemail, there is a long silence before the greeting plays. (CSCtk68137)



- The Voicemail Pilot may not recognize a mailbox number that is input very quickly. The system may prompt for the mailbox again. (CSCtl06864)
- The *Status > Voicemail* page does not correctly show the voicemail usage for Shared FXO Lines and Hunt Groups. (CSCti43843)
- The callback feature and the send message feature fail for Shared Extension mailboxes. (CSCtk60849, CSCtk60450)
- The voicemail callback feature fails for a message left by an external caller. (CSCtl20136)
- After a user clicks the *Reinitialize All* button on the *Status > Voicemail* page, all phones are rebooted. (CSCtr56923 and CSCtq72796)  
**Work Around:** Click each *Reinitialize* button to reset each mailbox individually.
- When the Region is set to Canada (English/French), and a user is depositing a voicemail, the language prompts are based on the language settings of the voicemail owner, not the language the caller selected from the Auto Attendant menu. For example, although a caller selected French from the Auto Attendant menu, the voicemail prompts will play in English if the mailbox owner has selected English as the preferred language on the phone. (CSCtr78765)
- When the Region is set to Canada (English/French), no pre-recorded prompts are available. (CSCtr20725)  
**Work Around:** Use the Auto Attendant Prompt Recorder to record your primary prompts in slots 1-20 and the secondary prompts in slots 21-40. “Primary” or “Secondary” are determined by the Language Mode selection on the *Dual Language* tab. For more information about recording prompts, see the information button on the *Configuration > Call Routing > Auto Attendant > Prompts* page.
- When the Region is set to Canada (English/French), prompt 39 cannot be recorded. (CSCtr78945)
- When voicemail boxes are reinitialized from the *Status > Voicemail* page, SIP calls may experience intermittent silences or distorted audio. (CSCtr70807)  
**Work Around:** Perform this type of task during periods when you are least likely to affect user activity.

### Display Issues

- A “Button errors” message at the top of the *Phone Buttons* page may cause confusion because it does not specify which phone has the errors. (CSCtj73525)  
**Work Around:** To find the phones with the errors, use the Previous Set and Next Set buttons. When all button errors are fixed, the error message disappears.
- Very long drop-down lists, such as a long list of voicemail boxes, are partly hidden from view. (CSCtj61728)
- Although the regional settings specify a language other than English, the Corporate Directory on the phone is displayed in English. (CSCto71808)
- The *Status > External Trunks* page continues to show the state as Registered even when the Cisco UC320W loses its WAN connection. (CSCtr72901)

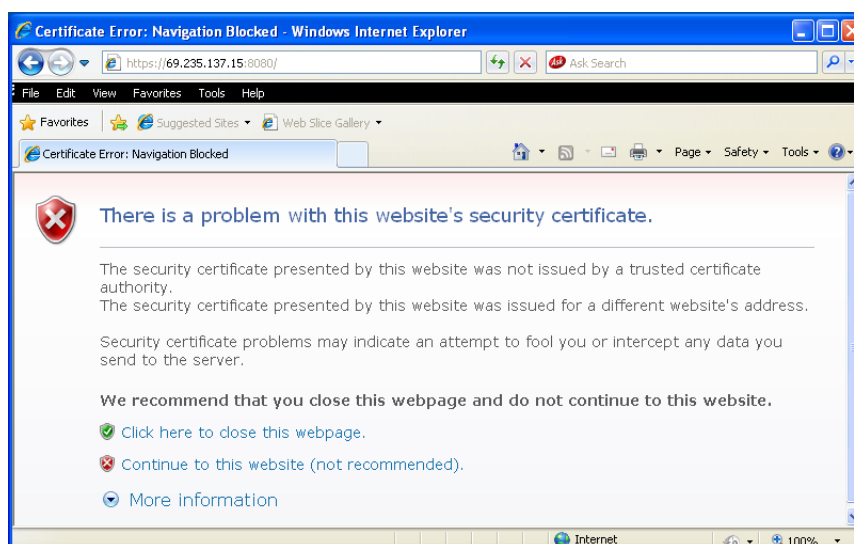
### Other

- FXS phones are omitted from the Stations Directory on the phones. (CSCtf45911)
- On a wireless network with Security Strength set to None, changes in the Network Name (SSID) are not successfully communicated to wirelessly connected phones. (CSCtl43344)  
**Work Around:** Use a stronger security setting (strongly recommended). Alternatively, work around this issue by temporarily connecting the wireless phones to the network with Ethernet cables. After the phone reboot, they will receive the new wireless network settings, and you can disconnect the cables.
- After a new Shared FXO Line is configured for a Cisco SPA8800 gateway, a member phone may display a “no service” message. (CSCtj54415)  
**Work Around:** Reboot the Cisco SPA8800 gateway.
- The star codes for parking and unparking calls (\*38 and \*39) do not work on FXS phones. (CSCth88200)
- The settings menu on the phone screen allows the user to edit the IP address and other network settings. Users should not change these settings. Any changes will be overwritten by the settings entered in the configuration utility. (CSCti02670)
- Star code 66 (call back) does not work on analog phones. (CSCto74691)

- After an initial configuration is applied, further changes in the phone language preference may be made only through the phone menus (to avoid losing user settings).

**Work Around:**

- On SPA50x models, press the Setup button and then choose the Language menu. Choose a language from the list, and then press Select.
- On SPA525G/G2, press the Setup button and then choose the Device Administration menu. In the Language field, press the right-arrow navigation button, choose a language from the list, and then press Select.
- A certificate warning may appear when you connect to the configuration utility by using HTTPS. You can acknowledge the message and continue to the website. (CSCtn24097)



- When you restart the Cisco UC320W from the *Status > Devices* page, the phones' Call History records remain. To remove Call History records, reset the phones by using the phone menu.
- When a call is forwarded to an external number, the call is not identified with the user-specific CLID but instead uses the default CLID for the SIP trunk. (CSCtr07810)
- Call transfers to external numbers fail from an analog phone that is connected to a Cisco SPA8800 FXS port. (CSCtr76487)

# Required Equipment and Services

For best results, please be aware of the following requirements:

- **Internet service:** An active Internet connection is required, and the system must be able to establish a WAN connection during the initial configuration process.  
**Note:** The phones and Cisco SPA8800 gateways restart when the Internet connection is lost or the WAN IP address changes (for example, when a DHCP lease expires). If you have ongoing issues with DHCP lease renewal, consider obtaining a static IP address from your Internet Service Provider.
- **Ethernet switch selection:** If you wish to install an Ethernet switch with your Unified Communications system, Cisco recommends Cisco Small Business 300 Series Managed Switches and Cisco ESW500 Series Ethernet Switches. These switches require no special configuration for use with the Cisco UC320W. Other switches may require special configuration of the voice VLAN (100). For more information about switch configuration, see [www.cisco.com/go/partner/smartdesigns](http://www.cisco.com/go/partner/smartdesigns)  
**Note:** Be sure to upgrade your switch to the latest firmware before installing it into the Cisco UC320W LAN.
- **Web browser:** For best results, use Internet Explorer version 7 or 8 or Mozilla Firefox version 3.6.
- **Adobe Flash player:** The configuration utility requires the free Adobe Flash player version 10.1 or later. To install the latest version, see <http://get.adobe.com/flashplayer/>.

## Upgrading the Firmware

Cisco recommends that you install the latest firmware as it becomes available. You can install the firmware from the Cloud or from a file on your computer.



**CAUTION** Before you can upgrade to Release Candidate 2.1.0(22), you must install interim version 2.0.12(8). If you do not install the interim release first, the upgrade to 2.1.0(22) will fail. This process is streamlined by installing the firmware from the Cloud.

See the following topics:

- [Installing Updates from the Cloud, page 14](#)
- [Upgrading from a File on Your PC, page 15](#)

### NOTE

- As a best practice, back up your configuration before you begin the upgrade process.
- If the new firmware involves changes in required settings, error icons may appear on some configuration pages after the upgrade is completed. Read the messages on the screen to learn more.
- Configuration files are not backward compatible. If you back up a configuration file and later downgrade to an earlier version of the firmware, you cannot restore that configuration file.
- For best results, close other browser windows before starting an upgrade. When other browser windows are open, the browser may display memory errors.
- Due to the large file size, do not use a wireless connection to upgrade the firmware.
- For best results, ensure that the WAN port of the Cisco UC320W is physically connected to your WAN or Internet access device.
- If you have a slow WAN link or are experiencing errors on the WAN connection, the application may stall when attempting to install updates from the Cloud. If this occurs, use the manual upgrade process instead. See [Upgrading from a File on Your PC, page 15](#).

### Installing Updates from the Cloud

When the Cisco UC320W has access to the Cloud, firmware updates are offered periodically. Cisco recommends installing the latest firmware. You can click a button to immediately upgrade the firmware, or wait for a more convenient time. For the upgrade from firmware version 2.0.x to 2.1.0(x), the Upgrade Utility streamlines the required two-step upgrade process.

**NOTE** This process requires an active Internet connection.

#### Performing the two-step upgrade by installing from the Cloud:

- 
- STEP 1** When the *Firmware Available* window appears, click the **Install** button for Release Candidate 2.1.0(22). If this window does not appear, click the **Upgrade Available** link to display it.
  - STEP 2** Read the message about the two-step process, and then click **Continue**. The *Update Status* window appears, and status indicators display the progress of the upgrade.
  - STEP 3** When the **Restart the Configuration Utility** button appears, click it to continue with the second part of the upgrade process. The *Update Status* window reappears, and status indicators display the progress of upgrade.
  - STEP 4** When the login window appears, enter your username and password and click **Log In**.
  - STEP 5** Click the **Apply Configuration Required** button to apply the updates to the connected hardware.
-

## Upgrading from a File on Your PC

Use this procedure if you have a slow WAN connection or if you prefer to upgrade the firmware without being connected to the Internet. To upgrade from firmware version 2.0.x, download the files for firmware version 2.0.12(8) and Release Candidate 2.1.0(22). Then follow this procedure to complete the two-part upgrade process.



**CAUTION** If you do not install firmware version 2.0.12(8) first, the upgrade to Release Candidate 2.1.0(22) will fail. After installing firmware version 2.0.12(8), immediately install Release Candidate 2.1.0(22) as described in this procedure.

### Using downloaded firmware to complete the two-part upgrade for Release Candidate 2.1.0(22):

**STEP 1** After downloading the 2.0.12(8) and 2.1.0(22) firmware, extract the BIN files from the downloaded ZIP files.

**STEP 2** Install firmware version 2.0.12(8) as described below.

- a. Launch the Cisco UC320W Configuration Utility.
- b. Click the **Status** menu, and then click **Devices**.
- c. Click the **Upgrade from your PC** button.
- d. When the confirmation message appears, click **OK** to continue.
- e. After clicking **OK**, select the BIN file for 2.0.12(8), and then click **Open**. Status indicators appear as the upgrade proceeds.
- f. When the upgrade is complete, the device status window appears. You can wait for all devices to be detected, or click the button to launch the Configuration Utility without waiting.

**Note:** If the *Firmware Available* window appears, you can either install Release Candidate 2.1.0(22) from the Cloud or click the **Close** button to continue with the manual upgrade process.

**STEP 3** Install Release Candidate 2.1.0(22) as described below.

- a. Read the message about the Upgrade Utility, and then click the **Upgrade from Your PC** link near the top of the window.

## Release Notes

---

**IMPORTANT:** When using the Upgrade Utility, do not factory reset the Cisco UC320W.

- b. Click **Choose File**, and select the BIN file for 2.1.0(22).
- c. Click **Upgrade**. Status indicators appear as the upgrade proceeds.

**STEP 4** When the login window appears, enter your username and password and click **Log In**.

**STEP 5** Click the **Apply Configuration Required** button to apply the updates to the connected hardware.

---

## 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 UC320W.

Support	
Cisco Small Business Support Community	<a href="http://www.cisco.com/go/smallbizsupport">www.cisco.com/go/smallbizsupport</a>
Cisco Small Business Support and Resources	<a href="http://www.cisco.com/go/smallbizhelp">www.cisco.com/go/smallbizhelp</a>
Phone Support Contacts	<a href="http://www.cisco.com/go/sbcs">www.cisco.com/go/sbcs</a>
Cisco UC320W Firmware Downloads	<a href="http://www.cisco.com/go/uc300">www.cisco.com/go/uc300</a>
Cisco Small Business Open Source Requests	<a href="http://www.cisco.com/go/smallbiz_opensource_request">www.cisco.com/go/smallbiz_opensource_request</a>
Product Documentation	
Unified Communications Cisco UC320W	<a href="http://www.cisco.com/go/uc300">www.cisco.com/go/uc300</a> Select the Resources tab for links to all technical documentation.
Smart Designs	<a href="http://www.cisco.com/go/partner/smartdesigns">www.cisco.com/go/partner/smartdesigns</a>
Cisco SPA300 Series IP Phones	<a href="http://www.cisco.com/go/300phones">www.cisco.com/go/300phones</a>
Cisco SPA500 Series IP Phones	<a href="http://www.cisco.com/go/spa500phones">www.cisco.com/go/spa500phones</a>
Cisco SA500 Series Security Appliances	<a href="http://www.cisco.com/go/sa500">www.cisco.com/go/sa500</a>



Cisco ESW500 Ethernet Switches	<a href="http://www.cisco.com/go/esw500help">www.cisco.com/go/esw500help</a>
Cisco SPA8800 IP Telephony Gateway	<a href="http://www.cisco.com/go/gateways">www.cisco.com/go/gateways</a>
<b>Cisco Small Business</b>	
Cisco Partner Central for Small Business (Partner Login Required)	<a href="http://www.cisco.com/web/partners/sell/smb">www.cisco.com/web/partners/sell/smb</a>
Cisco Small Business Home	<a href="http://www.cisco.com/smb">www.cisco.com/smb</a>

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

© 2011 Cisco Systems, Inc. All rights reserved.

OL-25259-01