



Troubleshooting the Cisco Wireless IP Phone 7920

This chapter provides information that can assist you in troubleshooting problems with your Cisco Wireless IP Phone, in your IP telephony network, or with using the Cisco 7920 Configuration Utility.

For additional troubleshooting information, you can refer to the *Wireless 7920 Design and Deployment Guide* and the *Cisco CallManager Troubleshooting Guide*.

This chapter includes the following sections:

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [General Troubleshooting Information, page 9-17](#)
- [Administration Options on the Phone Menus, page 9-21](#)
- [Cisco 7920 Configuration Utility Troubleshooting Tips, page 9-28](#)
- [Where to Go for More Troubleshooting Information, page 9-32](#)

Resolving Startup and Connectivity Problems

After installing a Cisco Wireless IP Phone on your network and adding it to Cisco CallManager, the phone should start up as described in the [“Understanding the Phone Startup Process” section on page 2-21](#). If the phone does not start up properly, see the following sections for troubleshooting information:

- [Symptom: The Cisco Wireless IP Phone Does Not Complete the Normal Start Up Process, page 9-2](#)
- [Symptom: The Cisco Wireless IP Phone Does Not Associate with a Cisco Aironet Access Point, page 9-3](#)
- [Symptom: The Cisco Wireless IP Phone Does Not Register with Cisco CallManager, page 9-5](#)

Symptom: The Cisco Wireless IP Phone Does Not Complete the Normal Start Up Process

When a Cisco Wireless IP Phone connects to the wireless network, the phone should go through its normal startup process and the phone screen should display information. If the phone does not complete the startup process, the cause might be due to low RF signal strength, network outages, a dead battery in the phone, or the phone might not be functional.

To determine whether the phone is functional, follow these suggestions to systematically eliminate these potential problems:

1. Verify that the wired network is accessible by placing calls to and from other wired Cisco IP Phones.
2. Verify that the wireless network is accessible:
 - Power on another previously functional Cisco Wireless IP Phone 7920 to verify that the access point is active.
 - Power on the Cisco Wireless IP Phone that will not start up and move to a different access point location that is known to be good.
3. Verify that the phone is receiving power:
 - If you see “Low Battery” on the phone screen, the battery might be dead.

- Insert a new or fully charged battery in the Cisco Wireless IP Phone that will not start up.
- If you are using the battery, try plugging in the external power supply instead.

If, after attempting these solutions, the phone still does not start up, contact a Cisco technical support representative for additional assistance.

Symptom: The Cisco Wireless IP Phone Does Not Associate with a Cisco Aironet Access Point

After the Greeting Message displays, if a phone continues to cycle through messages displaying on the phone screen, the phone is not associating with the access point properly. The phone cannot successfully start up unless it associates and authenticates with an access point.

Verifying Access Point Settings

The Cisco Wireless IP Phone 7920 must first authenticate and associate with an access point before it can obtain an IP address. The phone follows this start up process with the access point:

- Scans for an access point
- Associates with an access point
- Authenticates using LEAP
- Obtains an IP address

Check the SSID settings on the access point and on the phone to be sure the SSID matches.

Check the authentication type settings on the access point and on the phone to be sure authentication/encryption settings match.



Note If the message, “No Service - IP Config Failed,” DHCP failed because the encryption between the access point and phone do not match.

If using static WEP, check the WEP key on the phone to be sure it matches the WEP key on the access point. Reenter the WEP key on the phone to be sure it is correct.



Note If open authentication is set, the phone is able to associate to an access point although the WEP keys are incorrect or mismatched.

Error Messages During Authentication

If you see the following error messages, check these problems:

Authentication failed, No AP found

- Check if CCKM and ciphers are enabled on the access point. These features are supported only with release 2.0. For earlier releases, set CCKM to “Optional” and only use WEP ciphers.
- Check that the correct SSID is entered on the phone.
- Check that the WEP settings on the phone and the access point match.
- If using LEAP, check that the correct LEAP username and password are entered on phone.

LEAP authentication failed

- If you are using LEAP, you might need to enter the LEAP user name on the phone in the *domain\username* format when authenticating with a Windows domain.
- Check that the correct LEAP username and password are entered on phone.

AP Error—Cannot support all requested capabilities

On the access point, check that CKIP/CMIC or AES are not enabled for the voice VLAN SSID. The Cisco Wireless IP Phone 7920 does not support these features.

Symptom: The Cisco Wireless IP Phone Does Not Register with Cisco CallManager

If a phone proceeds past the first stage (authenticating with access point), and, continues to cycle through the messages displaying on the phone screen, the phone is not starting up properly. The phone cannot successfully start up until it connects to the LAN and registers with a Cisco CallManager server.

These sections can assist you in determining the reason that the phone is unable to start up properly:

- [Registering the Phone with Cisco CallManager, page 9-5](#)
- [Checking Network Connectivity, page 9-6](#)
- [Verifying TFTP Server Settings, page 9-6](#)
- [Verifying IP Addressing, page 9-7](#)
- [Verifying DNS Settings, page 9-8](#)
- [Verifying Cisco CallManager Settings, page 9-8](#)
- [Cisco CallManager and TFTP Services Are Not Running, page 9-8](#)
- [Creating a New Configuration File, page 9-9](#)

Registering the Phone with Cisco CallManager

A Cisco Wireless IP Phone 7920 can register with a Cisco CallManager server only if the phone has been added to the server or if auto-registration is enabled. If you see the error message, “Registration Rejected,” review the information and procedures in the [“Adding Users to Cisco CallManager” section on page 7-13](#) to ensure that the phone has been added to the Cisco CallManager database.

In Cisco CallManager versions earlier than 3.3(3) SR 1, the Cisco Wireless IP Phone 7920 shows up as a Cisco IP Phone 7960, because the 7920 phone device type was not available. See the [“Determining the MAC Address of a Cisco IP Phone” section on page 3-10](#) for more information and how to correct this problem.

To verify that the phone is in the Cisco CallManager database, choose **Device > Phone > Find** from Cisco CallManager Administration to search for the phone based on its MAC Address. (To determine the MAC address of a phone, see the [“Viewing the Media Access Control Address”](#) section on page 6-5.)

If the phone is already in the Cisco CallManager database, its configuration file may be damaged. See the [“Creating a New Configuration File”](#) section on page 9-9 for assistance.

Checking Network Connectivity

If the network is down between the access point and the TFTP server or Cisco CallManager, the phone cannot start up properly. Ensure that IP connectivity exists between the WLAN and the Cisco CallManager and TFTP servers.

Verifying TFTP Server Settings

The Cisco Wireless IP Phone 7920 uses the TFTP server setting to identify the primary TFTP server to use. If the TFTP server does not respond to the request, then the CallManager1 (CM1) shows as TFTP_AS_CM if the phone has not registered with Cisco CallManager before.



Note If the phone has previously registered with Cisco CallManager, the Cisco CallManager list information is cached in memory. If TFTP fails, you must power cycle the phone to connect to the TFTP server.

The phone tries to create a TCP connection to the TFTP IP address and then to the gateway. If Cisco CallManager service is not running on the TFTP server, or if SRST is not running on the gateway, the Cisco Wireless IP Phone may continually cycle while attempting to contact the identified TFTP server.

The Cisco Wireless IP Phone 7920 does not cache the IP information passed from the DHCP server, so the TFTP request must be sent and responded to every time the phone power cycles.

If you have assigned a static IP address to the phone, you must manually enter this setting. See the [“Configuring Static Settings”](#) section on page 5-6.

If you are using DHCP, the phone obtains the address for the TFTP server from the DHCP server. Check the IP address configured in Option 150 or Option 66. Refer to *Configuring Windows 2000 DHCP Server for Cisco Call Manager* available at this URL:

http://www.cisco.com/warp/customer/788/AVVID/win2000_dhcp.html

You can also enable the phone to use a static TFTP server. Such a setting is particularly useful if the phone was recently moved from one location to another.

For information about determining and changing TFTP server settings, see “Configuring TFTP Option” section on page 5-9 or “Viewing the Current Configuration” section on page 8-17.

Verifying IP Addressing

You should verify the IP addressing for the Cisco Wireless IP Phone 7920. If you are using DHCP, the DHCP server should provide these values. If you have assigned a static IP address to the phone, you must enter these values manually.



Note

When the Cisco Wireless IP Phone loses the RF signal (goes out of the coverage area), the phone will not release the DHCP server unless it reaches the time-out state.

Check for these problems:

- DHCP Server—If you have assigned a static IP address to the phone, you do not need to enter a value for the DHCP Server option. If you are using a DHCP server, and the wireless IP phone gets a response from the DHCP server, the information is automatically configured. Refer to *Troubleshooting Switch Port Problems*, available at this URL:
<http://www.cisco.com/warp/customer/473/53.shtml>
- IP Address, Subnet Mask, Primary Gateway—If you have assigned a static IP address to the phone, you must configure settings for these options. See the “Configuring Static Settings” section on page 5-6.

If you are using DHCP, check the IP addresses distributed by your DHCP server. Be aware of DHCP conflicts and duplicate IP addresses. Refer to *Understanding and Troubleshooting DHCP in Catalyst Switch or Enterprise Networks*, available at this URL: <http://www.cisco.com/warp/customer/473/100.html#41>

For information about determining and changing IP addressing, see [Chapter 5, “Configuring Network Profiles on the Cisco Wireless IP Phone 7920.”](#)

Verifying DNS Settings

If you are using DNS to refer to Cisco CallManager, you must ensure that you have specified a DNS server. You should also verify that there is a CNAME entry in the DNS server for the Cisco CallManager system.

You must also ensure that DNS is configured to do reverse look-ups. The default setting on Windows 2000 is to perform forward-only look-ups.

For information about determining and changing DNS settings, see [“Modifying DHCP Settings” section on page 5-4](#)

Verifying Cisco CallManager Settings

The Cisco Wireless IP Phone 7920 attempts to open a TCP connection to all the Cisco CallManager servers that are part of the assigned Cisco CallManager group. Take one of these actions to verify Cisco CallManager settings:

- On the Cisco Wireless IP Phone 7920, choose **Menu > Network Config > Current Configuration** and look at the **CallManager 1–4** options. (See [“Viewing the Current Configuration” section on page 8-17.](#))
- If none of the Cisco CallManager options contain IP addresses or show Active or Standby, the phone is not properly registered with Cisco CallManager. See the [“Registering the Phone with Cisco CallManager” section on page 9-5](#) for tips on resolving this problem.

Cisco CallManager and TFTP Services Are Not Running

If the Cisco CallManager or TFTP services are not running, phones might not be able to start up properly. However, in such situations, it is likely that you are experiencing a system-wide failure and that other phones and devices are unable to start up properly.

If the Cisco CallManager service is not running, all devices on the network that rely on it to make phone calls will be affected. If the TFTP service is not running, many devices will not be able to start up successfully.

To check that all services are running, follow these steps:

Procedure

- Step 1** From Cisco CallManager Administration, choose **Application > Cisco CallManager Serviceability**.
 - Step 2** Choose **Tools > Control Center**.
 - Step 3** From the Servers column, choose the primary Cisco CallManager server.
The page displays the service names for the server that you chose, the status of the services, and a service control panel to stop or start a service.
 - Step 4** If a service has stopped, click the **Start** button.
The Service Status symbol changes from a square to an arrow.
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Note For more information about services, refer to *Cisco CallManager Administration Guide* for more information.

Creating a New Configuration File

If you continue to have problems with a particular phone that other suggestions in this chapter do not resolve, the configuration file might be corrupted.

To create a new configuration file, follow these steps:

Procedure

- Step 1** From Cisco CallManager, select **Device > Phone > Find** to locate the phone experiencing problems.
 - Step 2** Choose **Delete** to remove the phone from the Cisco CallManager database.
 - Step 3** Add the phone back to the Cisco CallManager database. See the [“Adding Users to Cisco CallManager” section on page 7-13](#) for details.
 - Step 4** Power cycle the Cisco Wireless IP Phone.
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**Note**

When you remove a phone from the Cisco CallManager database, its configuration file is deleted from the Cisco CallManager TFTP server. The directory number (DN) remains in the Cisco CallManager database as an unassigned DN. You can assign these DNs to other devices or delete them from the Cisco CallManager database. You can use the Route Plan Report to view and delete unassigned reference numbers. Refer to *Cisco CallManager Administration Guide* for more information.

Related Topics

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [Troubleshooting Tips for the Cisco Wireless IP Phone 7920, page 9-17](#)

Resolving Voice Quality and Roaming Problems

Cisco Wireless IP Phone 7920 users might have problems with voice quality and connectivity when roaming with their phones. See the following sections for troubleshooting information:

- [Symptom: Cisco Wireless IP Phone Resets Unexpectedly, page 9-10](#)
- [Symptom: The Cisco Wireless IP Phone Has Audio Problems, page 9-14](#)
- [Symptom: The Cisco Wireless IP Phone Does Not Roam Properly, page 9-15](#)

Symptom: Cisco Wireless IP Phone Resets Unexpectedly

If users report that their phones are resetting during calls or resetting while idle on their desk, you should investigate the cause. If the network connection and Cisco CallManager connection are stable, a Cisco Wireless IP Phone 7920 should not reset on its own.

Typically, a phone resets if it has problems connecting to the access point and LAN or to Cisco CallManager. These sections can help you identify the cause of a phone resetting in your network:

- [Verifying Access Point Settings, page 9-11](#)
- [Identifying Intermittent Network Outages, page 9-11](#)
- [Verifying DHCP Settings, page 9-11](#)
- [Verifying Voice VLAN Configuration, page 9-12](#)
- [Verifying that the Phones Have Not Been Intentionally Reset, page 9-12](#)
- [Eliminating DNS or Other Connectivity Errors, page 9-13](#)

Verifying Access Point Settings

Verify that the wireless configuration is correct. For example, check if the particular access point or switch to which the phone is connected is down. See the [“Wireless Network and Access Point Configuration” section on page 2-19](#) for information about access point settings.

Identifying Intermittent Network Outages

Intermittent network outages affect data and voice traffic differently. Your network might have been experiencing intermittent outages without detection. If so, data traffic can resend lost packets and verify that packets are received and transmitted. However, voice traffic cannot recapture lost packets. The phone can retransmit and attempt to recover, or if the phone reaches the maximum retransmit rate, it drops the packets or loses association with the access point.

If you are experiencing problems with the voice network, you should investigate whether an existing problem is simply being exposed.

Verifying DHCP Settings

To determine if the phone has been properly configured to use DHCP, follow these steps:

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- Step 1** Verify that you have properly configured the phone to use DHCP. See the [“Modifying DHCP Settings” section on page 5-4](#) for details.

- Step 2** Verify that the DHCP server has been set up properly.
- Step 3** Verify the DHCP lease duration. Your local policy determines this setting.
- Cisco IP Phones send messages with request type 151 to renew their DHCP address leases. If the DHCP server expects messages with request type 150, the lease will be denied, forcing the phone to restart and request a new IP address from the DHCP server.
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Verifying Voice VLAN Configuration

If the Cisco IP Phone appears to reset during heavy network usage (for example, following extensive web surfing on a computer connected to same access point and switch as phone), it is likely that you do not have a voice VLAN or the appropriate QoS settings configured.

By isolating the wireless phones on a separate auxiliary VLAN, you can use QoS to prioritize the voice traffic over data traffic and improve the voice quality. See the [“Voice Quality in a Wireless Network”](#) section on page 2-12 for details.

Verifying that the Phones Have Not Been Intentionally Reset

If you are not the only administrator with access to Cisco CallManager, you should verify that no one else has intentionally reset the phones.

Eliminating DNS or Other Connectivity Errors

If the phone does not register with Cisco CallManager, check to see if you are using host names or IP addresses for Cisco CallManager servers.

To eliminate DNS or other connectivity errors, follow these steps:

Procedure

- Step 1** Reset the phone to factory defaults. See the [“Erasing the Local Configuration” section on page 9-22](#) for details.
- Step 2** Modify DHCP and IP settings:
- Disable DHCP. See the [“Modifying DHCP Settings” section on page 5-4](#) for details.
 - Assign static IP values to the phone. See the [“Configuring Static Settings” section on page 5-6](#) for details. Use the same default router setting used for other functioning Cisco IP Phones.
 - Assign a TFTP server. See the [“Configuring TFTP Option” section on page 5-9](#) for details. Use the same TFTP server used for other functioning Cisco IP Phones.
- Step 3** From Cisco CallManager, choose **System > Server** and verify that the server is referred to by its IP address and not by its host name.



Note Cisco recommends that you configure IP addresses only and not host names to eliminate the DNS resolution in the phone registration process.

- Step 4** From Cisco CallManager, select **Device > Phone** and verify that you have assigned the correct MAC address to this Cisco IP Phone.
- To determine the MAC address of a phone, see the [“Viewing the Media Access Control Address” section on page 6-5](#).
- Step 5** Power cycle the phone.
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Symptom: The Cisco Wireless IP Phone Has Audio Problems

When users report that active phone calls have poor voice quality that includes choppy audio, static or gaps in audio, or no audio, you can use the following suggestions to identify the cause of the problem.

These sections can assist you with the following symptoms:

- [No Audio During a Connected Call, page 9-14](#)
- [One-Way Audio During a Connected Call, page 9-14](#)

No Audio During a Connected Call

If you are not using release 2.0, then you must disable TKIP and MIC features on the access point. These features are only supported with release 2.0 on the Cisco Wireless IP Phone 7920.

One-Way Audio During a Connected Call

Use the following list to identify possible causes for the problem:

- Check the access point to see that the transmit power setting matches the transmit power setting on the phone. One-way audio is common when the access point power setting is greater (100mW) than that of the phone (20mW).

Cisco Wireless IP Phone 7920 Firmware Release 1.08 and later supports dynamic transmit power control (DTPC). The phone uses the transmit power that the access point advertises upon association.

**Note**

With DTCP, if Client Transmit Power is set in the access point, the phone automatically uses the same client power setting. If the access point is set for the maximum setting (Max), the access point uses the Transmit Power setting on the phone.

- Check that the access point is enabled for ARP caching. When the Cisco Wireless IP Phone 7920 is in power save mode or scanning, the access point can respond to the wireless IP phone only when ARP caching is enabled.

See the [“Wireless Network and Access Point Configuration”](#) section on [page 2-19](#) for more information.

- Check your gateway and IP routing for voice problems.
- Check if a firewall or NAT is in the path of the RTP packets. If so, you can use Cisco IOS and PIXNAT to modify the connections so that two-way audio is possible.
- Check that the Data Rate setting for the phone and the access point are the same. These settings should match or the phone should be set for Auto. Optimize the data rate for 11 Mbps only.
- Check the phone hardware to be sure the speaker is functioning properly.
- Check the volume settings in the User Profiles menu.

Symptom: The Cisco Wireless IP Phone Does Not Roam Properly

If users report that when engaged in an active phone call and walking from one location to another (roaming), the voice quality deteriorates or the connection is lost, you can use the following suggestions to identify the cause of the problem.

These sections can assist you with the following symptoms:

- [Voice Quality Deteriorates While Roaming, page 9-16](#)
- [Delays in Voice Conversation While Roaming, page 9-16](#)
- [Phone Loses Connection with Cisco CallManager While Roaming, page 9-16](#)

Voice Quality Deteriorates While Roaming

Check the RSSI on the destination access point to see if the signal strength is adequate. The next access point should have an RSSI value of 35 or greater.

Check the site survey to determine if the channel overlap is adequate for the phone and the access point to hand off the call to the next access point before the signal is lost from the previous access point.

Check to see if noise or interference in the coverage area is too great.

Check that signal to noise ratio (SNR) levels are 25 db or higher for acceptable voice quality.

Delays in Voice Conversation While Roaming

Use the Site Survey Utility on the Cisco Wireless IP Phone 7920 to see if there is another acceptable access point as a roaming option. The next access point should have an RSSI value of 35 or greater to roam successfully.

Check the Cisco Catalyst 45xx switch to see if it has the correct version of Supervisor (SUP) blades. The blades must be versions SUP2+ or higher to prevent roaming delays.

Phone Loses Connection with Cisco CallManager While Roaming

Check that the RF signal strength is good. Use the Site Survey Tool and check the RSSI value for the next access point.

Check that the next access point has connectivity to Cisco CallManager.

Check that the next access point has the same authentication type as the phone. There might be a mismatch.

Check that the access point is in the same subnet as the previous access point. The Cisco Wireless IP Phone 7920 is capable of Layer 2 roaming only.

Layer 3 roaming requires WLSM that uses GRE

If using LEAP authentication, check that the access point is not using filters to block TCP ports. The ACS server uses port 1645 for authentication and 1646 for accounting and the RADIUS server uses port 1812 for authentication and 1813 for accounting.

Related Topics

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [General Troubleshooting Information, page 9-17](#)

General Troubleshooting Information

The following topics provide general information and tips for troubleshooting the Cisco Wireless IP Phone 7920.

- [Troubleshooting Tips for the Cisco Wireless IP Phone 7920, page 9-17](#)
- [Logging Information for Troubleshooting, page 9-20](#)

Troubleshooting Tips for the Cisco Wireless IP Phone 7920

[Table 9-1](#) provides general troubleshooting information for the Cisco Wireless IP Phone.

Table 9-1 *Cisco Wireless IP Phone Troubleshooting*

Summary	Explanation
Phone gets warm	<p>The phone may get warm when calls are in progress and when you frequently use the phone.</p> <p>If the phone is not registered with a Cisco CallManager server, it does not go into power save mode and becomes warm.</p>
Phone is resetting	<p>The phone resets when it loses contact with the Cisco CallManager software. This lost connection can be due to any network connectivity disruption, including access point problems, switch outages, and switch reboots.</p> <p>See the “Symptom: Cisco Wireless IP Phone Resets Unexpectedly” section on page 9-10.</p>

Table 9-1 Cisco Wireless IP Phone Troubleshooting (continued)

Summary	Explanation
Time on phone is incorrect	<p>Sometimes the time or date on the phone is incorrect. The Cisco Wireless IP Phone 7920 gets its time and date when it registers with Cisco CallManager. Power cycle the phone to reset the time or date.</p> <p>The time shows in military time (24 hour) format.</p>
Ring volume is too low	<p>To see if the ring volume is set correctly on the phone, choose Menu > Profiles > Ring Volume. Scroll to the right for the highest volume.</p> <p>You can download loud ring tones from the Software Download page on Cisco.com. See the “Downloading Loud Ring Tones” section on page 7-14.</p>
Phone does not ring	<p>To see if the phone is set to ring, choose Menu > Profiles > Incoming Call Alert, and check that it is set to On.</p> <p>To see if a ring tone has been set for the phone, choose Menu > Phone Settings > Ring tones. If none is set, add a ring tone for the phone.</p> <p>To see if the speaker is functioning properly, adjust the ring volume settings to the highest level. Enable keypad tones or call the phone to check the speaker.</p>
One-way audio on phone	<p>Check that the speaker is functioning properly. Adjust the speaker volume setting and call the phone to check the speaker.</p> <p>Check that ARP caching has been set on the AP. See “Wireless Network and Access Point Configuration” section on page 2-19.</p>
Delays when roaming from one location to another	<p>If Cisco Catalyst 45xx series switches are being used as the main Layer 3 switches in the network, ensure that the supervisor blades are a minimum SUP2+ or later version. The Cisco Wireless IP Phone 7920 (or any wireless client) experiences roaming delays when an earlier version (SUP 1 or SUP2) blade is used.</p>

Table 9-1 Cisco Wireless IP Phone Troubleshooting (continued)

Summary	Explanation
Phone is locked	<p>If you press a key and see the message, “KeyLocked,” the keypad is temporarily locked. Press and hold the pound (#) key to unlock the keypad. When prompted with the message, “Keylock off?” press OK to unlock the keypad.</p> <p>When powering on the phone, if you are prompted to enter a password, try entering the default password, 12345 and pressing OK. If this password unlocks the phone, the phone associates with the access point.</p> <p>If these options do not unlock the phone, you must call Cisco Technical Assistance Center (TAC) to have the phone unlocked.</p> <p>Note When TAC uses the master password to unlock a phone, all configuration is lost including the phone book entries.</p>
Phone firmware downgrades	<p>After applying a Cisco CallManager upgrade or patch, that is older than the current Cisco Wireless IP Phone 7920 firmware, the phones could automatically downgrade to the load contained in the patch. Check the Cisco CallManager 7920 device default image in the TFTP folder to fix this problem.</p>
Battery life is shorter than specified	<p>An unstable RF environment can cause the phone to remain in active mode because it is constantly seeking an AP. This reduces the battery life considerably. When leaving an area of coverage, shut down the phone.</p> <p>Vibrate mode can reduce battery life, but back light should not affect the battery.</p> <p>Higher phone transmit power can affect battery life.</p> <p>To maximize idle time on the phone and conserve battery life, you need to optimize the registration time so the phone can go into power save mode more often.</p>

Related Topics

- [Logging Information for Troubleshooting, page 9-20](#)
- [Troubleshooting Information for Basic Problems, page 9-28](#)

Logging Information for Troubleshooting

The following options can help you gather troubleshooting information:

- [Using a System Log Server, page 9-20](#)
- [Using the Trace Route Option on the Cisco Wireless IP Phone, page 9-20](#)

Using a System Log Server

To gather information about problems with the wired network that can cause roaming delays or no connectivity, set up a system log server. Enable “syslog” on the network switches and access points that is logged to the system log server. Also enable Network Time Protocol (NTP) so that all access points and switches use the same times.

Using the Trace Route Option on the Cisco Wireless IP Phone

When you are experiencing problems with registering with Cisco CallManager, or call connections, you can use this function to trace the path of a packet from the phone to Cisco CallManager. The result shows the number of hops and the IP address of each hop to reach the Cisco CallManager server. You can use this information to check connectivity between the phone, Cisco CallManager servers and gateways during a call.

For information about using the Trace Route option, see the [“Performing a Trace Route” section on page 9-24](#).

Related Topics

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [Administration Options on the Phone Menus, page 9-21](#)
- [Cisco 7920 Configuration Utility Troubleshooting Tips, page 9-28](#)

Administration Options on the Phone Menus






Administrative options in the Network Config and Phone Settings menus are hidden by default to prevent users from making changes that could affect the operation of a phone. You must start the administration mode on the phone to use the options. After opening the hidden options, these settings are hidden automatically when you power off the phone. For more information, see the following topics:

- [Accessing Hidden Options on the Phone Menus, page 9-21](#)
- [Using Hidden Options on the Phone Menus, page 9-22](#)

Accessing Hidden Options on the Phone Menus

To open administrative options on the Cisco Wireless IP Phone 7920, follow these steps:

Procedure

- Step 1** Press the **Menu** softkey.
- Step 2** Press  (star key),  (pound key), and then  (pound key) .
- Step 3** Then press the green  key to open administrative mode.
Hidden options in the Network Config and Phone Settings menu appear.
- Step 4** To hide the options, press any key in the first level submenu. Then press the green  key.
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Related Topics

- [Using Hidden Options on the Phone Menus, page 9-22](#)
- [Troubleshooting Information for Basic Problems, page 9-28](#)

Using Hidden Options on the Phone Menus

The hidden administrative settings are for troubleshooting only. You can temporarily change some parameter settings, such as power save while you are in administrative mode. When the phone is powered off and powered on, the default settings for the phone are restored.

The following hidden options are available to administrators for administrative and troubleshooting purposes:

- [Erasing the Local Configuration, page 9-22](#)
- [Using Power Save Mode, page 9-23](#)
- [Setting the Softkey Option, page 9-23](#)
- [Performing a Trace Route, page 9-24](#)
- [Selecting the Data Rate, page 9-25](#)
- [Selecting the Transmit Power, page 9-26](#)
- [Changing the Cisco Discovery Protocol Settings, page 9-27](#)



Note

When you access the administrative mode functions on the Cisco Wireless IP Phone 7920, you might see additional hidden options and administrative mode parameters beyond those that are listed. TAC uses these options for troubleshooting phone and wireless network issues.

Erasing the Local Configuration

You can clear all locally stored configuration options in a phone by using the Phone Settings menu. When you use the restore to factory default option, all user-defined entries in Speed Dial, Profiles, Phone Settings, and Call History are erased, but the Phone Book entries remain.



Note

You can also use the Cisco 7920 Configuration Utility to erase the local configuration.

To erase the local configuration by using the phone menu, follow these steps:

Procedure

-
- Step 1** Press **Menu > Phone Settings > Factory Default**.
The phone displays “Restore to Default?”
- Step 2** Press the **OK** softkey. All settings are deleted.
The phone cycles through normal startup procedures.
- Step 3** Press **Menu > Network Config** to reconfigure the network settings for your WLAN.
-



Caution

Erasing the local configuration removes user-defined changes in speed dial, phone settings, and profiles that are made locally on the Cisco Wireless IP Phone. All call history entries are removed, and all network settings are set back to the default values. Only the personal phone book entries are retained. You must reconfigure the network settings for the phone to access the network again.

Using Power Save Mode

You need to keep the power save mode enabled. If you disable power save, the phone radio stays in active mode. The battery life lasts only as long as the talk time duration of up to 3.5 hours for a standard battery.

Setting the Softkey Option

You can choose whether the softkey to access the Phone Book (*PhBook*) or the softkey to access Services (*Svcs*) displays when the phone is idle. You can also set whether to display the *MuteOn* softkey during a call or to display the softkeys as they are configured in the softkey template that is assigned to the phone.

You can also set these from the Cisco CallManager Administration in the Phone Configuration page, where you can use the Product Specific Configuration Options. The settings in the Cisco CallManager configuration file override the settings on the phone. For more information, see the [“Configuring Softkey Templates” section on page 7-8](#).

To set the softkey settings option, follow these steps:

Procedure

- Step 1** Press the **Menu** softkey.
 - Step 2** Choose the **Phone Settings** menu.
 - Step 3** Scroll to **Softkey Setting** and press **Select** to open the Softkey menu.
 - Step 4** Scroll to **Idle** and press **Select** to choose the softkey that displays on the idle screen.
 - Step 5** Scroll to one of the following: **PhBook** or **Services** and press **Select**.
A check mark appears next to the selected option. Press **Back**.
 - Step 6** Scroll to **CallUp** and press **Select** to choose the softkey that displays when connected to a call.
 - Step 7** Scroll to one of the following: **Mute** or **Softkey from CM** and press **Select**.
When you select the “Softkey from CM” option, the softkeys display according to the softkey template assigned to the phone. For more information, see the [Configuring Softkey Templates, page 7-8](#).
-

Performing a Trace Route

You can use this function to trace the path of a packet from the phone to Cisco CallManager. The result shows the number of hops and the IP address of each hop to reach the Cisco CallManager server.

To perform a trace route, follow these steps:

Procedure

- Step 1** Press the **Menu** softkey.
 - Step 2** Choose the **Network Config** menu.
 - Step 3** Scroll to **Trace Route** and press **Select** to open the Trace Route menu.
 - Step 4** Enter the trace route IP address such as the destination Cisco CallManager and then press **Save**.
 - Step 5** The phone begins the tracing process, and the trace result is displayed.
 - Step 6** Press **Back** to return to the Network Config menu.
-

Selecting the Data Rate

The default setting is Auto in which the phone automatically adjusts to the data rate of the access point. You can change this setting to a value of 11 megabits per second (Mbps) or lower.



Note The data rate setting is the maximum rate that the phone uses. If set to 11 Mbps, the phone could transmit at 1, 2, 5.5 or 11 Mbps depending on the volume of traffic in the network.

If you use a setting lower than 11 Mbps, this might reduce the voice quality and the number of concurrent phone calls that the access point can handle.

To select the data rate, follow these steps:

Procedure

- Step 1** Choose **Menu > Profiles** and select the active profile.
- Step 2** Scroll to and select **802.11b Configuration > Data Rate**.

- Step 3** Scroll to the desired data rate option: 1 Mbps, 2 Mbps, 5.5 Mbps, 11Mbps or Auto.



Note Cisco recommends that you set Data Rate for Auto.

- Step 4** Press **Select** to make the change. A check mark appears next to the selected data rate.
-

Selecting the Transmit Power

Cisco Wireless IP Phone 7920 with firmware Release 1.08 and later can use dynamic transmit power control (DTPC) allowing the Cisco Wireless IP Phone to dynamically adjust its local power to the setting that the access point (running Cisco IOS only) advertises. If this is the case, you do not need to change the transmit power setting.



Note If Client Transmit Power is set in the access point, the phone automatically uses the same client power setting. If the access point is set for the maximum setting (Max), the access point uses the Transmit Power setting on the phone.

You might need to change the transmit power to offset the use of a higher gain antenna on the access point.

To change the transmit power of the phone, follow these steps:

Procedure

- Step 1** Choose **Menu > Profiles** and select the active profile.
- Step 2** Scroll to and select **802.11b Configuration > Transmit Power**.
- Step 3** Scroll to the desired transmit power option: 1 milliwatt (mW), 5 mW, 20 mW, 50 mW, or 100 mW. The default setting is 20 mW.

- Step 4** Press **Select** to make the change. A check mark appears next to the selected transmit power.
-

Changing the Cisco Discovery Protocol Settings

Some network devices do not use Cisco Discovery Protocol (CDP).

To change whether the phone transmits CDP packets and settings associated with CDP, follow these steps:

Procedure

- Step 1** Choose **Menu > Network Config** and press **Select**.
- Step 2** Scroll to **CDP TX Enable/Disable** and press **Select**.
- Step 3** Scroll to **Enable** or **Disable** and press **Select**.
- A check mark appears next to the selected item. The default is Enable. Press Back to return to the menu.
- Step 4** Scroll to **CDP TTL** (time to live) and press **Select**.
- Step 5** Press **Edit** to enter the appropriate value (default is 180). Then press **Back**.
- Step 6** Scroll to **CDP TX Interval** and press **Select**.
- Step 7** Press **Edit** to enter the appropriate value (default is 60). Then press **Back**.
-

Related Topics

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [General Troubleshooting Information, page 9-17](#)
- [Cisco 7920 Configuration Utility Troubleshooting Tips, page 9-28](#)

Cisco 7920 Configuration Utility Troubleshooting Tips

This section identifies possible problems with the Cisco Wireless IP Phone 7920 and the Cisco 7920 Configuration Utility. Possible solutions for problems and error code information are included in the following topics:

- [Troubleshooting Information for Basic Problems, page 9-28](#)
- [Windows User Interface Operation Errors, page 9-29](#)
- [TCP Connection Errors, page 9-29](#)
- [File Format or File Access Errors, page 9-30](#)
- [TFTP or Network Errors, page 9-31](#)
- [Security Errors, page 9-32](#)

Troubleshooting Information for Basic Problems

The most common causes of lost connectivity between the Cisco 7920 Configuration Utility and the Cisco Wireless IP Phone 7920 are mismatched basic settings. If the Cisco 7920 Configuration Utility does not communicate with the phone, check for possible problems with these:

- 7920 USB NIC device—Ensure that this NIC device is installed on the PC. Set the device for TCP/IP enabled and DHCP enabled.
- PC IP address—Ensure that the PC interface gets an IP address (192.168.1.X). The IP address for the phone is always 192.168.1.1. Try to ping the phone to check the IP addressing.
- USB port on phone—Use the Phone Settings menu on the phone to enable the USB port. When the phone is powered off, the USB port is reset to disable.
- Local PC firewall—Ensure that no firewall is configured on the local PC; for example, Windows XP SP2 or Cisco VPN Client.

See the [“Activating the USB Port on the Phone”](#) section on page 4-5 for instructions.

Windows User Interface Operation Errors

Table 9-2 lists error codes, possible problems, and possible solutions for Windows user interface (UI) operations when working with the Cisco 7920 Configuration Utility. When you enter values into the Windows fields, you might encounter the following errors:

Table 9-2 Windows UI Operation Errors

Error Code	Possible Problem	Possible Solution
ERR001	String length is too long.	Shorten the string length.
ERR002	Number is out of range.	Enter the number in the proper range.
ERR003	Incorrect IP address format.	Set the IP address in the range of 1.0.0.1 to 255.255.255.255, and set the subnet mask in the range of 1.0.0.0 to 255.255.255.255.

TCP Connection Errors

Table 9-3 lists error codes, possible problems, and possible solutions for TCP connection errors when working with the Cisco 7920 Configuration Utility.

Table 9-3 TCP Connection Errors

Error Code	Possible Problem	Possible Solution
ERR100	The connection has been dropped because of a network failure or because the phone failed to respond.	Check the PC's IP settings. See the “Activating the USB Port on the Phone” section on page 4-5.
ERR101	The specified address is already in use.	Close the application that has the same IP address or port number. <ul style="list-style-type: none"> TCP: The default IP address for Cisco Wireless IP Phone 7920 is 192.168.1.1; the default port number is 5001. TFTP: 69 is the default port number.

File Format or File Access Errors

Table 9-4 lists error codes, possible problems, and possible solutions for the configuration file format or file access errors when working with the Cisco 7920 Configuration Utility.

For information about the configuration file, see the “[Creating a Configuration Template](#)” section on page 4-35.

Table 9-4 File Format or File Access Errors

Error Code	Possible Problem	Possible Solution
ERR200	Disk is full, or allocation limit has been exceeded.	Free up disk space for saving files on the computer.
ERR201	Unknown setting parameter in configuration file.	If this is a new setting parameter, you can click the Skip button to ignore format checking in the Unknown Setting Window. You can also click the Delete button to delete this setting parameter in the Unknown Setting Window.
ERR202	Setting value is not available in configuration file.	Look for the missing value in the configuration file and make the correction.
ERR203	No equals sign (=) between setting parameter and setting value.	Add an equals sign (=) between the setting parameter and the setting value.
ERR204	Firmware image checksum error.	Upload the firmware image again, or check to see whether the firmware image is correct.
ERR205	Incorrect firmware image version.	The firmware image version should be available for the current Cisco Wireless IP Phone 7920. Upload the correct version of the firmware image file for your phone.
ERR206	Errors in writing firmware image into Flash memory.	Power on the Cisco Wireless IP Phone 7920 again. Contact TAC if the error remains.
ERR207	Improper firmware image file size.	Check that the firmware image version is correct for the Cisco Wireless IP Phone 7920 model.

Table 9-4 File Format or File Access Errors (continued)

Error Code	Possible Problem	Possible Solution
ERR208	The firmware image version number is different from the config load ID number.	Check that the firmware image version is correct for the Cisco Wireless IP Phone 7920 model.
ERR209	The phone is either locked, booting up, or updating the firmware image.	Check to see whether the Cisco Wireless IP Phone 7920 is locked or whether it is performing firmware image upgrade. Upload the firmware image again later.

TFTP or Network Errors

Table 9-6 lists error codes, possible problems, and possible solutions for the TFTP or network errors when working with the Cisco 7920 Configuration Utility.

Table 9-5 TFTP or Network Errors

Error Code	Possible Problem	Possible Solution
ERR300	TFTP fails in importing configuration file.	Import the configuration file again.
ERR301	TFTP fails in uploading firmware image file.	Upload the firmware image again.
ERR302	TFTP fails in uploading ring tone file.	Upload the configuration file again.
ERR303	The lines are busy.	Try to connect later.
ERR304	The memory in the Cisco Wireless IP Phone 7920 is insufficient to upload the firmware image.	Try the upload later.
ERR305	The phone does not respond; connection is closed.	Check the USB cable connection. See the “Connecting the Cisco 7920 Configuration Utility to a Phone” section on page 4-5.

Security Errors

Table 9-6 lists error codes, possible problems, and possible solutions for system errors when working with the Cisco 7920 Configuration Utility.

Table 9-6 Security Errors

Error Code	Possible Problem	Possible Solution
ERR900	Unknown username.	Enter the correct user name in the Login window.
ERR901	Password is invalid.	Enter the correct password in the Login window.

Where to Go for More Troubleshooting Information

If you have additional questions about troubleshooting the Cisco IP Phones, several Cisco.com web sites can provide you with more tips.

- Cisco IP Phone Troubleshooting Resources:
http://www.cisco.com/cgi-bin/Support/PSP/psp_view.pl?p=Hardware:IP_Phones&s=Troubleshooting
- Cisco Fixed and Mobile Wireless documentation:
<http://www.cisco.com/univercd/cc/td/doc/product/wireless/index.htm>
- Cisco Products and Technologies (Cisco Voice Applications, including Cisco CallManager):
http://www.cisco.com/warp/public/44/jump/voice_applications.shtml
- Cisco Products and Technologies (telephony, including Cisco IP Phones):
<http://www.cisco.com/warp/public/44/jump/telephony.shtml>

Related Topics

- [Resolving Startup and Connectivity Problems, page 9-2](#)
- [Resolving Voice Quality and Roaming Problems, page 9-10](#)
- [General Troubleshooting Information, page 9-17](#)
- [Administration Options on the Phone Menus, page 9-21](#)
- [Cisco 7920 Configuration Utility Troubleshooting Tips, page 9-28](#)