



# Understanding Cisco WebAttendant

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Cisco WebAttendant client-server application enables you to set up Cisco IP Phones as attendant consoles. The Cisco WebAttendant client provides a graphical user interface for controlling a Cisco IP Phone as an attendant console, including speed dial buttons and quick directory access for looking up phone numbers, monitoring line status, and directing calls. A receptionist or administrative assistant can use Cisco WebAttendant to handle calls for a department or company or an individual can use it.

The Cisco WebAttendant client, a plug-in application, installs on a PC that has IP connectivity to the Cisco CallManager system. The client works in conjunction with a Cisco IP Phone that is registered to a Cisco CallManager (one client for each phone that will be used as an attendant console). Multiple clients can connect to a single Cisco CallManager.

The Cisco Telephony Call Dispatcher (TCD) service running on the Cisco CallManager communicates with Cisco WebAttendant clients for call routing and control, monitors and reports line state, and services client database requests. Administrative tasks such as adding users, configuring pilot points and hunt groups for call routing, and starting and stopping the TCD service are performed using Cisco CallManager Administration.

This section covers the following topics:

- Cisco WebAttendant Configuration Checklist, page 8-2
- Configuring Cisco CallManager for Cisco WebAttendant, page 8-3
- Client Installation and Configuration, page 8-10
- Cisco WebAttendant Redundancy, page 8-13
- Tips and Troubleshooting, page 8-14

# Cisco WebAttendant Configuration Checklist

The following table provides an overview of the steps you will need to complete to set up Cisco WebAttendants.

	<b>Task</b>	<b>Related Procedures and Topics</b>
<b>Cisco CallManager Administration</b>		
<b>Step 1</b>	Add Cisco WebAttendant users.	Adding a Cisco WebAttendant User, page 32-10
<b>Step 2</b>	Make sure that each Cisco WebAttendant user's Cisco IP Phone is set up correctly for use with Cisco WebAttendant.	Setting Up Cisco IP Phones for Use with Cisco WebAttendant, page 8-4
<b>Step 3</b>	Set up pilot points and hunt groups.	Configuring Pilot Points, page 32-2 Configuring Hunt Groups, page 32-5 Understanding Pilot Points and Hunt Groups, page 8-6
<b>Step 4</b>	Make sure the Telephony Call Dispatcher service is running on all Cisco CallManagers in the cluster.	Starting the Telephony Call Dispatcher, page 32-21 Understanding the Cisco Telephony Call Dispatcher, page 8-9
<b>On Each Cisco CallManager in the Cluster</b>		
<b>Step 5</b>	Create a wauser shared directory with read/write access for Cisco WebAttendant users.  You must perform this step to ensure Cisco WebAttendant clients can display directory information.	Setting Up the wauser Shared Directory for Cisco WebAttendant, page 32-20  "Sharing Default Directory Database Information" section on page 8-11

Task	Related Procedures and Topics
<b>Cisco WebAttendant Client PCs</b>	
<b>Step 6</b> Install and configure the Cisco WebAttendant client on each Cisco WebAttendant user's PC.	Installing the Cisco WebAttendant Client, page 32-13 Configuring Cisco WebAttendant Client Settings, page 32-14 Cisco WebAttendant Client Requirements, page 8-10

**Related Topics**

- Configuring Cisco WebAttendants, page 32-1
- Cisco WebAttendant Redundancy, page 8-13
- Tips and Troubleshooting, page 8-14

## Configuring Cisco CallManager for Cisco WebAttendant

The topics in this section provide an overview of the Cisco CallManager server components that must be configured within Cisco CallManager Administration to set up Cisco WebAttendants.

- Cisco WebAttendant Users, page 8-4
- Setting Up Cisco IP Phones for Use with Cisco WebAttendant, page 8-4
- Understanding Pilot Points and Hunt Groups, page 8-6
- Understanding the Cisco Telephony Call Dispatcher, page 8-9

## Cisco WebAttendant Users

Before a user can log in to a Cisco WebAttendant client to answer and direct calls, they must first be added as a Cisco WebAttendant user and assigned a password. Cisco WebAttendant users are special user accounts that are created in the Cisco WebAttendant User Configuration page in Cisco CallManager Administration.

**Note**

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Cisco WebAttendant user IDs and passwords are *not* the same as Directory users and passwords entered in the User area of Cisco CallManager.

The Cisco WebAttendant user and password database is completely separate from the Cisco CallManager Directory user database.

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The Cisco WebAttendant User Configuration pages also enable administrators to delete Cisco WebAttendant users or to modify user IDs and password information.

**Related Topics**

- Adding a Cisco WebAttendant User, page 32-10

## Setting Up Cisco IP Phones for Use with Cisco WebAttendant

Cisco WebAttendant works in conjunction with a Cisco IP Phone. The MAC address that is defined in the Settings dialog box of the Cisco WebAttendant application links the Cisco CallManager, Cisco WebAttendant client, and the Cisco IP Phone.

Configure the Cisco WebAttendant client to connect to the same Cisco CallManager server as its associated Cisco IP Phone. This means that the IP Address or Host Name field in the Cisco Telephony Call Dispatcher Settings section of the client Settings dialog box should be the address of the Cisco CallManager server to which the Cisco IP Phone is normally registered.

Cisco IP Phones used with Cisco WebAttendant must meet the following guidelines:

- Use Cisco WebAttendant with any Cisco IP Phone 7960/7940 models, Cisco IP Phone 12-Series model, or Cisco IP Phone 30VIP.
- Ensure the Cisco IP Phone is added as a device in Cisco CallManager before it is used with Cisco WebAttendant.
- Do not use a shared line appearance on any phone that will be used with Cisco WebAttendant. Directory numbers assigned to a Cisco IP Phone that is used with Cisco WebAttendant must not appear on any other device in the system.
- Ensure the Cisco IP Phone has buttons for Hold and Transfer for Cisco WebAttendant to work properly.
- If a headset will be used, ensure the phone has a headset button (Cisco IP Phone 7960/740 models) or an Answer/Release button assigned on the phone's button template (older Cisco IP Phone models).
- Configure a maximum of eight lines for use with Cisco WebAttendant. The number of Smart Lines (SLs) available on Cisco WebAttendant is the same as the number of lines configured on the phone button template for the Cisco IP Phone, up to eight.
- Disable call waiting and call forwarding for lines and directory numbers on Cisco IP Phones used as Cisco WebAttendant consoles.
- If a Cisco WebAttendant user will be logging in to Cisco WebAttendant at more than one phone, ensure each phone is set up according to these guideline and that each phone is registered with its own Cisco WebAttendant client.

#### Related Topics

- Configuring Cisco WebAttendant Client Settings, page 32-14
- Understanding Default Phone Button Templates, page 47-1
- Configuring Cisco IP Phones, page 46-5

## Understanding Pilot Points and Hunt Groups

The Cisco Telephony Call Dispatcher must establish pilot points and hunt groups for call routing.

- A pilot point is a virtual directory number for which the Telephony Call Dispatcher receives and directs calls based on a list of hunt group members. Ensure the pilot point number is unique throughout the system (it cannot be a shared line appearance).
- A hunt group comprises a list of destinations that determine the call redirection order.

When a call comes in to a pilot point, the Telephony Call Dispatcher uses the hunt group list for that pilot point to determine the call destination. TCD goes through the members in the hunt group in order until it finds the first available destination for routing the call.

Specify a hunt group member as a directory number (device member) or as a Cisco WebAttendant user plus a line number (user member):

- If a directory number is specified, TCD checks whether the line is available (not busy) and if it is, routes the call.
- If a user and a line number are specified, TCD checks whether the user is logged in to a Cisco WebAttendant and online before checking whether the line is available. If the user is logged in and online, and the line is available, TCD routes the call.

The advantage of specifying a user and line number instead of a directory number is that the Cisco WebAttendant user can be logged in and online at any Cisco IP Phone controlled by Cisco WebAttendant software in the cluster and receive calls.

**Caution**

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When creating pilot point and hunt groups, be sure to consider overflow conditions. For example, if you have a single pilot point called Support, with three directory numbers, all three directory numbers could be busy when a fourth call comes in. In that case, no additional directory numbers exist to which the call can be routed.

To handle overflow conditions, configure one or more hunt groups that route calls to multiple Cisco WebAttendants with the final directory number being voice mail.

Make sure that “Always Route Member” is enabled for this voice mail number if TCD can perceive its line state. Otherwise, this voice mail number will not receive more than one call at a time.

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**Caution**

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Disable call waiting and call forwarding for lines and directory numbers on Cisco IP Phones used with Cisco WebAttendant consoles.

Do not use shared line appearances for any phone used with Cisco WebAttendant.

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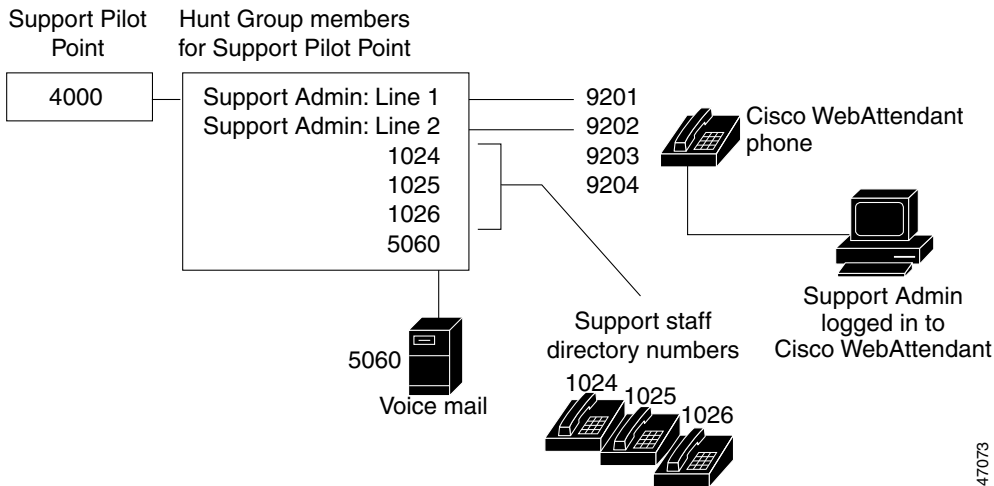
**Example**

Assume a pilot point named Support exists at directory number 4000. The hunt group for the Support pilot point contains the following members:

- Support Admin, Line 1 and Support Admin, Line 2 (Support Admin is the Cisco WebAttendant login for the administrative assistant for Support)
- Three directory numbers for support staff, 1024, 1025, and 1026, listed in the hunt group in that order
- A voice mail number, 5060, which is the final member of the hunt group

Figure 8-1 shows this example configuration.

**Figure 8-1 Pilot Point and Hunt Group Example**



The following example describes a simple call routing scenario for the configuration shown in Figure 8-1.

1. A call is received and directed to the Support Pilot Point, directory number 4000.
2. Because 4000 is a pilot point, the Telephony Call Dispatcher (TCD) associated with that pilot point checks the members in the hunt group in order, beginning with Support Admin, Line 1. TCD determines that the Support Admin user is not online, directory number 1024 is busy, directory number 1025 is busy, and directory number 1026 is available.
3. TCD routes the call to the first available directory number, which is 1026. Because 1026 is available, the TCD never checks the 5060 number.

#### Related Topics

- Configuring Pilot Points, page 32-2
- Configuring Hunt Groups, page 32-5

## Understanding the Cisco Telephony Call Dispatcher

The Cisco Telephony Call Dispatcher (TCD), a Cisco CallManager service, provides communication among Cisco CallManager servers, Cisco WebAttendant clients, and the IP phones used with Cisco WebAttendant clients.

**Note**

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If you are using Cisco WebAttendant in a cluster environment, ensure all Cisco CallManagers within a cluster have the TCD service installed and running. This is required for Cisco WebAttendant redundancy to work properly; however, not all TCDs are required to have a route point.

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TCD handles Cisco WebAttendant client requests for

- Call control (making calls, answering calls, redirecting calls, putting calls on and taking calls off hold, and disconnecting calls)
- Call dispatching from pilot point directory numbers to the appropriate destination based on hunt groups
- Line status (unknown, available, on-hook, or off-hook)
- User directory information (TCD caches and periodically updates directory information for fast lookup by the Cisco WebAttendant client)

TCD also provides the mechanism for automated recovery for Cisco WebAttendant if a Cisco CallManager fails.

**Note**

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When you add a new Cisco WebAttendant user or modify user ID and password information for an existing user, it will take approximately 6 minutes before the changes will take effect and the user can log in to Cisco WebAttendant.

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**Note**

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No automated recovery for a TCD failure exists. If TCD stops running, all Cisco WebAttendant clients connected to that TCD do not work. Restart TCD to correct the problem.

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**Related Topics**

- Cisco WebAttendant Redundancy, page 8-13
- Starting the Telephony Call Dispatcher, page 32-21

## Client Installation and Configuration

The Cisco WebAttendant client is a plug-in application that is installed on a PC that has IP connectivity to the Cisco CallManager server. Access it through the Microsoft Internet Explorer browser (version 4.0 or later). The Cisco WebAttendant provides a web-based GUI for using a Cisco IP Phone as an attendant console.

The Cisco WebAttendant client application registers with and receives call dispatching services from the Telephony Call Dispatcher (TCD) services on the Cisco CallManager. Multiple Cisco WebAttendant clients can simultaneously be registered with a Cisco CallManager to use these services.

The rest of this section discusses the following topics:

- Cisco WebAttendant Client Requirements, page 8-10
- Client Installation, page 8-11
- Client Configuration, page 8-11

## Cisco WebAttendant Client Requirements

The following list gives Cisco WebAttendant PC client requirements:

- Operating system—Microsoft Windows 98, Windows 2000, or Windows NT 4.0 (Service Pack 3 or greater) workstation or server
- Microsoft Internet Explorer 4.0 or later web browser with Active X enabled
- Display adapter color palette setting — minimum of 256 colors; select 16-bit color or greater for optimal display.
- Network connectivity to the Cisco CallManager

## Client Installation

Access and install the Cisco WebAttendant client from the Cisco CallManager Application Plug-In Installation page. To locate the client plug-in, open Cisco CallManager Administration and choose **Application > Install Plugins**.

### Related Topics

- Installing the Cisco WebAttendant Client, page 32-13

## Client Configuration

Configure each Cisco WebAttendant client to meet the following criteria:

- Provide the Cisco WebAttendant user and password
- Connect to the correct Cisco CallManager TCD server and directory database
- Associate the MAC address of the Cisco IP Phone being used with the Cisco WebAttendant client with the Cisco CallManager server



### Note

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Ensure the Cisco WebAttendant client TCD IP Address or Host Name setting points to the Cisco CallManager server where its associated Cisco IP Phone is normally registered.

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### Related Topics

- Configuring Cisco WebAttendant Client Settings, page 32-14
- Sharing Default Directory Database Information, page 8-11

## Sharing Default Directory Database Information

The Cisco WebAttendant client displays user and line information in the Directory section of its user interface. The Cisco TCD Database Path field in the Cisco WebAttendant client Settings dialog box controls where the Cisco WebAttendant client looks for its directory information.

By default, the client uses cached directory information from the Cisco CallManager Directory user database. You can also set up the client to point to an alternate database.

### **Default Setting for TCD Database Path**

The default setting leaves this field blank, so that the client uses the default database from the TCD associated with the Cisco WebAttendant client. This ensures that the client directory information automatically updates within 24 hours as changes are made to the Cisco CallManager directory database. Cisco recommends this setting.

To ensure that this default setting works properly, the Cisco CallManager administrator must rename the C:\Program Files\Cisco\Users folder to “wauusers” and set network security and share permissions so that all Cisco WebAttendant users have read and write access. Ensure this is done on all Cisco CallManagers in the cluster. For more information on how to do this, refer to the “Setting Up the wauser Shared Directory for Cisco WebAttendant” section on page 32-20.

### **Specifying a Location for the TCD Database Path**

As an alternative to using the default setting (leaving the field blank), copy the file on the Cisco CallManager server named C:\Program Files\Cisco\Users\UsersDB1.mdb or C:\Program Files\Cisco\Users\UsersDB2.mdb to a different location. (This could be a file in a different shared directory on the network or a file on the Cisco WebAttendant user’s PC.) You must then point the Cisco WebAttendant client to this file by entering the path to the file in the Cisco TCD Database Path field in the client Settings dialog box.

Choosing to do this makes any database changes made through Cisco CallManager not automatically available to the Cisco WebAttendant client:

- You must manually copy a new version of the database file to the new location when you need to update Cisco WebAttendant client users with database changes.
- Also, if you manually specify a TCD Database Path in the Settings dialog for the client, the client will use that setting until you change it.

If you change the TCD Database Path setting for a Cisco WebAttendant client, you must restart the client for the change to take effect.

**Related Topics**

- Setting Up the wauser Shared Directory for Cisco WebAttendant, page 32-20
- Configuring Cisco WebAttendant Client Settings, page 32-14

## Cisco WebAttendant Redundancy

The TCD service provides the mechanism for Cisco WebAttendant redundancy. If a Cisco CallManager fails, the following events occur:

- Another TCD service running on a Cisco CallManager within the cluster takes over servicing of the route points associated with the failed Cisco CallManager.
- The Cisco WebAttendant clients that were attached to the failed TCD service attempt to locate and connect to the TCD service on the Cisco CallManager server where their associated Cisco IP Phone registered after failover.

When the Cisco CallManager comes back up, its TCD will resume servicing its route points and Cisco WebAttendant clients.

**Note**

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For Cisco WebAttendant redundancy to work correctly, ensure all Cisco CallManagers in the cluster have TCD installed and running. You do not need to have route points configured for TCD services running on backup (standby) Cisco CallManagers in the cluster.

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**Note**

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No automated recovery for a TCD failure exists. If only TCD fails (and Cisco CallManager is still running), all Cisco WebAttendant clients connected to that TCD stop working. Restart TCD to correct the problem.

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# Tips and Troubleshooting

This section provides information about the following topics:

- Viewing Cisco WebAttendant Performance Monitors, page 8-14
- Troubleshooting, page 8-16

## Viewing Cisco WebAttendant Performance Monitors

The ScmLineLinkState performance monitor for Cisco WebAttendant provides a quick way to check whether Cisco WebAttendant is functioning correctly:

- If the ScmLineLinkState counter is 11, TCD is functioning normally.
- The leftmost digit of ScmLineLinkState indicates whether TCD is connected to and registered with the Cisco CallManager CTI. If this digit is 0, a problem may exist with the CTI or the directory.
- The rightmost digit of ScmLineLinkState indicates whether TCD can perceive line state information through Cisco CallManager. If this digit is 0, a problem probably exists with Cisco CallManager.

To view ScmLineLinkState and other performance monitoring information for Cisco WebAttendant and TCD, perform the following procedure.

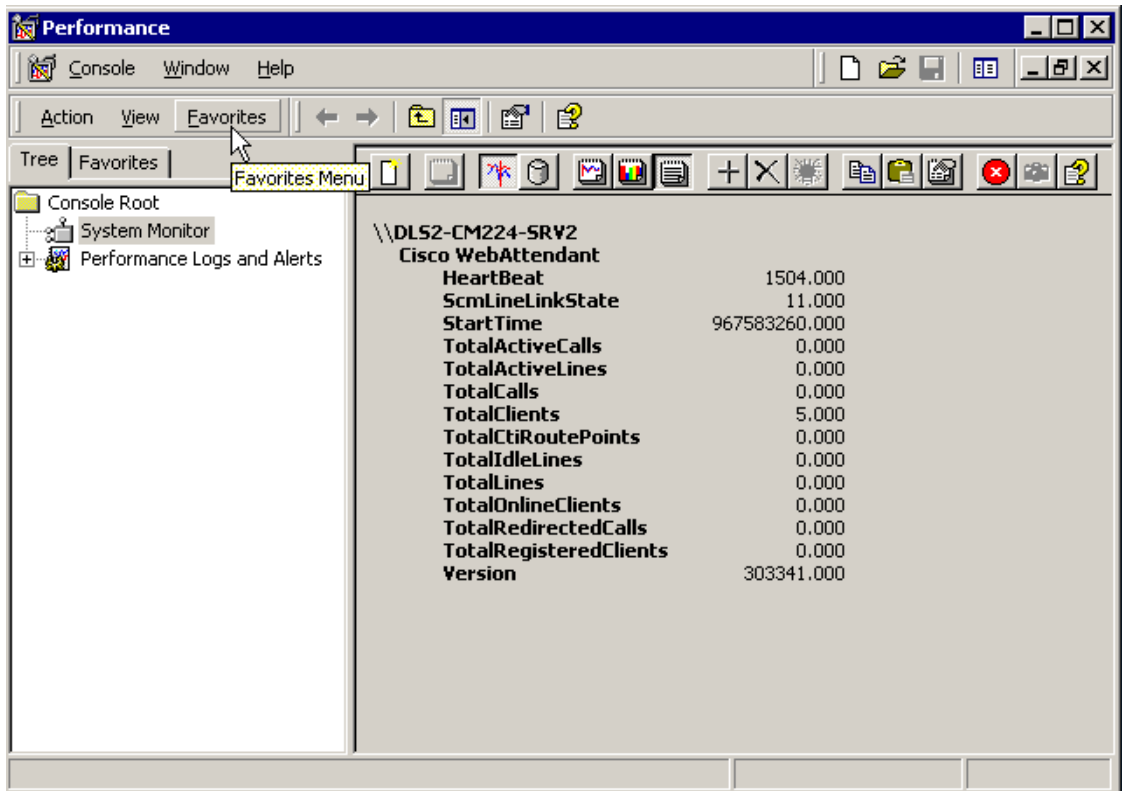
### Procedure

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- Step 1** Log in to the Cisco CallManager server.
  - Step 2** Choose **Start > Programs > Administrative Tools > Performance**.
  - Step 3** Click the View report data icon.
  - Step 4** Click the + (Add counter) icon.
  - Step 5** Choose **System Monitor**, enable **All Counters**, and choose **Cisco WebAttendant** from the Object drop-down list box.
  - Step 6** Click **Add**.
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Figure 8-2 shows a sample performance report for Cisco WebAttendant and TCD.

Figure 8-2 Sample Performance Counter Report for Cisco WebAttendant



The following list gives other performance monitoring information provided for Cisco WebAttendant:

- Heartbeat—Number of seconds TCD has been running
- StartTime—Platform-based start time for this TCD
- TotalActiveCalls—Total number of active calls for this TCD
- TotalActiveLines—Total number of active lines for this TCD
- TotalCalls—Total of all calls handled by this TCD
- TotalClients — Number of Cisco WebAttendant clients associated with this TCD
- TotalCtiRoutePoints—Number of pilot points (route points) for this TCD

- TotalOnlineClients—Number of Cisco WebAttendant clients currently logged in and online
- TotalRedirectedCalls—Total number of calls redirected by pilot points (route points) for this TCD
- TotalRegisteredClients—Number of Cisco WebAttendant clients registered with this TCD
- Version—TCD version

## Troubleshooting

This section addresses questions you may have or situations you may encounter when administering Cisco WebAttendant.

### **Avoid these common configuration mistakes.**

The Cisco WebAttendant user and client PC must have read/write access to the wauser shared directory on the Cisco CallManager. See the “Setting Up the wauser Shared Directory for Cisco WebAttendant” section on page 32-20 for instructions.

Make sure that phones and pilot points are set up correctly for use with Cisco WebAttendant:

- Do not enable call waiting or call forwarding for any phone used as a Cisco WebAttendant console.
- Do not use shared line appearance for any lines on any phones that are used with Cisco WebAttendant.
- Do not place pilot points in a partition. Always choose “None” as the partition for a pilot point.
- The final member of a hunt group must be able to handle overflow conditions. Ensure the final member of a hunt group a number for voice mail, auto attendant, or other device that can handle multiple, simultaneous calls.

If TCD can perceive the line state of the voice mail number, enable the “Always Route Calls” option for the number. Otherwise, the voice mail number will not receive more than one call at a time.

**A user cannot log in to Cisco WebAttendant client.**

Make sure that Cisco CallManager and TCD are both running.

Check to see that the user has been added in the Cisco WebAttendant User Configuration area of Cisco CallManager Administration and that the correct user name and password are specified in the client Settings dialog box.

Cisco WebAttendant users and passwords configured in the Cisco WebAttendant User Configuration area in Cisco CallManager Administration are *not* the same as directory users and passwords entered in the User area of Cisco CallManager. The Cisco WebAttendant user and password database is completely separate from the Cisco CallManager directory user database.

**No directory information exists for a Cisco WebAttendant client.**

Check to make sure that the Cisco Webattendant client setting for the TCD Database Path is correct and that no network security or access problems exist for the directory shared as wausers or network issues that prevent connection.

The Cisco WebAttendant user and client PC must have read/write access to the wauser shared directory on the Cisco CallManager.

See the “Setting Up the wauser Shared Directory for Cisco WebAttendant” section on page 32-20 for instructions.

If you have modified the Shared As properties for the wausers folder, have the Cisco WebAttendant users log out of the Cisco WebAttendant client, log out of Windows, then log back in to Windows to make sure that the new sharing and permission settings are in effect.

**Directory information is available, but no user can log in to Cisco WebAttendant.**

This can occur due to a problem during Cisco CallManager installation (CTI Framework user not created). Contact the TAC if you receive this error message.

**No Cisco WebAttendant users can log in to Cisco WebAttendant; no line state information is available.**

Make sure that Cisco CallManager and TCD are both running. Check ScmLineLinkState to see whether Cisco CallManager and TCD are functioning normally. Refer to “Viewing Cisco WebAttendant Performance Monitors” section on page 8-14.

**Cisco WebAttendant user cannot see line state for a phone that is connected to a gateway.**

TCD can only monitor the status of internal devices and phone lines. A phone that connects to a gateway and gets its connection to the Cisco CallManager through the gateway is considered outside the system.