



# Cisco Unified Attendant Console Enterprise Edition Web Admin and Installation Guide

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## Preface

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This document describes how to install and configure Cisco Unified Attendant Console Enterprise Edition (CUACEE) – its databases, connections to Cisco Unified Communications Manager, and its system and user settings – using the Cisco Unified Attendant Admin web application.

## Audience

The document is intended for:

- Deployment Engineers, who are responsible for:
  - System design
  - Preparing Cisco Unified Communications Manager
  - Installing the Cisco Unified Attendant Console server and Cisco Unified Attendant Console client
  - Configuring the Cisco Unified Attendant Console server
- System Administrators

This document assumes that you have knowledge of:

- Cisco Unified Communications Manager
- Windows operating systems
- TCP/IP

## Organization

This guide includes the following sections:

Section	Description
<a href="#">Chapter 1, “Product Overview”</a>	An overview of Cisco Unified Attendant Console, including its compatibility with Cisco Unified Communications Manager.
<a href="#">Chapter 2, “Deployment Checklist”</a>	The steps to take when installing Cisco Unified Attendant Console, cross-referenced to the relevant procedures in this guide.

Section	Description
<a href="#">Chapter 3, “Hardware and Software Requirements”</a>	The Cisco Unified Attendant Console server and Cisco Unified Attendant Console client hardware and software requirements.
<a href="#">Chapter 4, “Preparing Cisco Unified Communications Manager and Cisco Unified Presence”</a>	How to configure Cisco Unified Communications Manager 8.x and 9.x so that Cisco Unified Attendant Console can work with it.
<a href="#">Chapter 5, “Installing Cisco Unified Attendant Console Software”</a>	How to download, install and license Cisco Unified Attendant Console software.
<a href="#">Chapter 6, “Configuring and Licensing Cisco Unified Attendant Console Server”</a>	How to configure Cisco Unified Attendant Console using Cisco Unified Attendant Admin.
<a href="#">Appendix A, “Uninstalling Cisco Unified Attendant Console Server”</a>	How to uninstall Cisco Unified Attendant Console server.
<a href="#">Appendix B, “Cisco Unified Reporting”</a>	How to create Cisco Unified Attendant Admin reports.
<a href="#">Appendix C, “Creating an Attendant Application User for Cisco Unified Communications Manager 7.x”</a>	How to configure Cisco Unified Communications Manager 7.x so that Cisco Unified Attendant Console can work with it.
<a href="#">Appendix D, “Installing and Configuring the Cisco TSP for Cisco Unified Communications Manager 7.x”</a>	How to configure Cisco TSP for communicating with Cisco Unified Communications Manager 7.x.
<a href="#">Appendix E, “Upgrading Cisco Unified Attendant Console”</a>	How to upgrade a Cisco Unified Attendant Console system.

## Conventions

This document uses the following conventions:

Convention	Indication
<b>bold font</b>	Commands and keywords and user-entered text appear in <b>bold font</b> .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[ ]	Elements in square brackets are optional.
{ x   y   z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[ x   y   z ]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A non-quoted set of characters. Do not use quotation marks around the string.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
< >	Non-printing characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



**Note**

---

Means *reader take note*.

---

**Tip**

---

Means *the following information will help you solve a problem*.

---

## Obtaining Documentation and Submitting a Service Request

For information on:

- Obtaining documentation
- Obtaining support
- Submitting service requests
- Providing documentation feedback
- Security guidelines
- Recommended aliases
- Gathering additional information
- A list of all new and revised Cisco technical documentation

see the monthly *What's New in Cisco Product Documentation* at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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# CHAPTER 1

## Product Overview

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Cisco Unified Attendant Console is a Windows-based operator attendant console application for use exclusively with Cisco Unified Communications Manager. For more information about which versions of Cisco Unified Attendant Console and Cisco Unified Communications Manager work together, see [Cisco Unified Attendant Console Integration with Cisco Unified Communications Manager, page 1-4](#). Cisco Unified Attendant Console emulates the functions of a manual telephone switchboard, and so enables attendant console operators to quickly accept incoming calls and efficiently dispatch them to recipients within an organization.

The Cisco Unified Attendant Console server monitors extensions within Cisco Unified Communications Manager and routes the calls to the Cisco Unified Attendant Console clients: the attendant console applications. Calls from Cisco Unified Communications Manager enter Cisco Unified Attendant Console through Cisco Unified Communications Manager Computer Telephony Integration (CTI) Route Point devices that can route calls, but cannot terminate them. Cisco Unified Communications Manager CTI Ports receive the calls and deliver them to the operators.

You use Cisco Unified Attendant Admin to communicate with both Cisco Unified Communications Manager, to create the required system devices, and with the Cisco Unified Attendant Console server, to configure the system parameters. Cisco Unified Attendant Console system parameters, user directory and call record logs are all stored in SQL databases on the Cisco Unified Attendant Console server.

## Edition Feature Comparison

Cisco Unified Attendant Console has the following basic features:

- Call queuing engine
- Busy Lamp Field (BLF)
- Directory search capabilities that are integrated into the Cisco Unified Communications Manager directory
- Blind and consultative transfer to enterprise users

Cisco Unified Attendant Console is available in the following Editions, which differ in scale and functionality:

- Department—for team-based answering functions within large enterprises, with support for up to two operators per department and five departments per server.
- Business—for mid-sized businesses, with support for up to twelve operator clients and up to 500 Cisco Unified IP Phone users per attendant console system.

- Enterprise—for larger enterprises, with support for up to 40 operator clients and full Cisco Unified Communications Manager End User directory support.
- Premium—for larger enterprises, with support for up to 50 operator clients and up to 100,000 directory entries per attendant console system. The Premium Edition also includes server resilience and the option to use the following directory sources:
  - Active Directory 2008 R1/R2
  - iPlanet Netscape 5.0
  - iPlanet Netscape 5.1

**Note**

You cannot upgrade directly from one Edition of Cisco Unified Attendant Console to another: a full re-installation and a new license are required.

The table below summarizes the features of the Cisco Unified Attendant Console Editions:

**Legend:** ✓ = Supported, ✗ = Unsupported.

Feature	Cisco Unified Attendant Console Edition			
	Department	Business	Enterprise	Premium
Installation	Web and Wizard			
Configuration	Browser			
<b>Queue Features</b>				
Console queues supported	1 per instance (5 instances per server)	3	50	100
Configurable queue names and priority	✗	✓	✓	✓
Show all calls in all queues option	✗	✓	✓	✓
Configurable forced delivery timer	✓	✓	✓	✓
Queue salutations	✗	✗	✓	✓
Show & pick calls from each queue	✓	✓	✓	✓
Queue wait time overflow	✗	✓	✓	✓
Queue limit overflow (number of calls)	✓	✓	✓	✓
Operator overflow (no operators)	✓	✓	✓	✓
Queue overflow destinations supported	✓	✓	✓	✓
Music in queue	✗	✓	✓	✓
Operator handset ringing	✓	✓	✓	✓
<b>Service Options</b>				
Emergency mode switch	✗	✓	✓	✓
Emergency mode destination	✗	✓	✓	✓
Night service switch	✗	✓	✓	✓
Night service hours/timing	✗	✓	✓	✓
Night service destination	✗	✓	✓	✓
<b>Directory Features</b>				

Feature	Cisco Unified Attendant Console Edition			
	Department	Business	Enterprise	Premium
Directory size supported	150 per instance (5 instances per server)	500	100K	
Search fields	3	4	6	6
Mobile number support	✓	✓	✓	✓
Directory source	Cisco Unified Communications Manager (CUCM)			CUCM, Active Directory or iPlanet
Personal directory group support	✓	✓	✓	✓
Speed dials	✓	✓	✓	✓
Alternative number search (hotkey)	✓	✓	✓	✓
AND searching	✓	✓	✓	✓
Alternate contacts search	✗	✗	✓	✓
Cross-tab searching	✗	✗	✓	✓
Notes against person	✓	✓	✓	✓
<b>Presence/Status Features</b>				
Busy Lamp Fields (BLF)/Phone status supported	✓	✓	✓	✓
Presence integration with Cisco Unified Presence (CUP)	✓	✓	✓	✓
Presence integration with Microsoft OCS	✓	✓	✓	✓
<b>Telephony Features</b>				
Transfer reversion (call recall)	✓	✓	✓	✓
Hold recall	✓	✓	✓	✓
Call toggle	✓	✓	✓	✓
Camp on	✗	✗	✓	✓
Call hold with notes	✗	✗	✓	✓
Undirected call park (finds first slot)	✓	✓	✓	✓
Directed call park (to specific park location)	✓	✓	✓	✓
Call hold	✓	✓	✓	✓
Park recall	✓	✓	✓	✓
Transfer	✓	✓	✓	✓
Conference	✓	✓	✓	✓
<b>System Features</b>				
Number of concurrent client logins	2 per instance (5 instances per server)	12	40	50
Keyboard driven	✓	✓	✓	✓
System logging	✓	✓	✓	✓

Feature	Cisco Unified Attendant Console Edition			
	Department	Business	Enterprise	Premium
System reports	✘	✓	✓	✓
VMWare ESXi 4.x and 5.x support	✓	✓	✓	✓
<b>Cisco Unified Communications Manager Versions Supported</b>				
Versions supported	7.1(5) to 9.1(1)			
<b>Localization and Accessibility</b>				
Languages supported	English only.			
Accessibility support (with JAWS script)	✓	✓	✓	✓

**Legend:** ✓ = Supported, ✘ = Unsupported.

For a more detailed features list see the product data sheets at [http://www.cisco.com/en/US/products/ps7282/products\\_data\\_sheets\\_list.html](http://www.cisco.com/en/US/products/ps7282/products_data_sheets_list.html).

## Core Languages

Cisco Unified Attendant Console supports English only.

# Cisco Unified Attendant Console Integration with Cisco Unified Communications Manager

Cisco Unified Attendant Console V9.1.1 is compatible with Cisco Unified Communications Manager versions 7.1(5) to 9.1(1).

## AXL API

Cisco Unified Attendant Admin and Cisco Unified Communications Manager communicate via the AVVID XML Layer (AXL) API, using Secure Sockets Layer (SSL) to synchronize the following system devices within the Cisco Unified Communications Manager database:

- Computer Telephony Integration (CTI) Ports—virtual phones that can terminate calls. They can be used for queuing calls and can play music on hold to the caller.
- Computer Telephony Integration (CTI) Route Points—virtual devices that can receive multiple, simultaneous calls for application-controlled redirection. They cannot terminate (answer) calls.

The AXL API enables data to be inserted, retrieved, updated, removed and retrieved as eXtensible Markup Language (XML) from the database using Simple Object Access Protocol (SOAP). For AXL communication to work, Cisco Unified Communications Manager must contain a User Profile that allows it.

## Cisco Unified Communications Manager System Devices

Cisco Unified Communications Manager uses the following system devices:

- Queue DDI (Direct Dial In)—the number dialed to route calls into a queue. Each DDI is configured on Cisco Unified Communications Manager as a CTI Route Point, and any call intended for this queue must be directed to this port, either directly or through a translation pattern.
- CT Gateway Devices—CTI Ports that are created by the Admin application when synchronized with Cisco Unified Communications Manager; they queue calls awaiting distribution to Cisco Unified Attendant Console.
- Service Queues—CTI Ports that are used to manage calls after they leave the operator's handset, for example when transferring or holding calls.
- Park devices—CTI Ports that are used when an attendant parks a call. The attendant can either select the preferred Park port or allow the system to select the port for them. A parked call can then be picked up by anyone on the system by dialing the Park port number.

The Cisco Unified Attendant Console Call Park functionality is additional to the standard Cisco Unified Communications Manager call park and directed call park functions. Operators can see what Park devices are available and choose whether to use a specific device or allow the system to select a park device for them. As these Park Devices are exclusive to the console attendants they are situated on the Cisco Unified Attendant Console server and require an additional range of DNS.

## Centralized Installations and Transcoding

All Cisco Unified Communications Manager releases support the Cisco TAPI Wave Driver. Cisco Unified Communications Manager Release 8.0 and later also supports the New Media driver, which is the recommended means of enabling CTI ports to be activated because it allows greater scalability and enables G729 to be used as a codec (compression type) without needing transcoding (the conversion of the output stream of one codec into another codec).

In Cisco Unified Communications Manager Release 7.1 and earlier, TAPI wave-enabled CTI Ports are needed for the Cisco Unified Attendant Console system to work correctly. These ports do not support the G729 codec for a connected call. Therefore, in a centralized environment where the G729 codec is being used across WAN links, a transcoder must be installed wherever the Cisco Unified Attendant Console server is located. This means that when a call crosses the WAN link to an attendant's IP Phone as a G729 call, during any subsequent call transfer, hold or park, Cisco Unified Communications Manager changes the codec to G711 while the call is connected to the Service Queue or Call Park Device CTI Ports.

To support G729 natively with the New Media Driver you need to do the following:

- On the Cisco Unified Attendant Console server, change the registry key `HKEY_USERS/S-1-5-20/Software/Cisco Systems, Inc./RTPLib/G729PassThrough` to 1 in either Hex or Dec, and then reboot the server.
- Ensure that the Device Pool and the region in which the CTI Port(s) are assigned is *not* restricted to G729. If it is, calls will not be processed correctly, and will be unable to be redirected to the CTI Port.

For more information on transcoding refer to the Cisco Solution Reference Network Design.



### Note

If you start using a different Cisco Unified Communications Manager Release, access the [CUCM Connectivity](#) option and use it to validate and, if necessary, change the media driver, as described in [CUCM Connectivity, page 6-11](#).

## TAPI Resilience

Cisco Unified Communications Manager enables a Telephony/TAPI Service Provider (TSP) client to communicate with a primary and backup CTI Manager to receive CTI information. This allows the Cisco Unified Attendant Console server and clients to carry on functioning if a Cisco Unified Communications Manager failover occurs. The backup CTI Manager should be the Cisco Unified Communications Manager to which the phones fail over.

## Music on Hold

Cisco Unified Attendant Console supports Music on Hold (MoH) from Cisco Unified Communications Manager. Music on hold is used in the following situations:

- When an operator holds a call
- During a blind transfer
- During a re-established transfer
- When Call Arrival Mode\* is set to Hold Queued Calls

**Note**

---

\* Cisco Unified Communications Manager 8.0(3) and later enables you to configure a Queue with Call Arrival Mode to **Hold Queued Calls when it arrives on the CTI Port**. This function places calls on hold so that Music on Hold can be played to the caller while they wait for an operator to answer. **If you use this mode the call is charged from the time that it is answered and put on hold on the CT Gateway.**

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## Cisco Unified Presence Server Integration

Cisco Unified Presence collects real-time information from multiple sources to determine a user's availability and their capacity and willingness to communicate.

Cisco Unified Attendant Console can display information extracted from the Cisco Unified Presence Server from Cisco Unified Communications Manager. Cisco Unified Attendant Console V9.1.1 is compatible with Cisco Unified Presence Server versions 7.1(5) to 9.1(1). The integration is managed via the Cisco Unified Attendant CUP Plug-in directly to the Cisco Unified Attendant Admin. Cisco Unified Attendant Admin uses SIP SIMPLE to communicate with the Cisco Unified Presence server. Changes to the CUP Plug-in service are managed in real-time: you do not have to stop and restart the CUP Plug-in service for the changes to take effect.





## CHAPTER 2

# Deployment Checklist

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This section lists the things you must do to install Cisco Unified Attendant Console server and Cisco Unified Attendant Console client for the first time. You may find it useful to print this page and annotate it to keep track of your progress.



Note

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If you are upgrading an existing Cisco Unified Attendant Console installation, see [Appendix E, “Upgrading Cisco Unified Attendant Console”](#).

---

To install Cisco Unified Attendant Console for the first time perform the following steps:

1. Check that your Cisco Unified Communications Manager version is compatible with the version of Cisco Unified Attendant Console you are installing. For more information, see [Cisco Unified Attendant Console Integration with Cisco Unified Communications Manager, page 1-4](#).
2. Determine whether the Cisco Unified Attendant Console server is going to run on a physical server or in VMware, and confirm that your server meets or exceeds the minimum specifications required by Cisco Unified Attendant Console. For more information, see:
  - [Physical Server Hardware Requirements, page 3-1](#)
  - [VMware Server Requirements, page 3-3](#)
3. Ensure that you have the correct versions of operating system and SQL database required by the Cisco Unified Attendant Console server and client. For more information, see:
  - [Physical Server Software Requirements, page 3-1](#)
  - [Additional Server Considerations, page 3-4](#)
  - [PC Software Requirements, page 3-6](#)
4. Configure Cisco Unified Communications Manager so that it is ready for Cisco Unified Attendant Console deployment. For more information, see: [Chapter 4, “Preparing Cisco Unified Communications Manager and Cisco Unified Presence”](#)
5. Download, install and license the Cisco Unified Attendant Console software. For more information, see [Chapter 5, “Installing Cisco Unified Attendant Console Software”](#).
6. Use Cisco Unified Attendant Admin to configure the Cisco Unified Attendant Console server. For more information, see [Chapter 6, “Configuring and Licensing Cisco Unified Attendant Console Server”](#).
7. Install the Cisco Unified Attendant Console client. For more information, see [Installing Cisco Unified Attendant Console Client, page 5-7](#).





# CHAPTER 3

## Hardware and Software Requirements

---

This section describes the hardware and software requirements for Cisco Unified Attendant Console server and Cisco Unified Attendant Console client.

### Server Requirements

In a production environment, Cisco Unified Attendant Console server runs in either a:

- Physical server, with the requirements shown below.
- VMware environment compliant with Cisco's Specification-Based Hardware Support program. For details of the requirements, see [VMware Server Requirements, page 3-3](#).

### Physical Server Hardware Requirements

Cisco Unified Attendant Console server has the following minimum physical server hardware requirements:

- 2.2 GHz Pentium 4 processor
- 4 GB RAM
- 72 GB of available hard disk space
- Network card, connected to the network using TCP/IP



#### Note

The following:

- NIC teaming is not supported.
  - Cisco Unified Attendant Console server is not supported in a production environment if running on a desktop PC.
- 

### Physical Server Software Requirements

Cisco Unified Attendant Console server has the following minimum physical server software requirements:

- One of the following activated operating systems, with Windows regional settings set to English:

- Windows Server 2008 R1 (32-bit)
- Windows Server 2008 R2 (64-bit)

**Note**

The following:

- Cisco Unified Attendant Console server does not run under any version of Windows Server 2003.
- For how to upgrade to Windows Server 2008 visit [http://technet.microsoft.com/en-us/library/cc755199\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc755199(v=ws.10).aspx).

- For non-English characters, the relevant language pack for the locale must be installed.
- Internet Information Service (IIS) 6.0 or later, with the Static Content role service added.

**Note**

To install IIS on a system with Windows Server already installed, see [Adding IIS to Installed Operating System, page 3-2](#).

- ASP.NET
- .Net Framework 3.5 SP1
- One of the following databases:
  - Microsoft SQL Server 2008 Express, Standard or Enterprise (32-bit or 64-bit)
  - Microsoft SQL Server 2008 R2 Express, Standard or Enterprise (32-bit or 64-bit)

**Note**

The following:

- No versions of Microsoft SQL Server 2005 are supported.
  - For how to upgrade to SQL Server 2008 visit [http://msdn.microsoft.com/en-us/library/bb677622\(v=sql.100\).aspx](http://msdn.microsoft.com/en-us/library/bb677622(v=sql.100).aspx).
  - For the Microsoft SQL Server 2008 Upgrade Advisor visit <http://www.microsoft.com/en-us/download/details.aspx?id=11455>.
  - For considerations when upgrading the database engine to 2008 visit [http://msdn.microsoft.com/en-us/library/bb933942\(v=SQL.100\).aspx](http://msdn.microsoft.com/en-us/library/bb933942(v=SQL.100).aspx).
- Cisco Unified Attendant Console server does not support the Cisco Media Convergence Server (MCS) version of Windows Server.
- If the Cisco Unified Attendant Console server installer does not detect a supported version of Microsoft SQL Server, it will automatically install Microsoft SQL Server 2008 Express.
- If the Cisco Unified Attendant Console server installer detects Microsoft SQL Server 2005 Express, it automatically upgrades it to Microsoft SQL Server 2008 Express.
- If you are installing Microsoft SQL yourself, you must install it locally on the Cisco Unified Attendant Console server. Cisco Unified Attendant Console does not support the use of external SQL Servers.

## Adding IIS to Installed Operating System

To add IIS to an installed operating system, do the following:

- 
- Step 1** Run Server Manager, click **Roles**, and then click **Add** to use the Wizard to install Web Server (IIS).
- Step 2** Add the Required Features.
- Step 3** Select and Add the following Role Services:
- ASP.Net
  - .NET Extensibility
  - ISAPI Extensions
  - ISAPI Filters
  - Server Side Includes
  - Static Content
- Step 4** Click **Install**.
- 

## VMware Server Requirements

In a production environment, Cisco Unified Attendant Console server is supported on VMware ESXi 4.x or 5.x running on a host machine that is compliant with Cisco's Specifications-Based Hardware Support program (described at [http://docwiki.cisco.com/wiki/Specification-Based\\_Hardware\\_Support](http://docwiki.cisco.com/wiki/Specification-Based_Hardware_Support)).



### Note

The following:

- Cisco Unified Attendant Console server is *not* supported in HyperV or any other virtualization products other than VMware.
- Cisco Unified Attendant Console **does not** run on a copy (clone) of a virtual machine.
- For more information about VMware requirements, visit:  
[http://docwiki.cisco.com/wiki/Unified\\_Communications\\_VMware\\_Requirements](http://docwiki.cisco.com/wiki/Unified_Communications_VMware_Requirements).

## VMware Guest Machine Requirements

Cisco Unified Attendant Console server has the following minimum VMware instance (guest machine) requirements:

- 1x vCPU unrestricted
- 4 GB RAM
- 40 GB of available hard disk space



### Note

You can download an OVA template configured with the above specifications from the following location:

<http://software.cisco.com/download/release.html?mdfid=284373299&flowid=33202&softwareid=283910832&release=8.x-9.x&reind=AVAILABLE&rellifecycle=&reltype=latest>.

## VMware Software Requirements

Cisco Unified Attendant Console server running on a virtual machine requires one of the following activated operating systems, with Windows regional settings set to English:

- Windows Server 2008 R1 (32-bit)
- Windows Server 2008 R2 (64-bit)

## Additional Server Considerations

This section contains important information you should know about your server hardware and software.

### SQL Server 2008 Limitations

Microsoft SQL Server 2008 Express has the following limitations:

- Can access only a single CPU
- Uses only 1 GB of RAM
- Has a maximum database size of 4 GB
- Cannot support server resilience

You should consider using Microsoft SQL Server Standard or Enterprise if you expect your Cisco Unified Attendant Console deployment to support any of the following:

- More than 10 operators
- More than 500 calls per operator per day
- A directory containing more than 10,000 contacts
- Cisco Unified Attendant Console server resilience

If a Cisco Unified Attendant Console system outgrows Microsoft SQL Server 2008 Express, you can upgrade the database to Microsoft SQL Server Standard or Enterprise. Multiple SQL databases are not supported.

## Windows Updates and Service Packs

Cisco Unified Attendant Console server supports the application of all Microsoft Windows Updates and Service Packs.

Java auto-updates are not supported because they sometimes fail, rendering the system unusable.

## Data Backup

You should provide backup facilities to ensure application and data integrity in the event of unforeseen circumstances. If possible, choose a solution that offers one-step disaster recovery, such as the ability to restore the complete contents of a hard drive from a bootable floppy disk and the backup media.

## Server Redundancy

We strongly recommend that you configure your Cisco Unified Attendant Console server as a redundant system with the following redundancy features:

- Multiple hot-swap power supplies
- Hot-swap Hard Drive arrays
- UPS / power conditioners
- RAID

## Antivirus Software

Cisco Unified Attendant Console server supports many antivirus products. You can find guidelines on antivirus software at:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_bulletins\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_bulletins_list.html).

The files in certain folders are constantly being accessed by the Cisco Unified Attendant Console software. Consequently, your antivirus software will constantly try to scan them for viruses, which will slow down the server. Therefore, your chosen antivirus product must support **exclusions**, which you use to specify the following files and folders that are *not* to be scanned by the antivirus software:

Default Folder	Contains
\\DBData	System configuration databases
\\Program Files\Cisco\	Software and application trace files
\\Apache	Active MQ folder



### Note

Your System Administrator may have set up your Cisco Unified Attendant Console server to use different folders for these files.

## Network Requirements

For Cisco Unified Attendant Console to run across a network:

- The network must support TCP/IP.
- Cisco Unified Attendant Console web administration application must run under an Administrator profile (Local Administrator is acceptable).
- On Microsoft Windows networks that use DHCP, you must allocate Cisco Unified Attendant Console server with a static IP address.

# Cisco Unified Attendant Console Client Requirements

This section describes the hardware and software requirements of the PC and operator phones running the Cisco Unified Attendant Console client.

## PC Hardware Requirements

The PC running the Cisco Unified Attendant Console client has the following hardware requirements:

- 2.0 GHz Pentium 4 processor
- 1 GB RAM

- 1 GB of available hard disk space
- Network card, connected to the network using TCP/IP
- SVGA (1024x768) display card
- 17-inch or larger monitor highly recommended
- SoundBlaster-compatible sound card and speakers highly recommended
- Keyboard with 10-key number pad

## PC Software Requirements

The PC running the Cisco Unified Attendant Console client must be running one of the following activated operating systems:

- Microsoft Windows XP Professional Service Pack 3
- Microsoft Windows Vista Professional 32-bit
- Microsoft Windows Vista Professional 64-bit (using WoW64 emulation)
- Microsoft Windows 7 32-bit
- Microsoft Windows 7 64-bit (using WoW64 emulation)

## Windows Updates and Service Packs

Cisco Unified Attendant Console client supports the application of all Microsoft Windows Updates and Service Packs.

Java auto-updates are not supported because they sometimes fail, rendering the system unusable.

## Operator Phone Requirements

If the operator is using a Cisco 7931 IP phone, maximum calls on the Cisco Unified Communications Manager must be set to at least two.

If the operator is using a Cisco 89xx or 99xx IP phone, the rollover feature on Cisco Unified Communications Manager must be disabled.



---

**Note**

Not the following:

- Cisco Unified Attendant Console does not support logging on any device that has a duplicate DN, or that uses Extension Mobility.
  - Attendant console handsets are not supported on shared lines.
-





## CHAPTER 4

# Preparing Cisco Unified Communications Manager and Cisco Unified Presence

---

The Cisco Unified Attendant Console server must be able to communicate with Cisco Unified Communications Manager to enable attendant console directory synchronization, busy lamp field (BLF, the endpoint line state) and call control.



Note

---

If the E.164 telephone number configured for the user in Cisco Unified Attendant Console does not exactly match the device number in the Cisco Unified Communications Manager database, BLF will not work correctly, as the information cannot be transferred using AXL.

---

This chapter describes how to set up Cisco Unified Communications Manager Releases 8.x and 9.x. If you have Cisco Unified Communications Manager 7.x, set it up according to the instructions in [Appendix C, “Creating an Attendant Application User for Cisco Unified Communications Manager 7.x”](#)

If you use Cisco Unified Presence in your organization and want to integrate presence status in the attendant console directory, you must configure the Cisco Unified Presence server to work with the Cisco Unified Attendant Console server.

This chapter describes the following:

- [Creating a User Group, page 4-1](#)
- [Assigning Roles to a User Group, page 4-2](#)
- [Creating and Assigning an Application User, page 4-2](#)
- [Configuring Access to Cisco Unified Presence Server, page 4-3](#)

## Creating a User Group

To create a User Group with the roles necessary for the Application User to allow the Cisco Unified Attendant Console server to function, do the following:

- 
- Step 1** Log into Cisco Unified Communications Manager Administration.
  - Step 2** Choose **User Management > User Group**.
  - Step 3** Click **Add New** to create a new User Group.
  - Step 4** Type a **Name** for the new User Group.
  - Step 5** Click **Save** to save the User Group.

**Step 6** Assign roles to the user group, as described in [Assigning Roles to a User Group, page 4-2](#).

---

## Assigning Roles to a User Group

To add the roles to a User Group required to enable the Cisco Unified Attendant Console server to function, do the following:

- 
- Step 1** With the group displayed, in **Related Links** (in upper-right corner) select **Assign Role to User Group**, and then click **Go**.
- Step 2** Click **Assign Role to Group**.
- Step 3** Find Role where Name is not empty. This lists the roles.
- Step 4** Select the following roles:
- Standard AXL API Access
  - Standard CTI Allow Calling Number Modification
  - Standard CTI Allow Control of All Devices
  - Standard CTI Allow Control of Phones supporting Connected Xfer and conf
  - Standard CTI Allow Control of Phones supporting Rollover Mode
  - Standard CTI Allow Reception of SRTP Key Material
  - Standard CTI Enabled
- Step 5** Click **Add Selected** to assign the roles.
- Step 6** Click **Save**.
- 

## Creating and Assigning an Application User

An Application User connects the Cisco Unified Attendant Console server to Cisco Unified Communications Manager using Cisco TSP and AXL.

This section describes how to create an Application User and then assign it to the User Group

To create and assign an Application User:

- 
- Step 1** Log into Cisco Unified Communications Manager Administration.
- Step 2** Choose **User Management > Application User**.
- Step 3** Click **Add New**.
- Step 4** Enter information in the following fields:
- **User ID** (a name of your choice)
  - **Password**
  - **Confirm Password** (this must match the Password)
- Step 5** Scroll down to the **Permissions Information** section and click **Add to User Group**.

- Step 6 Find the User Group you created in the previous section and select it.
  - Step 7 Select **Standard CCM Super Users**.
  - Step 8 Click **Add Selected**.
  - Step 9 Click **Save** to save the Application User.
- 

## Configuring Access to Cisco Unified Presence Server

Cisco Unified Attendant Console is capable of integrating with Cisco Unified Presence server to display real-time presence status within the Cisco Unified Attendant Console directory.

To configure this integration, you must add the address of the Cisco Unified Attendant Console server to the firewall information on the Cisco Unified Presence server. To add the address, do the following:

- Step 1 Use your internet browser to access Cisco Unified Presence Administration, and then choose **System > Security > Incoming ACL**.  
The **Find and List Allowed Incoming Hosts** page is displayed.
  - Step 2 Click **Add New**.
  - Step 3 Under **Incoming ACL Information**, type a **Description** of the address, and an **IP Address Pattern**.
  - Step 4 Click **Save**.
-





## CHAPTER 5

# Installing Cisco Unified Attendant Console Software

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This chapter describes how to install Cisco Unified Attendant Console software:

1. Disable Microsoft User Account Control, as described in [Disabling UAC, page 5-2](#).
2. Prepare SQL, if applicable, as described in [Preparing SQL, page 5-2](#).
3. Download the Cisco Unified Attendant Console server software, as described in [Obtaining Cisco Unified Attendant Console Software, page 5-2](#).
4. Install the Cisco Unified Attendant Console server software, as described in [Installing Cisco Unified Attendant Console Server, page 5-4](#).
5. Install the Cisco Unified Attendant Console client software, as described in [Installing Cisco Unified Attendant Console Client, page 5-7](#).

For how to license and configure the software, see [Licensing Cisco Unified Attendant Console Software, page 6-4](#).

For how to uninstall the Cisco Unified Attendant Console server and its associated applications, see [Appendix A, “Uninstalling Cisco Unified Attendant Console Server”](#).

For how to upgrade your Cisco Unified Attendant Console server and client, see [Appendix E, “Upgrading Cisco Unified Attendant Console”](#).



### Note

The following:

- The instructions in the section refer to systems installed on Microsoft Windows Server 2008. If you are not using this, please perform the equivalent steps for your operating system.
- IIS must be installed and activated before installing Cisco Unified Attendant Console. For more information, see [Physical Server Software Requirements, page 3-1](#).
- If you have a Microsoft Windows network that uses DHCP, you must allocate a static IP address to the Cisco Unified Attendant Console server machine.
- Access to the Cisco Unified Attendant Console server is not supported at any time via Remote Desktop (RDP), Terminal Services (TS) or any other session-based application. These applications can cause TAPI/TSP and Wave Driver instability. Only local or VNC connection is supported. For more information, see <http://support.microsoft.com/kb/308405>.

## Disabling UAC

Cisco Unified Attendant Console server and Cisco Unified Attendant Console client will neither install nor run correctly under Windows 2008 Server, Windows Vista, or Windows 7 with Windows User Account Control (UAC) enabled. For this reason you must disable UAC on the client and server computers before installing the software and keep it disabled while the software is running.

**Note**

---

The exact steps to do this vary between Windows versions.

---

To disable UAC:

- 
- Step 1 Log into the server machine with local administrator rights.
  - Step 2 In Control Panel, open **User Accounts**.
  - Step 3 Click **Turn User Account Control on or off** (in Windows 7, click **Change User Account Control Settings**).
  - Step 4 De-select **Use User Account Control (UAC) to help protect your computer** (in Windows 7, move the **User Account Control Settings** slider to Never notify), then click OK.
  - Step 5 Restart your machine for the change to take affect.
- 

## Preparing SQL

When you install Cisco Unified Attendant Console server, if Microsoft SQL Server is not already installed on that machine, SQL Server Express gets installed automatically on the local machine.

## Obtaining Cisco Unified Attendant Console Software

This section describes how to obtain Cisco Unified Attendant Console software. It contains the following main topics:

- [Evaluating Cisco Unified Attendant Console Software](#)
- [Creating a Cisco Unified Attendant Console Downloads and Licensing Website User Account](#)
- [Downloading the Software](#)

## Evaluating Cisco Unified Attendant Console Software

You can try out the Cisco Unified Attendant Console software free of charge. First you must register with Cisco; then you can download and install the trial software. You can use the software for 5 days without having to take any further action.

If you want to trial the software for more than 5 days, you must license it within 5 days of installing it. The application of an evaluation license allows you to use the software free of charge for another 60 days. If you do not license the trial software, you will be unable to use it after the fifth day. You cannot extend the 60 day evaluation license.

You can purchase the software at any time in the evaluation periods, giving you unlimited use. If you do not purchase the software within either evaluation period, the software will stop working at the end of them. When you purchase the software Cisco provides you with a 27-digit license activation code. After licensing the software, you cannot revert to the trial version.

## Creating a Cisco Unified Attendant Console Downloads and Licensing Website User Account

To be able to download or license Cisco Unified Attendant Console software you require a valid account on the Cisco Unified Attendant Console Downloads and Licensing website.

To create an account on the Cisco Unified Attendant Console Downloads and Licensing website:

- 
- Step 1** Use your internet browser to go to <http://www.cisco.com/go/ac>.
  - Step 2** Under **New Users**, click **Register your details**.  
The **Register** page is displayed.
  - Step 3** Complete the form and click **Register**.
  - Step 4** Either confirm your Reseller, or—if you are not listed—Add New Reseller.
  - Step 5** Click **Submit** to register your account.  
A confirmation screen is displayed and you are sent an e-mail containing your password to the website.
- 

## Downloading the Software

To download software from the Cisco Unified Attendant Console Downloads and Licensing website:

- 
- Step 1** Use your internet browser to go to <http://www.cisco.com/go/ac>.
  - Step 2** Enter your **User Name** and **Password** and then click **Log In**.
  - Step 3** In the navigation bar, click **DOWNLOADS**.  
Information about downloading, evaluating and activating software, and a list of software available for downloading is displayed.
  - Step 4** In the list, select the required software.  
The versions of the selected software are displayed.
  - Step 5** Click **Download** for the software you want.
  - Step 6** When prompted for what to do with the file, click either **Open** or **Save**. Saving the file to a local area is recommended.
  - Step 7** When the software is downloaded, continue with the installation process described in the next section.
-

# Installing Cisco Unified Attendant Console Server

Before you can install the Cisco Unified Attendant Console software, you must download it as described in [Obtaining Cisco Unified Attendant Console Software, page 5-2](#).

## Installation Procedure



### Note

If you are installing a resilient system, you must perform this installation procedure on both the Publisher and Subscriber servers. You must have installed SQL Server Standard or Enterprise on the Publisher.

To install a Cisco Unified Attendant Console server:

**Step 1** Log in to the machine hosting the server, using a login with local administrator rights.

**Step 2** Browse to the folder where the downloaded installation files are saved.

**Step 3** Double-click the setup program.

The Wizard is prepared and you are presented with the Welcome screen.



### Note

If they are not already installed, all required third-party applications are now installed, including the Microsoft .NET Framework 3.5, and a Microsoft SQL Server (Microsoft SQL Server Express gets installed automatically). Any such installations may take several minutes. You are prompted to restart your computer afterwards.

**Step 4** In the Wizard welcome screen, click **Next**.

**Step 5** In the **Registration Information** screen, type or accept the license holder **Name** and **Company Name**, and then click **Next**.

**Step 6**



### Note

The SQL Server login password must be sufficiently complex to meet the Windows policy requirements described at <http://support.microsoft.com/kb/965823>.

**Step 7** In the **Server Information** screen, type the Cisco Unified Attendant Console **Server Machine Name** or IP Address onto which you are installing the software, and then click **Next**.

**Step 8** In the SQL Server Login Information screen, type the **SQL Server Username** (default is **sa**) and **Password** (default is **Z1ppyf0rever**), then click **Next**.

**Step 9** In the Cisco Unified Communications Manager (CUCM) connection details screen, type the Cisco Unified Communications Manager machine **IP Address**, your **CUCM Application User ID** and **Password**, and then click **Next**.



### Note

The Application User account specified by the User ID must already exist on the Cisco Unified Communications Manager. Creating a Cisco Unified Communications Manager User ID is described in [Creating and Assigning an Application User, page 4-2](#).



- Step 10** In both security alert messages, click **Yes**.
- Step 11** In the **Cisco TSP Information** screen, select and enter either the **IP Address** or **Host Name** of the Primary CTI Manager. If you have one, enter the details for the **Backup CTI Manager**, and then click **Next**.



**Note** If you are connecting to Cisco Unified Communications Manager 8.x or later, the installation process automatically installs the Cisco TSP version appropriate. If you are connecting to Cisco Unified Communications Manager 7.x, you must manually install and configure the Cisco TSP as described in [Appendix D, “Installing and Configuring the Cisco TSP for Cisco Unified Communications Manager 7.x”](#).

- Step 12** In the **Choose Destination Location** screen, either accept the default destination folder or **Browse** to where you want to install the files, and then click **Next**.
- Step 13** In the **Start Copying Files** screen, click **Next**.
- The Cisco Unified Attendant Console server is installed. The database wizard then runs.
- Step 14** In the **Database Wizard**, click **Next**.



**Note** During database creation, the server driver media setting is set according to the CUCM version passed by the server installer.

If you are upgrading the software, your system already contains a configuration database and a logging database, and you are prompted to overwrite each in turn:

- Click **Yes** to create a new, empty database. This will delete all of your server settings, including queues and CTI port numbers.
- Click **No** to upgrade the existing database, retaining all of your server settings.

- Step 15** When the wizard has installed the Configuration and Logging databases, click **Finish**.
- Cisco Unified Communications Manager TSP is configured.
- Step 16** If any third-party applications that might interfere with the TSP configuration are running, you are prompted to close and automatically restart them. Accept this option and click **OK**.
- If you receive a message saying that setup was unable to close the applications, click **OK**.
- Step 17** In the Wizard Complete screen, select **Yes, I want to restart my computer now**, and then click **Finish**.
- Your computer restarts, with the Cisco Unified Communications Manager server installed.

You need to license your system before the 5-day evaluation period expires. For more information, see [Licensing Purchased Software, page 6-5](#).

## Disabling Remote Access Connection Manager Service

The Microsoft Windows Remote Access Connection Manager service can cause problems with the Cisco Unified Attendant Console server and Cisco TSP; so you must disable it.

- Step 1** In Control Panel, open **Administrative Tools**, and then double-click **Services**.

- Step 2** Right-click the **Remote Access Connection Manager** service, and then click **Properties**.
  - Step 3** In the dialog box **General** tab set **Startup type** to **Disabled**, and then click **OK**.
  - Step 4** Restart your machine for the change to take effect.
-

# Installing Cisco Unified Attendant Console Client

**Note**

Note the following prerequisites:

- To complete this procedure you need administration rights.
- If you have a firewall on the client PC, configure firewall exceptions for:
  - Port 1433 (used by the SQL Server)
  - Port 1859 (used by the Cisco Unified Attendant Console server)
  - Port 1863 (used by the CUP server)
  - Port 1864 (used by the BLF Plug-in)
  - Port 5060 as an incoming and outgoing UDP port (used by the CUP server)

When you configure an exception, you should also configure its *scope* settings; these define which computers are allowed to send traffic for an exception. Choose the scope appropriate to your network setting.

**Note**

If you are upgrading your software, any configured user preferences are maintained.

To install Cisco Unified Attendant Console client:

**Step 1** Browse to the folder containing the installation files downloaded in [Obtaining Cisco Unified Attendant Console Software, page 5-2](#).

**Step 2** Double-click the setup program.

The Wizard is prepared and you are then presented with the Welcome screen.

**Step 3** In the Welcome screen, click **Next**.

**Note**

Click **Back** on any Wizard screen to go back to the previous one.

**Step 4** In the **Registration Information** screen type the **Name** of the registered owner of the software and their **Company**, and then click **Next**.

**Step 5** In the **Choose Destination Location** screen, accept the default destination:

C:\Program Files\Cisco\

To install the application to a different location, click **Browse** and select a different location.

Click **Next** to proceed.

**Step 6**

**Step 7** In the **Server Information** screen, enter the name of the machine running the Cisco Unified Attendant Console server (the Publisher Server in resilient installations), and then click **Next**. This information is required so that Cisco Unified Attendant Console can talk to the server properly.

Where a DNS Server is not present on the network or the Server Machine Name cannot be resolved, you must amend the Hosts file (WINDOWS\system32\drivers\etc\hosts) to reflect the Server IP Address and Server Machine Name. Please ensure that the installation prerequisites have been satisfied.

**Step 8** In the **Presence Information** screen, select the type of presence required:

- Microsoft Presence Status
- Cisco Presence Status
- None

and then click **Next**.



**Note** After installation, you can change the presence setting in Attendant Console by choosing **Options > Preferences > Presence**.

**Step 9** In the **Language Information** screen, select the language to use for the application, and then click **Next**.

**Step 10** In the **Visually Impaired Operator Support** screen, select **Yes** or **No** (the default), and then click **Next**.

**Step 11** In the **Icon Information** screen, select **Add Icon to Desktop** to place the Cisco Unified Attendant Console icon on your desktop, and then click **Next**.

A summary of the information you have entered is displayed.

**Step 12** If you are happy with the settings, click **Next** to copy the files and install the software.

**Step 13** In the installation completed screen, click **Finish**.

## Setting Data Execution Prevention



**Note** To perform this procedure, you need to have administration rights.

If you are installing Cisco Unified Attendant Console client on any of these operating systems:

- Windows Vista Professional (32 bit and WoW64)
- Windows 7 (32 bit and WoW64)

you must set Data Execution Prevention (DEP) to a less restrictive setting than the default. To do this perform the following steps—or their equivalent under your operating system:

**Step 1** Right-click **My Computer** and select **Properties**.

**Step 2** In the window, select **Advanced system settings**.

**Step 3** In the **System properties** window, select the **Advanced** tab.

**Step 4** Under **Performance**, click **Settings**.

**Step 5** In the **Performance Options** dialog box, select the **Data Execution Prevention** tab.

**Step 6** Select **Turn on DEP for essential windows programs and services only**, then click **OK**.

**Step 7** In the **System properties** window, click **OK**.







## CHAPTER 6

# Configuring and Licensing Cisco Unified Attendant Console Server

---

Cisco Unified Attendant Admin is a web-based tool that administrators use to configure Cisco Unified Attendant Console server, which, in turn, determines how Cisco Unified Attendant Console operates. The configuration is stored in a Microsoft SQL Server database.

Cisco Unified Attendant Console server and Cisco Unified Communications Manager communicate through the AXL API, using SSL, to synchronize the system devices used for queuing, servicing and parking calls. These devices are created as CTI Ports and CTI Route Point devices within the Cisco Unified Communications Manager database.

This chapter describes how to license the Cisco Unified Attendant Console server, and how to configure it using Cisco Unified Attendant Admin. Most configuration changes take place in real-time, but for some you have to restart the Cisco Unified Attendant Console server. This chapter covers the following main topics:

- [Administrator Login, page 6-1](#)
- [Home Page, page 6-2](#)
- [Licensing Cisco Unified Attendant Console Software, page 6-4](#)
- [Engineering Menu, page 6-6](#)
- [System Configuration Menu, page 6-16](#)
- [User Configuration Menu, page 6-24](#)

## Administrator Login

Cisco Unified Attendant Admin is accessible only to administrators. The default user name is ADMIN and the default password is CISCO (the user name and password are not case sensitive).

To log on to Cisco Unified Attendant Admin:

---

**Step 1** In an internet browser, enter the URL specified by your network administrator to access Cisco Unified Attendant Admin. This has the format: `http://<<ip address of Cisco Unified Attendant Console server>>/WebAdmin/login.aspx`.

For example, `http://209.165.200.224/WebAdmin/login.aspx`.

The **Login** page opens.

**Step 2** Enter your **Username** (not case-sensitive). The default is ADMIN.

**Step 3** Enter your **Password** (not case-sensitive). The default is CISCO.



**Note**

To clear the contents of the **User name** and **Password** fields, click **Reset**.

**Step 4** Click **Login**.

The home page is displayed.

## Home Page

The Cisco Unified Attendant Admin home page contains the main menus for configuring the application, and also the software version numbers and the registration status.

You can use the **Navigation** controls at the top right of the page to access Cisco Unified Reporting. Simply select the function and then click **Go**. For more information, see [Appendix B, “Cisco Unified Reporting”](#).




## Menu Options

The Cisco Unified Attendant Admin menus are:











- **Engineering**—control and configure connectivity and support management. For more information, see [Engineering Menu, page 6-6](#).
- **System Configuration**—manage synchronization of devices and queues with Cisco Unified Communications Manager. For more information, see [System Configuration Menu, page 6-16](#).
- **User Configuration**—manage Cisco Unified Attendant Console configuration. For more information, see [User Configuration Menu, page 6-24](#).
- **Help**—view help on Cisco Unified Attendant Admin and licensing the applications. For more information about licensing the software, see [Licensing Cisco Unified Attendant Console Software, page 6-4](#).

## Toolbar

When you select a menu option a new page is displayed where you configure that aspect of the Cisco Unified Attendant Console server. Each of these pages includes a toolbar, which contains one of more of the following icons:

Icon	Function
	Add or install an item
	Remove or uninstall an item
	Save



Icon	Function
	Reset Password
	Test Connection or Validate Replication
	Repair Database or Repair and Purge Database
	Database Repair Report or Replication Report.
	Calendar (select a date).
	Start Server
	Stop Server
	View information for a service.
	Refresh
	Synchronize with Cisco Unified Communications Manager or Re-initialize Replication.

## Data Entry Fields

Most pages contain data entry fields with the following properties:

- The valid range or types of characters for each parameter are displayed to the right of the field in red
- Invalid input in any field is denoted by a red asterisk.

## Accessibility for Users with Disabilities

Cisco Unified Attendant Admin includes features that make it easier for blind and visually impaired users.

- All controls are labelled and have a tool tip. The controls are described in [Chapter 6, “Configuring and Licensing Cisco Unified Attendant Console Server.”](#)
- Context-sensitive help for every page.
- Attendants can use Cisco Unified Attendant Console with a screen reader plug-in called JAWS. The screen reader provides the attendant with information on the Cisco Unified Attendant Console status and the text in the windows.

For more information on the Cisco Accessibility Program visit

<http://www.cisco.com/web/about/responsibility/accessibility/contact.html>

# Licensing Cisco Unified Attendant Console Software

This section describes how to license your Cisco Unified Attendant Console software. It contains the following main topics:

- [Licensing Evaluation Software](#)
- [Licensing Purchased Software](#)
- [Relicensing Software](#)



## Note

Once a system is fully licensed you cannot apply temporary licenses for additional seats. You must wait for the order process to be fulfilled by Cisco before you can add additional seats to an already licensed server.

You need a valid license to be able to perform a major upgrade. When you install a major upgrade your existing license information is erased and the five day evaluation period is restarted. To continue using the application after this time you must obtain a new license.

## Licensing Evaluation Software

You can use downloaded software for 5 days before you must license it. Licensing the software enables you to evaluate it for 60 more days. If you do not license the download, you will be unable to use it after the fifth day.



## Note

You cannot extend the 60-day evaluation period or apply a second 60-day evaluation license. If you need more evaluation time, you must reinstall your system from the operating system level, and then apply a new 60-day evaluation license.

To license the evaluation software, do the following:

- Step 1** Use your internet browser to go to <http://www.cisco.com/go/ac>.
- Step 2** Enter your **User Name** and **Password** and then click **Log In**.
- Step 3** In the navigation bar, click **ACTIVATE EVALUATION SOFTWARE**.
- Step 4** Select your **Reseller**, **Customer** and **Customer Site**.



## Note

If your reseller, customer or site are not available. choose the options to add them.

- Step 5** Enter your Cisco Unified Attendant Console **Registration Code**.



## Note

To find your Registration Code, log into Cisco Unified Attendant Console Web Admin and choose **Help > Licensing**.

- Step 6** Select the **Product** that you have installed.
- Step 7** Select the **Version** of the product you have installed.

- Step 8** Click **Next**.  
A registration (.RGF) file is e-mailed to you, and a message to this effect is displayed in the web page.
- Step 9** Open the email and save the registration file to a location that can be browsed by the Cisco Unified Attendant Console server.
- Step 10** Log into Cisco Unified Attendant Console Web Admin and choose **Help > Licensing**.
- Step 11** In the **License Management** page, select **Registration File**.
- Step 12** Click **Browse** and then open the Registration File.
- Step 13** Click **Submit** to complete license activation.
- Step 14** Stop and then restart the services, as described in “[Service Management](#)” on page 6-9.
- 

## Licensing Purchased Software

You can purchase the software at any time in the evaluation periods, giving you unlimited use. When you purchase the software Cisco provide you with a 27-digit license activation code (LAC). After activating the software, you cannot revert to the trial version.

To activate your purchased software, do the following:

- 
- Step 1** Use your internet browser to go to <http://www.cisco.com/go/ac>.
- Step 2** Enter your **User Name** and **Password** and then click **Log In**.
- Step 3** In the navigation bar, click **ACTIVATE PURCHASED SOFTWARE**.
- Step 4** Select your **Reseller**, **Customer** and **Customer Site**.



---

**Note** If your reseller, customer or site are not available. choose the options to add them.

---

- Step 5** Enter the **Registration Code**, and then click **Submit**.



---

**Note** To find your Registration Code, log into Cisco Unified Attendant Console Web Admin and choose **Help > Licensing**.

---

- Step 6** Enter at least one License Activation Code and then click **Submit**.
- Step 7** In the License Request Confirmation page, optionally enter an additional e-mail address and click **Submit**. If you want to change the License Activation Code you entered in [Step 6](#) before proceeding, click **Revise License Request**.  
A registration (.RGF) file is e-mailed to you, and license request confirmation information is displayed in the web page.
- Step 8** Open the email and save the registration file to a location that can be browsed by the Cisco Unified Attendant Console server.
- Step 9** Log into Cisco Unified Attendant Console Web Admin and choose **Help > Licensing**.
- Step 10** In the **License Management** page, select **Registration File**.
- Step 11** Click **Browse** and then open the Registration File.

- Step 12** Click **Submit** to complete the registration.
- Step 13** Stop and then restart the services, as described in [“Service Management” on page 6-9](#).
- 

## Relicensing Software

If you do any of the following to the server environment you must re-license the software with a new registration code:

- Reinstall the operating system on the same hardware
- Install a different operating system on the same hardware
- Add or remove certain hardware (such as an NIC card)
- Install the software on different hardware
- Install a different operating system
- Perform a major upgrade of the Cisco Unified Attendant Console software

And within a VM Environment:

- Copy the VM image
- Perform a major upgrade of the Cisco Unified Attendant Console software

All these cause the license to expire, and the System and User Configuration menus to disappear from Cisco Unified Attendant Admin.

To re-license a server, contact Cisco TAC and request a re-host. You will need to provide them with either the original license activation codes or the SO number of your purchase.

## Engineering Menu

The *Engineering* menu provides connectivity and support management facilities. It includes the following options:

- **Administrator Management.** This is described in [Administrator Management, page 6-6](#).
- **Database Management.** This is described in [Database Management, page 6-7](#).
- **Database Purge.** This is described in [Database Purge, page 6-8](#).
- **Service Management.** This is described in [Service Management, page 6-9](#).
- **CUCM Connectivity.** This is described in [CUCM Connectivity, page 6-11](#).
- **CUPS Connectivity.** This is described in [CUPS Connectivity, page 6-13](#).
- **Logging Management.** This is described in [Logging Management, page 6-13](#).

## Administrator Management

The *Administration Management* option enables you to change or reset the administrator password used when logging into the Web Admin application.




---

**Note** The password is not case sensitive.

---

To change the password:

---

**Step 1** Choose **Engineering > Administrator Management**.

**Step 2** Enter **Old Password**. The current password.

**Step 3** Enter **New Password**.

It is good practice to have a strong password that utilizes both numeric and alpha characters. The Cisco Unified Attendant Console server allows up to a maximum of 20 characters including the use of Special Characters such as %, \$, £, &.

**Step 4** Re-enter the new password in the **Confirm New Password** field.

**Step 5** Click **Save** to save changes.

---

To set the password back to its default value, CISCO, click **Reset Password**.

## Database Management

The configuration database is created when you install the Cisco Unified Attendant Console server. The *Database Management* option enables you to connect to the configuration database, to test the connection and to repair the database.

To connect to the database:

---

**Step 1** Choose **Engineering > Database Management**.

**Step 2** In **Server**, type the name or IP address of the machine where the Microsoft SQL Server is installed. For example, 209.165.202.128.

**Step 3** Type your SQL Server **Username**. If Microsoft SQL Server was installed using the Cisco Unified Attendant Console server Installation Wizard, the user name is **sa**.

**Step 4** Type your **Password**. If Microsoft SQL Server was installed using the Cisco Unified Attendant Console server Installation Wizard, the password is **Z1ppyf0rever**.




---

**Note** The SQL Server login password must be sufficiently complex to meet the Windows policy requirements described at <http://support.microsoft.com/kb/965823>.

---

**Step 5** **Save**, to save your new database selection.

**Step 6** You are prompted that Cisco Unified Attendant Console server must be restarted for the changes to take affect. Select the option to restart the server immediately.

### Test the Database

To test the specified database, click **Test Connection**.

### Repair the Database

To repair the specified database, click **Repair Database**.

Before repairing the database, Cisco Unified Attendant Admin must stop the server. After the database is repaired you must manually restart the server service. If you have repaired the database, you can view a repair report by clicking **Database Repair Report**. This opens a window that displays the following information:

- Database Name
  - SQL Server
  - Activity Start Date
  - Activity End Date
  - Status
  - Error Code
  - Error Description
- 

## Database Purge

The Database Purge option enables you to purge old call logging and operator session information from the database. Customers using SQL Server Express may need to do this because their database size is limited to 4 GB. If the logging database becomes full, some features and services may fail.

To determine the size of your SQL database, run SQL Management Studio, right-click the database, and then choose **Reports > Standard Reports > Disk Usage**.

To purge the database:

---

- Step 1** Choose **Engineering > Database Purge**.
- Step 2** Enter a **Start Date** either by entering it in the format yyyy-mm-dd (year-month-date) or by selecting it from the calendar.
- Step 3** Enter an **End Date** either by entering it in the format yyyy-mm-dd (year-month-date) or by selecting it from the calendar.
- Step 4** Click **Purge the Database**.  
Cisco Unified Attendant Admin stops the server and purges the database. You must manually restart the server service.
- Step 5** If you have purged the database, you can run a report by clicking **Database Purge Report**. This opens a window containing the following information:
  - Database Name
  - SQL Server
  - Activity Date
  - Purge Start Date
  - Purge End Date
  - Table Name
  - Number of Records effected
  - Status
  - Error Code

- Error Description
- 

## Service Management

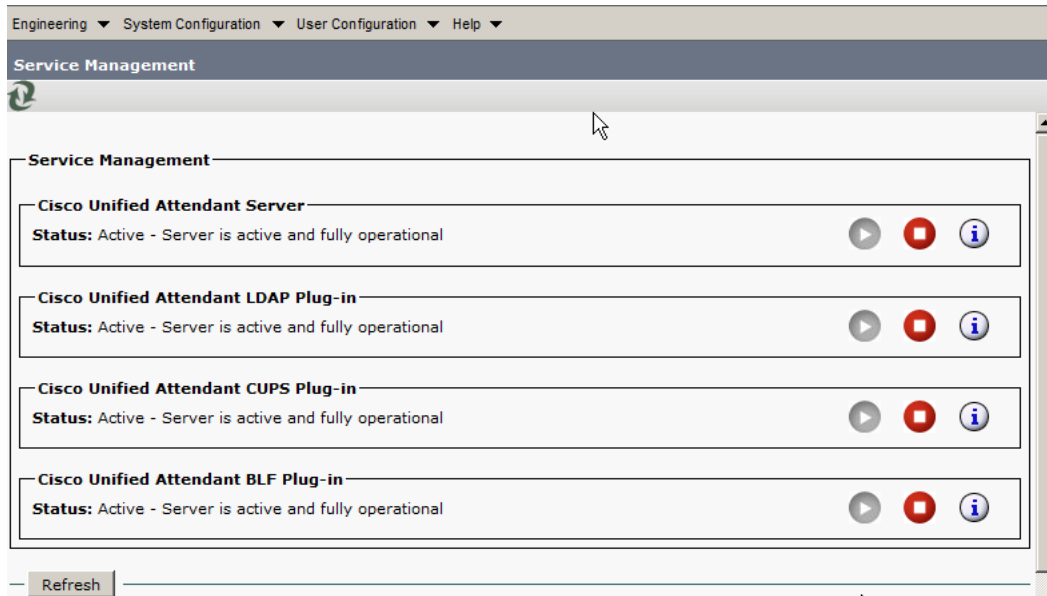
The Service Management option enables you to start, stop, and check the status of the following servers:

- Cisco Unified Attendant Server
- Cisco Unified Attendant LDAP Plug-in
- Cisco Unified Attendant CUPS Plug-in
- Cisco Unified Attendant BLF Plug-in





To manage a server:

- 
- Step 1** Choose **Engineering > Service Management**.

Figure 6-1 Service Management Page



Step 2 Use the following controls as appropriate:

Control	Icon	Description
Start Server		Start the server.
Stop Server		Stop the server.
Information		View the server activity and status.
Refresh		Update the page.

#### Information Displayed

The following information about the server and its connections is displayed:

Status	Description
Connected	The server and databases are connected.
Not Connected	The server and databases are not connected.
Standby	<b>Logging Database only.</b> The connection between the service and the Logging Database is not in use.

The data displayed depends on which server you choose.



## Cisco Unified Attendant Server Status

The following are displayed for the Cisco Unified Attendant (Console) server:

- The Server Activity of Active Calls and Logged-in Operators.
- The status of the following servers:
  - BLF-Plug-in — status of connection between Attendant Server and Attendant BLF plug-in
  - Configuration Database
  - Logging Database
  - Network — event network
  - If your Cisco Unified Attendant Console is running in resilient mode, the Inter Server Communication Status is also shown.

## Cisco Unified Attendant LDAP Plug-in Status

The following are displayed for the Cisco Unified Attendant LDAP Plug-in:

- The Server Activity of Active Sources and Active Synchs
- The status of the following servers:
  - Primary Server
  - Configuration Database

## Cisco Unified Attendant CUPS Plug-in Status

The following are displayed for the Cisco Unified Attendant CUPS Plug-in:

- The Server Activity of User Activity and Active Subscriptions
- The status of the Primary Server

## Cisco Unified Attendant BLF Plug-in Status

The following are displayed for the Cisco Unified Attendant BLF Plug-in:

- The Server Activity of Subscriptions and Connected Users
- The status of the following servers is displayed for the Cisco Unified Attendant Plug-in:
  - CT Link
  - DRM
  - COMMS
  - Database — the configuration database connectivity status
  - If your Cisco Unified Attendant Console is running in resilient mode, the Inter Server Communication Status is also shown.

## CUCM Connectivity

The Cisco Unified Communications Manager connection is essential to enable system devices to be configured automatically on Cisco Unified Communications Manager.

Cisco Unified Attendant Console supports the Legacy Driver for Cisco Unified Communications Manager Release 7.1(5) but uses the New Media Driver when connected to Cisco Unified Communications Manager Release 8.0 and later. If the media driver configuration does not match the Cisco Unified Communications Manager version, the Cisco Unified Attendant Console Server will not start and the BLF Plug-in will not be able to establish a CTI channel.

The *CUCM Connectivity* option enables you to set up and test the Cisco Unified Communications Manager connection. You can access the *CUCM Connectivity* option even when Cisco Unified Attendant Console Server is not running.

To set up and test the Cisco Unified Communications Manager connection:

---

**Step 1** Choose **Engineering > CUCM Connectivity**.

The Cisco Unified Attendant Console Server validates its internal driver settings against the Cisco Unified Communications Manager Release.

**Step 2** If the media driver is correct, continue at [Step 3](#).

If the media driver is incorrect, a message is displayed:

*Attendant Admin has detected that the media driver configuration for the selected CUAC server does not match your CUCM version. Please click Save button so the Attendant Admin can correct the media driver configuration for the selected CUAC Server. You also need to click on other CUAC servers to make sure that the media driver configuration for other servers is correct.*

Follow the instructions in the message.

**Step 3** Enter a **CUCM name or IP**, the name or IP address of the machine where Cisco Unified Communications Manager is installed.

**Step 4** Enter **CUCM Port** number. The Cisco Unified Communications Manager port to connect to. Accept the default, 443.

**Step 5** Enter **User name**, the Cisco Unified Communications Manager application user ID. For more information about application users, see [Creating and Assigning an Application User](#), page 4-2.

**Step 6** Enter the Cisco Unified Communications Manager application user **Password**.



**Note**

The Username and Password are case-sensitive. Make sure you enter the information in these fields in correct case.

The Username and Password you enter must belong to an application user, for example CCMAAdministrator.

---

**Step 7** To save the connection details, click **Save**.

Cisco Unified Attendant Admin validates the media driver used to communicate with the specified Cisco Unified Communications Manager.

- If the media driver setting of the selected server is correct and Attendant Server is not running, the following message appears:

*Update Complete. Please restart Attendant Console services of selected CUAC server for this change to take effect.*

- If the media driver setting is incorrect, the media driver setting of the selected server is corrected and the following message appears:

*Attendant Admin detected that the media driver configuration for the selected CUAC server did not match your CUCM version and has changed the media driver configuration to match your CUCM version. Please restart Attendant Console services of selected CUAC server for this change to take effect.*

- Step 8** Restart the Attendant Console services of the selected Cisco Unified Attendant Console Server.
- Step 9** To test the connection, click **Test Connection**.
- 

## CUPS Connectivity

The CUPS Connectivity page is used to configure the Cisco Unified Attendant CUPS Plug-in with the Cisco Unified Presence server component of Cisco Unified Communications Manager. Cisco Unified Attendant Admin uses SIP SIMPLE to communicate with the Cisco Unified Presence server.

To manage connectivity details:

- 
- Step 1** Choose **Engineering > CUPS Connectivity**.
- Step 2** Type the **CUPS IP or FQDN**. The IP Address or Fully Qualified Domain Name of the Cisco Unified Presence Server. For example, 209.165.201.0. Leave this empty to disable Cisco Unified Presence server.
- Step 3** Type the **CUPS Port** to connect to. This is set to 5060 by default (when not using TLS).
- Step 4** Type the **Proxy domain**, which is used to authenticate the SIP SIMPLE communication. Set this to the Cisco UP SIP Proxy Domain setting. If you leave this blank, the IP address of the Cisco Unified Presence server is used.
- Step 5** Type the **TLS port**. The Transport Layer Security Port. By default this is -1, indicating that TLS is switched off. To enable TLS, specify a port number (Normally either 5061 or 5062).
- Step 6** If TLS is enabled, type the **Certificate nickname** (used to identify the correct certificate in the certificate database) and the **Certificate database password** (to validate the nickname and provide access to the database).
- Step 7** To save, click **Save**.
- Step 8** To test, click **Test Connection**.
- 



**Note**

**IMPORTANT**—The Cisco Unified Attendant CUPS Plug-in has to be added to the firewall information on the Communications Manager. See section [Configuring Access to Cisco Unified Presence Server, page 4-3](#).

---

## Logging Management

When you install Cisco Unified Attendant Console, logging is set up with a default configuration that suits most requirements. However, you can use the Logging Management option to enable/disable real-time logging of:

- Cisco Unified Attendant Server

- Cisco Unified Attendant LDAP Plug-in
- Cisco Unified Attendant CUPS Plug-in
- Cisco Unified Attendant BLF Plug-in

To manage logging:

**Step 1** Choose **Engineering > Logging Management**.

The fields in the form are described below:

Field	Description
<b>Cisco Unified Attendant Console server</b>	
Main process	Log the main process.
CTI process	Log the CTI process.
Communication process	Log the communication process.
Router process	Log the router process.
Database process	Log the database process.
Logging path & file name	The logging file path and name. For example, C:\Program Files\Cisco\Attendant Server\Log\ICD.txt.
Number of files	The number of log files that can be created in the logging folder. The default is 10.
Lines per file	The number of lines each log file can contain. The default is 10000.
Service logging path & file name	The service logging file path and name. For example, C:\Program Files\Cisco\Attendant Server\Log\ICD1.txt.
<b>Cisco Unified Attendant LDAP Plug-in</b>	
Logging level	One of: Detailed (default), Advanced, Minimum, Full.
Logging path & file name	The LDAP Plug-in logging file path and name. For example, C:\Program Files\Cisco\LDAP Plug-in\Log\log.txt.
Number of files	The number of log files that can be created in the logging folder. The default is 10.
Lines per file	The number of lines each log file can contain. The default is 200000.
<b>Cisco Unified Attendant CUPS Plug-in</b>	
Logging level	One of: Detailed (default), Advanced, Minimum, Full.
Logging path & file name	The CUPS Plug-in logging file path and name. For example, C:\Program Files\Cisco\CUPS Plug-in\Log\log.txt.
Number of files	The number of log files that can be created in the logging folder. The default is 10.
Lines per file	The number of lines each log file can contain. The default is 10000.
<b>Cisco Unified Attendant BLF Plug-in</b>	
Logging level	One of: Detailed (default), Advanced, Minimum, Full.
Logging path & file name	The BLF Plug-in logging file path and name. For example, C:\Program Files\Cisco\BLF Plug-in\Log\log.txt.

Field	Description
Number of files	The number of log files that can be created in the logging folder. The default is 100.
Lines per file	The number of lines each log file can contain. The default is 100000.

- Step 2** Enter Cisco Unified Attendant Console Server Logging Management details, as described in [Cisco Unified Attendant Console Server Logging, page 6-15](#).
- Step 3** Enter Cisco Unified Attendant LDAP Plug-in Logging Management details, as described in [Cisco Unified Attendant LDAP Plug-in Logging, page 6-15](#).
- Step 4** Enter Cisco Unified Attendant CUPS Plug-in Logging Management details, as described in [Cisco Unified Attendant CUPS Plug-in Logging, page 6-16](#).
- Step 5** Enter Cisco Unified Attendant BLF Plug-in Logging Management details, as described in [Cisco Unified Attendant BLF Plug-in Logging, page 6-16](#).
- Step 6** Click **Save** to save the changes.

## Cisco Unified Attendant Console Server Logging

Cisco Unified Attendant Console server logs every event that it generates. The following processes are logged:

- Main Process
- Router Process
- CTI Process
- Database Process
- Communication Process

By default, the Main and Router processes are selected for logging. To keep the log file to a manageable size, log the fewest processes possible.

You should only need to amend these settings if requested as part of a support case investigation.

To manage Cisco Unified Attendant Console server logging:

- Step 1** Select the process(es) to log.
- Step 2** Specify the **Logging path** and **file name**.
- Step 3** Specify the **Number of files** to create.
- Step 4** Specify the **Lines per file** to which to restrict the file.
- Step 5** Specify the **Service logging path** and **file name** to maintain log of the Cisco Unified Attendant Console server service.

## Cisco Unified Attendant LDAP Plug-in Logging

Cisco Unified Attendant Admin can log all the LDAP Plug-in events and processes, so that you can check LDAP Plug-in performance and activity, and functionality and configuration problems.

To manage Cisco Unified Attendant LDAP Plug-in logging:

- 
- Step 1 Select the **Logging Level**.
  - Step 2 Specify the **Logging path** and **file name**.
  - Step 3 Specify the **Number of files** to create.
  - Step 4 Specify the **Lines per file** to which to restrict the file.
- 

## Cisco Unified Attendant CUPS Plug-in Logging

Cisco Unified Attendant Admin can log all CUPS Plug-in events and processes, so that you can check CUPS Plug-in performance and activity, and functionality and configuration problems.

To manage Cisco Unified Attendant CUPS Plug-in logging:

- 
- Step 1 Select the **Logging Level**.
  - Step 2 Specify the **Logging path** and **file name**.
  - Step 3 Specify the **Number of files** to create.
  - Step 4 Specify the **Lines per file** to which to restrict the file.
- 

## Cisco Unified Attendant BLF Plug-in Logging

Cisco Unified Attendant Admin can log all BLF Plug-in's events and process, so that you can check BLF Plug-in performance and activity, and functionality and configuration problems.

To manage Cisco Unified Attendant BLF Plug-in logging:

- 
- Step 1 Select the **Logging Level**.
  - Step 2 Specify the **Logging path** and **file name**.
  - Step 3 Specify the **Number of files** to create.
  - Step 4 Specify the **Lines per file** to which to restrict the file.
- 

# System Configuration Menu

The *System Configuration* menu enables you to manage the synchronization of devices and directories with Cisco Unified Communications Manager. It includes the following options:

- **Queue Device Groups**. This option enables you to create and configure Queue Device Groups, as described in [Queue Device Groups, page 6-18](#), and to add and manage system devices, as described in [System Device Management, page 6-17](#).
- **Synchronize with CUCM**. This includes the CUCM Sync Report, and is described in [Synchronize with CUCM, page 6-19](#).

- **Directory Synchronization.** This is described in “[Directory Synchronization](#)” on page 6-22.
- **Directory Field Mappings.** This is described in “[Directory Field Mapping](#)” on page 6-23.
- **Directory Rules.** This is described in “[Directory Rules](#)” on page 6-23.

## System Device Management

To configure devices and synchronize device ranges with Cisco Unified Communications server:

- Step 1** Choose **System Configuration > Queue Device Groups**, and select the server as described in [Queue Device Groups, page 6-18](#).

The System Device Management page lists the devices on the selected server.

The fields in the System Device Management page are described below:

Field	Description
<b>Queue Device Group</b>	The name of the queue device group for this server.
<b>Template Device</b>	
Copy all device properties from this device	You can create a template CTI device with custom settings in Cisco Unified Communications Manager, and use it as a quick way of assigning these settings to your Cisco Unified Attendant Console devices. If you do not have a template, default values are assigned to your devices.  Click <b>Find Template Device</b> to search for a template.  <b>Note:</b> If under <i>Protocol Specific Information</i> a <i>Subscribe Calling Search Space</i> is configured, then under <i>Device Information</i> an <i>Owner User ID</i> must also be configured, otherwise an error occurs when you to synchronize the CTI ports with Cisco Unified Communications Manager. We recommend that you use the Application User ID allocated for Cisco Unified Attendant Console for the Owner User ID.
<b>CT Gateway Devices</b>	
From	The number of the first device in the range to configure. For example 6301.
To	The number of the last device in the range to configure. For example 6302.
<b>Service Devices</b>	
From	The number of the first device in the range to configure. For example 6401.
To	The number of the last device in the range to configure. For example 6402.
<b>Park Devices</b>	
From	The number of the first device in the range to configure. For example 6501.
To	The number of the last device in the range to configure. For example 6502.

All the properties of the Template Device, such as device pool, partition, and calling search space, are mapped onto any new devices you create.

**Step 2** Click **Find Template Device** to list and search for template devices to use.

Define the search filter:

- The device property—such as **Device Name**, **Description**, or **Directory Number**—to check.
- A condition of the device property, such as **is not empty**, or how to compare the property with a string, such as **begins with**.
- A string to compare to the device property in the specified way (used only with **begins with**, **ends with**, **contains** and **is exactly**).

You can also add search filters (up to a maximum of 10) using the plus (+) and minus (-) controls; thereby narrowing the search.

**Step 3** Select a template device and click **Save**.



**Tip**

When you select a Template Device, the template must have a unique, unused DN on Cisco Unified Communications Manager. If the same DN is used for multiple devices calls may route incorrectly.

**Step 4** Enter a device range for each CT Gateway Device, Service Device and Park Device (for descriptions of these devices, see [Cisco Unified Communications Manager System Devices, page 1-4](#)).



**Note**

By default the maximum internal device digit length is set to 4 digits. To change this setting, choose **User Configuration > General Properties** and **Maximum internal device digit length**.

**Step 5** Click **Save** to save the data.

**Step 6** Click **Synchronize with CUCM** to display the **Synchronize with CUCM** page, as described in [Synchronize with CUCM, page 6-19](#).

## Queue Device Groups

The Queue Device Groups option enables you to create and configure Queue Device Groups—each queue has its own resource group with its own audio source for music on hold; calls to the queue DDI number use the devices in a resource group pool. The option provides access to the **Queue Device Groups** page, which you use to configure the pooled devices as described in [System Device Management, page 6-17](#).

A default Queue Device Group, called *Default Queue Device Group*, is created when you install the Cisco Unified Attendant Console.



**Note**

If you have a resilient system and you are logged into the Subscriber server, you cannot change any of the Queue Device Groups,

To create a queue device group:

**Step 1** Choose **System Configuration > Queue Device Groups**.



A page listing all the queue device groups that satisfy the **Find** filter is displayed.

**Step 2** Either

Click **Add New**, to create a new queue device group,

or

**Find** a Queue Device Group to configure:

- a. Specify a filter: a string to search for and where to search for it.
  - Accept **Queue Device Group** to search the queue device group names.
  - A condition of the Queue Device Group name, such as **is not empty**, or how to compare the name with a string, such as **begins with**.
  - A string to compare to the Queue Device Group name in the specified way (used only with **begins with**, **ends with**, **contains** and **is exactly**).

You can also add another filter using the plus (+) and minus (-) controls to narrow the search.

- b. Click **Find**.

A list of the queue device groups matching the Find filter is displayed.

**Step 3** **Select** the Queue Device Group to configure.

The **Queue Device Groups** page is displayed.

**Step 4** To change the name of the queue device group, edit the text in the field and click **Save**.

**Step 5** To access the System Device Management page so that you can manage system devices, select the appropriate server under **System Devices**. For the rest of the procedure, see [System Device Management, page 6-17](#).



**Note**

---

Each time you change devices you must synchronize Cisco Unified Attendant Console with Cisco Unified Communications Manager, as described in the next section.

---

## Synchronize with CUCM

All devices from all servers are synchronized with Cisco Unified Communications Manager. Devices are associated with their own TSP profile.

The *Synchronize with CUCM* option enables you to synchronize device configurations with Cisco Unified Communications Manager via the AXL API. It creates the devices that have been configured if they don't already exist and assigns them to the Application User profile.

This option synchronizes the following devices:

- Queue Locations
- CT Gateway Devices
- Service Devices
- Park Devices

To synchronize devices with Cisco Unified Communication Manager:

---

**Step 1** Choose **System Configuration > Synchronize with CUCM**.

The devices and queue locations are listed.

Each list contains the following information:

Field	Description
Device DN	The directory number of each configured device. For example, 2000.
Device Type	The type of device. For example, CTI Route Point.

**Step 2** To ignore any call forwarding settings that have been set against a template device, select **Ignore call forwarding settings**.

**Step 3** Click **Synchronize with CUCM**.

Cisco Unified Attendant Admin automatically synchronizes the devices with Cisco Unified Communications Manager. You do not have to login to the Cisco Unified Communications Manager administration.

Synchronization may take several minutes to complete. Once synchronization is underway, you can click **CUCM Sync Report** to see how it is progressing.

The report contains the following fields:

Field	Description
<b>Sync Status</b>	
Status	Synchronization state; one of: <ul style="list-style-type: none"> <li>• Associating</li> <li>• Completed</li> <li>• Creating</li> <li>• Deleting</li> <li>• Validating</li> </ul>
Ignore call forward settings	Whether Ignore call forward is set.
Started At	The date and time when Cisco Unified Communications Manager synchronization started. For example, 2012-04-12 16:08:52.
Ended At	The date and time when Cisco Unified Communications Manager synchronization ended. For example, 2012-04-12 16:10:52.
<b>CUCM Connection Validation</b>	
User Name	The Cisco Unified Communications Manager Application User profile ID.
Server Name	The name of the server hosting Cisco Unified Communications Manager.
Status	The status of the connection validation; one of: <ul style="list-style-type: none"> <li>• Completed</li> <li>• Error</li> <li>• Validating</li> </ul>
Error Code	The code of the error that has been encountered. For example, 9400. The error codes are described in the table on <a href="#">page 6-21</a> .

Field	Description
Error Description	This field gives a brief description of the error that has been encountered. For example, HTTP/1.1 503 Service Unavailable.
<b>Template Device Validation</b>	
Status	The status of the template device validation; one of: <ul style="list-style-type: none"> <li>• Completed</li> <li>• Error</li> <li>• Validating</li> </ul>
Error Code	The code of any error encountered while validating a device. For example 9300. The error codes are described in the table on <a href="#">page 6-21</a> .
Error Description	The description of the error. For example, Template device not found.
<b>Device Sync</b>	
Device DN	The number of the device being synchronized. For example, 6101.
Device Type	The type of device being synchronized. for example, CT Gateway Device.
Status	The status of the device synchronization; one of: <ul style="list-style-type: none"> <li>• Completed</li> <li>• Error</li> <li>• Inprogress</li> </ul>
Error Code	The code of any error encountered while synchronizing a device. For example 9550. The error codes are described in the table below.
Error Description	The description of the error. For example, HTTP/1.1 403 Access to the requested resource has been denied.

The following errors may occur during CUCM synchronization.

Error Code	Error Description
<b>Cisco Errors</b>	
Less than 5000	These errors correspond to DBL exception error codes.
5000	Unknown Error—an unknown error occurred while processing the request. This can be due to a problem on the server or errors in the request.
5002	Unknown Request Error—the user agent saves a request that is unknown to the API.
5003	Invalid Value Exception—an invalid value is detected in the XML request.
5007	Item Not Valid Error—the system identified the specified item does not exist or was specified incorrectly at input.
599	Schema Not Supported—there has been an AXL request error because the schema is not supported.
<b>Internal Errors</b>	
9000	Exception in AXL component—an unknown error occurred while processing the AXL component.
9100	Function parameter error—the parameter value is empty or null.

Error Code	Error Description
9200	Device already created—the device being synchronized already exists in Cisco Unified Communications Manager and is synchronized with the client.
9300	Template device not found—the template device that you have selected does not exist.
9400	HTTP/1.1 503 Service Unavailable—the AXL service is unavailable.
9500	HTTP/1.1 401 Unauthorized—the user authentication credentials are invalid.
9550	HTTP/1.1 403 Access to the requested resource has been denied—access denied error from AXL response.
9555	HTTP/1.1 404—there is an invalid header location in the SOAP Request.
9600	Call Manager OS not recognized—the operating system returned by Cisco Unified Communications Manager is neither Linux nor Windows.
9650	Call Manager Version not detected—the AXL Response from Cisco Unified Communications Manager did not provide the version.
9700	Socket error—there are network problems.
9750	Connection refused—the server did not respond or the request has been posted to an invalid URL.
9755	Read Timeout—the server did not respond.
9800	Normal Exit—normal exit on completion.
10000	Connection timeout—connection timeout from the server.

## Directory Synchronization

Use **Directory Synchronization** to configure the synchronizing of the contacts database with Cisco Unified Communications Manager via the AXL API.

To configure directory synchronization do the following:

**Step 1** Choose **System Configuration > Directory Synchronization**.

The **Directory Synchronization** page is displayed. The page contains the following **Directory Synchronization** parameters:

- **Directory Import**—To enable directory import, select **Enable contact synchronization**; this enables **Auto Synchronization** and **Schedule Settings**.
- **Auto Synchronization**—Set the automatic synchronization preferences:
  - **On start-up**—Select this to start the synchronization when Cisco Unified Attendant Console server starts.
  - **On reconnect**—Select this to start the synchronization when Cisco Unified Attendant Console server reconnects with the LDAP plug-in after a connection failure.
- **Route Partition**—This prioritizes which DN to import when there are identical DNs in different partitions. Either **Select a route partition** or one of the following:
  - <None>—disregard the route partition field when synchronizing the directory.
  - **CUCM <None> partition**—picks up only those devices in the Cisco Unified Communications Manager specified as (None).
- **Schedule Settings**—The synchronization schedule. Enter the following:

- **Type**—The frequency of synchronization. Select one of:
    - **None**
    - **Hourly**
    - **Daily**
    - **Weekly**
    - **Monthly**
  - **Every [(Number)(Type)]**—The data type changes according to the **Type**. For example, Every 2 Week(s) or Every 1 Day(s).
  - **Start date**—The date on which to start synchronizing.
  - **Start time**—The time on which to start synchronizing.
- Step 2** Set the Directory Synchronization parameters.
- Step 3** Click **Save** to save the changes.
- 

## Directory Field Mapping

*Directory Field Mapping* enables you to map information from the Cisco Unified Communications Manager directory to the contacts database.

To map a field:

- 
- Step 1** Choose **System Configuration > Directory Field Mapping**.  
The mappings are listed.
- Step 2** Click **Add New**.  
The **Field Mapping Information** is displayed.
- Step 3** Select a **Source field** in the AXL component of Cisco Unified Communications Manager database
- Step 4** Select a **Destination field** in the contacts database.
- Step 5** Enter a **Default value**, which is written to the Destination field if the Source field is empty.
- Step 6** Click **Save** to add the mapping.
- 

## Directory Rules

The *Directory Rules* option enables you to manage the *filters* to use when importing information from the Cisco Unified Communications Manager database to the Cisco Unified Attendant Console server. The filters are built into *rules*. You can have multiple filters in a rule, or apply multiple rules.



**Tip**

Multiple filters within a rule are combined with a logical AND. For example, if a rule contains lastname = T\* and Department = Product, all people in the Product team who have a last name starting with T are imported.

If you have multiple rules, each containing a single filter, the rules/filters are combined with a logical OR. For example, if Rule 1 contains lastname = T\* and Rule 2 contains Department = Product, all the people with a lastname beginning with T are imported, as are all the people in the Product team.

To add a Directory Rule:

- 
- Step 1 Choose **System Configuration > Directory Rules**.
  - Step 2 To create a new rule, click **Add New**. To add a filter to an existing rule, **Select** the rule and continue from [Step 4](#).
  - Step 3 Enter a **Rule Name**, and then click **Save**.
  - Step 4 To add a filter to the rule, click **Add New**.
  - Step 5 Select a **Source field**, against which the filter **Value** is matched.
  - Step 6 Select an **Operator**, which determines how the Value is matched in the Source field. Choose one of: **Equal to**, **Approx. Equal to**, **Less and Equal to (<=)**, **Greater and Equal to (>=)**.
  - Step 7 Enter the **Value** to match against the **Source field** using the **Operator**.
  - Step 8 Click **Save** to save the filter in the rule.
- 

## User Configuration Menu

The User Configuration menu enables administrators to configure Cisco Unified Attendant Console. It includes the following options:

- **General Properties**. This is described in [General Properties, page 6-24](#).
- **Queue Management**. This is described in [Queue Management, page 6-26](#).
- **Operator Management**. This is described in [Operator Management, page 6-28](#).

## General Properties

The *General Properties* option enables you to manage the Cisco Unified Attendant Console global configuration.

To configure Cisco Unified Attendant Console:

- 
- Step 1 Choose **User Configuration > General Properties**.
  - Step 2 Enter the **General Properties**:
    - **Internal/External Access**—These properties enable Cisco Unified Attendant Console to distinguish between internal and external calls:
      - **Minimum internal device digit length**—the minimum number of digits used by an internal device
      - **Maximum internal device digit length**—the maximum number of digits used by an internal device



Note

The default maximum setting is 4 digits. If your internal extension numbers have more digits than this, enter the number here. Internal numbers can have up to 24 digits.

- **External access number**—the prefix that enables you to call external numbers
- **External international access number**—the prefix that enables you to call international external numbers
- **External area code**—the Country Code of the Cisco Unified Communications Manager location. International numbers that include this country code are dialed as domestic calls.
- **Default FAC and CMC Settings**—If **Forced Authorization Codes (FAC)** and/or **Client Matter Codes (CMC)** are configured in Cisco Unified Communications Manager, these may be needed when the system makes Attendant calls or transfers. For example, a blind transfer where the final outbound call is made from a Service Queue CTI port. If an external call is made from the operator's handset, the operator is presented with a FAC or CMC dialog box in which they manually enter the code from their application.



Note

Client Matter Code (CMC) is used to provide extra call logging facilities within the Communications Manager. The user has to enter their CMC Code before their external consult transfer can proceed. The CMC code is written into the call detail records, which can then be used to charge calls to different cost centers.



Note

Forced Authorization Code (FAC) is used to provide security in the Communications Manager for dialing "Route Patterns". In some call centers, some callers are only allowed to make external consult transfers if they first enter a FAC. If they fail to enter a FAC or enter an incorrect FAC the transfer fails.

- **Recall Timers**—these properties are used to set the duration of each type of recall:
  - **Hold recall**—the maximum time a call put on hold by an operator remains on hold before an audible alert is played
  - **Transfer recall**—the maximum time before an unanswered operator-transferred call is returned to that operator
  - **Park recall**—the maximum time before an unanswered parked call is returned to the operator. The call can still be picked up by the intended recipient once the Parked timeout has happened.
  - **Camp On recall**—the maximum time an unanswered call remains camped-on before it is returned to the operator.
- **Default Queue Device Group**—select the system default queue device group: the group of devices to use to route the call if the system is otherwise unable to attach a device group to it.
- **Call Arrival Mode**—Select to enable **Hold queued calls** mode, which is used to trigger Music on Hold (MoH) within the Cisco Unified Communications Manager.
- **Working Days**—Set the days and hours that the Cisco Unified Attendant Console queues are active. Specify the following:
  - The days the queues are active
  - The **Working hours from time** and **Working hours to time**: the periods the queues are active on the specified days

**Tip**

Working Days is a global setting, and may not be suitable in a situation where Queues are specific to offices that are in different time zones. In this case, use **No Operator Overflow** in **User Configuration > Queue Management**. This enables you to push calls to a specific destination if no operators are logged into the queue (this does not apply to a queue where an operator is unavailable or busy).

For more information on time of day routing, see the *Cisco Unified Attendant Console Design Guide*.

**Step 3** Click **Save** to save the changes.

## Queue Management

Depending on the number of incoming calls and staffing levels, operator queues may receive more calls than they can handle. For this reason, you must define what to do with these calls when the following *overflow* conditions exist for your queues:

- Maximum number of calls waiting to be answered exceeded
- Maximum call wait time exceeded
- No operator

If you want, overflowed calls can be simply discarded, but it is better to route them to an *overflow destination*. In a similar way, when a queue is in emergency mode you can route calls made to it to another destination. In both cases, this destination is an overflow number (DDI). The overflow number cannot be the same as that of the overflow queue.

The *Queue Management* option enables you to create and configure operator queues, including the overflow number.

## Creating Queues

To create a queue:

**Step 1** Choose **User Configuration > Queue Management**.

The **Queue Management** page is displayed.

**Step 2** Click **Add New**.

**Step 3** Enter the **General** properties:

- **Name**—the name of the queue.
- **Priority**—the priority of the queue when calls are being routed. This is used to manage the order in which calls in different queues are handled. A queue with a high priority has its calls processed before those in queues with a lower priority. This is the same for all servers.
- **Salutation**—a greeting displayed in a pop-up for the operator to use. This is the same for all servers.
- **Queue device group**—select the queue device group to use.

**Step 4** Specify the **Call Delivery Method**:

- **Broadcast**—select this so that all logged-in operators can see the call in their Queued Incoming Calls (F8) pane, and any can pick up the call. This is the default queue type.



- **Forced Delivery**—select this to make the queue a *forced delivery* queue. This causes an enquiry call to be made from the CTI Port to the next attendant handset in a circular, round-robin pattern. Attendants receive calls in the order in which they log in, and after the last attendant receives a call, the first receives the next one. Attendants are skipped if they are still busy on a previous call.
- **Forced delivery answer time (secs)**—the length of time that a forced delivery call rings at an attendant's extension before it gets routed to the next available attendant.

**Step 5** Click **Save**.

You can now set the queue DDI and configure the Emergency, Overflow and Night Service properties, as described in [Configuring Queues](#), below.

---

## Configuring Queues

To configure a queue (if you are viewing the **Queue Management** page you can start at [Step 5](#)):

---

**Step 1** Choose **User Configuration > Queue Management**.

**Step 2** Find the queue to configure. Specify a filter:

- Select the queue identifier to search: **Queue Name**, **Queue Type** or the **Queue DDI number**.
- A condition of the queue identifier, such as **is not empty**, or how to compare the identifier with a string, such as **begins with**.
- A string to compare to the queue identifier in the specified way (used only with **begins with**, **ends with**, **contains** and **is exactly**).

You can also add another filter using the plus (+) and minus (-) controls to narrow the search.

**Step 3** Click **Find**.

**Step 4** In the list of queues, click **Select** to configure that one.

The **Queue Management** page is displayed. You can use this to change most of the parameters you set when creating the queue, and also the Emergency, Overflow and Night Service properties.

**Step 5** Each queue requires a DDI—the number dialed internally to reach the queue session (external calls must be routed to this to reach the queue). To set or change the queue DDI, under **Association Information**, click the server you want to change.

The **General** page is displayed. This page is a copy of the **General** section of the main **Queue Management** page, but with a queue **DDI** field that you can edit.

**Step 6** Enter a queue **DDI**, click **Save**, and then, in the **Related Link** field, select **Back to Queue**, and then click **Go**.

**Step 7** If required, in the **Queue Management** page, modify the **General** properties, which are described in [Creating Queues](#), page 6-26.

**Step 8** In the **Queue Management** page, set the following properties:

- **Emergency**—the number calls must be forwarded to when the queue is in emergency mode.
- **Overflow**—This controls the routing (overflow) of calls from a queue when certain parameters are exceeded. It contains these properties:
  - **Overflow number**—The number to route overflowed calls to.
  - **Maximum calls**—The maximum number of calls that can wait in the queue. Additional calls are routed to the **Overflow number**.

- **Wait time overflow** —The maximum time a call can wait in the queue before being routed to the **Overflow number**. This has the format **hours:Minutes:Seconds**, with a maximum of 23:59:59. You can disable Wait time overflow by setting this to 00:00:00.
- **No operator overflow**—Select this to route calls to the overflow number if no operator is logged in to this queue. Incoming calls are immediately routed to the **Overflow number** if this checkbox is checked.
- **Night Service** —This enables you to specify a **Night service number**. Calls made outside the Working Days general property are routed to this number. Night service enables you to take a queue out of operation for periods, during which calls are routed elsewhere.

**Step 9** Click **Save** to save the settings.

**Step 10** Click **Synchronize with CUCM** to access the **Synchronize with CUCM** page. For more information, see [Synchronize with CUCM, page 6-19](#).

---

## Operator Management

The Operator Management option enables you to create and configure operator profiles, including associating queues with profiles.

### Creating Operator Profiles

To create an operator profile:

- 
- Step 1** Choose **User Configuration > Operator Management**.
  - Step 2** Click **Add New**.
  - Step 3** Enter a **Login name**.
  - Step 4** Enter a **Password**, and then re-enter it to confirm it.
  - Step 5** Click **Save**.

You must now configure the operator. If you have just created an operator you can continue from [Step 5](#) in the operator configuration procedure.

---

### Configuring Operator Profiles

To configure an operator profile:

- 
- Step 1** Choose **User Configuration > Operator Management**.
  - Step 2** **Find** an operator profile to manage. Specify a filter: a string to search for and where to search for it.
    - Select **Login Name**.
    - A condition of the login name, such as **is not empty**, or how to compare the login name with a string, such as **begins with**.
    - A string to compare to the login name in the specified way (used only with **begins with**, **ends with**, **contains** and **is exactly**).

You can add another filter using plus (+) and minus (-) controls to narrow the search.

**Step 3** Click **Find**.

**Step 4** Select the operator profile you want to configure.

The profile information is displayed.

If any queues are associated with the operator, they are listed in **Associated Queues**.

**Step 5** If required, edit the **Login name**, **Password**, and then **Confirm password**.

**Step 6** To associate the profile with a queue, click **Queue Association**.

You can use **Find** to search for a specific queue if it is not displayed.

**Step 7** Select the queue(s) to associate with the profile and de-select any already-associated queues you do not want associated.

**Step 8** Click **Save Selected/Changes** to return to the profile information.

**Step 9** Click **Save** to save changes.

You can click **Reset password** to reset the user password to match the login name.

---

---





## Uninstalling Cisco Unified Attendant Console Server

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This section describes how to uninstall the Cisco Unified Attendant Console server and its associated applications.

**Note**

The following:

- When installing, upgrading or uninstalling resilient server software, both the Publisher and Subscriber server machines must be running. If either machine is turned off or inaccessible, the install, upgrade or uninstall may fail.
  - If the Publisher server software gets uninstalled, the Subscriber server's software link with the Publisher server gets broken. When you reinstall the Publisher server software you must then reinstall the Subscriber server software to restore the link.
- 

When you uninstall a resilient system, it doesn't matter whether you start with the Publisher or the Subscriber.

To uninstall Cisco Unified Attendant Console server (the exact steps depend on the operating system of the host system):

- 
- Step 1** Choose **Start > Control Panel**, and then double-click **Add/Remove Programs**.
- Step 2** From the list, select **Cisco Unified Attendant Server**, and then click **Remove**.  
The Wizard prepares to (un)install the server application.
- Step 3** When you are prompted to confirm that you want to remove Cisco Unified Attendant Console server from your machine, click **Yes**.  
The server application is uninstalled.
- Step 4** When you are asked whether to restart the computer, select **Yes, I want to restart my computer now**, and then click **Finish**.
- 

You must now remove all the third-party components installed with the Cisco Unified Attendant Console server:

- SQL Server 2008. For more information, see [Uninstalling Microsoft SQL Server, page A-2](#),
- .Net Framework. For more information, see [Uninstalling the .NET Framework, page A-2](#),

- Cisco TSP. For more information, see [Uninstalling Cisco TSP, page A-2](#),

## Uninstalling Microsoft SQL Server

To uninstall the Microsoft SQL Server from your Cisco Unified Attendant Console server:

- 
- Step 1** Choose **Start > Control Panel**, and then double-click **Add/Remove Programs**.
  - Step 2** From the list, select **Microsoft SQL Server**, and then click **Remove**.  
The server instances are listed.
  - Step 3** Select the instance to remove, and then click **Next**.  
You are asked to confirm that you want to uninstall the selected instance
  - Step 4** Click **Finish** to remove the components. Click **Back** to go back and change any of the information.  
While the components are being uninstalled the Setup Progress is displayed.
  - Step 5** When all the components have been removed, click **Finish**.
  - Step 6** When you have uninstalled Microsoft SQL Server, delete the C:\DBdata\ folder and the databases it contains.
- 

## Uninstalling the .NET Framework

To uninstall the .NET Framework:

- 
- Step 1** Choose **Start > Control Panel**, and then double-click **Add/Remove Programs**.
  - Step 2** From the list, select **Microsoft .NET Framework 3.5**, and then click **Remove**.  
You are prompted to either Repair or Uninstall the .NET Framework.
  - Step 3** Select **Uninstall**, and then click **Next**.
  - Step 4** You are asked to confirm that you want to remove the .NET Framework.
  - Step 5** Click **OK**.  
While the components are being uninstalled the Setup Progress is displayed.
  - Step 6** When all the components have been removed, click **Finish**.
- 

## Uninstalling Cisco TSP

If you need to uninstall the Cisco TSP follow the instructions in ciscotsp.txt, which was created when the TSP was installed. The file's default location is C:\Program Files\Cisco.



## APPENDIX B

# Cisco Unified Reporting

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Cisco Unified Reporting enables you to create reports about the information coming through Cisco Unified Attendant.

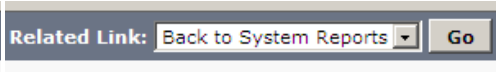
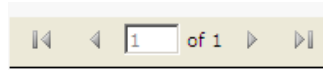
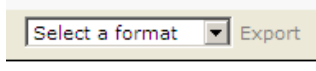


This section describes how to configure Cisco Unified Reporting using Cisco Unified Attendant Admin. Only administrators can access Cisco Unified Attendant Admin.

To access Cisco Unified Reporting:

- 
- Step 1** Log in to Cisco Unified Attendant Admin, as described in [Administrator Login, page 6-1](#).  
The Cisco Unified Attendant Admin home page is described. For more information, see [Home Page, page 6-2](#).
- Step 2** In **Navigation** at the top right of the home page, select **Cisco Unified Reporting**, and then click **Go**.  
The Cisco Unified Reporting home page is displayed. This contains the *System Reports* menu from which you can run the following reports:
- Incoming Calls by Date and Time. For more information, see [Incoming Calls by Date and Time System Report, page B-3](#).
  - Operator Calls by Time. For more information, see [Operator Calls by Time System Report, page B-4](#).
  - Operator Calls by Queue. For more information, see [Operator Calls by Queue System Report, page B-5](#).
  - Overflowed Calls by Date. For more information, see [Overflowed Calls By Date System Report, page B-5](#).
-

# Toolbar

At the top of each system report is a toolbar containing the following for controlling the report:

Control	Function
	Click <b>Go</b> to return to the System Reports home page.
	Navigate to a specific page in the report: Start Page, Back One Page, Forward One Page, Last Page. Alternatively, enter a number to go to that page.
	Export a copy of the report. First select the format from Excel (.XLS) or Acrobat (.PDF).
	Refresh the Report screen.
	Print the report to the printer configured on the Server. Use the printer page setup functions specific to your internet browser to configure the format of your printed report.

## Setting Report Parameters

To run a System Report you must specify the type of report and the report parameters. These vary according to the report you choose, but all reports require a:

- Date Range
- Time Range

Several reports also require a Queue Type and/or the Attendant Operators to analyze.

When you have set the report parameters, click **Generate Report**.

### Date Range

All the reports require you to select a **From** date, and some also require a **To** date so that the report covers the range of specified dates. You can restrict a date range to a single day by specifying the same **From** and **To** dates. You can also select the date by clicking the calendar control.

### Time Range

All the reports require you to select a **From** time and a **To** time. These times have the format *hh:mm:ss*, where *hh* uses a 24 hour clock. Both times are compared to the start time of the calls on that day. For example, with a **From** time of 09:00:00, calls starting at 08:59:59 or earlier are omitted from the report. With a **To** time of 17:00:00, calls starting at 17:00:01 or later are omitted from the report.



## Queue Type

In several reports you must also specify which queue's data to analyze, and whether this data is from the Arrival Queue or the Delivery Queue.

The Arrival Queue is where calls arrive after filtering. The Delivery Queue is the queue from which calls are delivered to the Cisco Unified Attendant Console. Depending on the configuration, calls may overflow from one queue to another before reaching the console attendant.

You can select multiple queues by holding **Ctrl** while selecting queue names.

## Attendant Operators

In several reports you must also specify which attendant operator's data to analyze. You can select multiple Operators by holding **Ctrl** while selecting Operator names.

## Incoming Calls by Date and Time System Report

The Incoming Calls by Date and Time report is a summary of the incoming calls in the queues during a specific period. A single line of information is provided for a particular date and time.

Specify the following parameters before running this report:

- From and To Date
- Start and End Time
- Queue(s)
- Abandoned Call Timer
- Arrival or Delivery Queue

The report contains the following information:

Field	Description
Total Calls	Number of calls reaching the Cisco Unified Attendant Console.
Answered Calls	Number of calls answered.
Abandoned Calls	Number of calls abandoned.
Overflowed Calls	Number of calls overflowed to a device or external number.
% Answered	Percentage of calls answered.
% Abandoned	Percentage of calls abandoned.
% Overflowed	Percentage of calls overflowed.
Average Answered Wait	Average time calls wait before being answered.
Average Answered Talk Time	Average talk time for answered calls.
Average Abandoned Wait	Average time a caller waits before the call is abandoned.

Field	Description
Answer Time Profile	The percentage of calls answered within the specified number of seconds.
	..10: % Calls answered in less than 10 seconds.
	..20: % Calls answered between 10 to 19 seconds.
	..30: % Calls answered between 20 to 29 seconds.
	..40: % Calls answered between 30 to 39 seconds.
	..40+: % Calls answered after 40 or more seconds.
Longest Wait	The longest time a caller had to wait to be answered.

## Operator Calls by Time System Report

The Operator Calls by Time report is a summary of incoming and outbound calls involving specific attendant operators by time, on a single date. A line of information is displayed per hour per operator. Totals are displayed for each operator.

Specify the following parameters before running this report:

- Start and End Time
- Start Date
- Operator(s)

The report contains the following information:

Field	Description
Operator	Operator name.
Total Calls	Total number of inbound calls to the attendant operator.
Console	Total number of calls to the queue attended by the attendant operator, including: <ul style="list-style-type: none"> <li>• Incoming queue calls</li> <li>• Retrieved calls from F5</li> <li>• Calls retrieved from park by double-clicking the Park DN on the screen</li> </ul>
Others	Total number of calls not to the Console attended by the attendant operator. Normally, these are direct calls to the DN the operator uses for answering console calls.
Inbound Total talk time	Total talk time for the inbound queue calls only.
Inbound Average talk time	Average talk time for the inbound queue calls only.
Inbound Longest talk time	Longest talk time for the inbound queue calls.

Field	Description
Total Outbound Calls	Total number of outbound calls made by the operator. Includes: <ul style="list-style-type: none"> <li>• Normal outbound calls</li> <li>• Consult transfer enquiry calls</li> <li>• Conference enquiry calls</li> <li>• Park calls retrieved by dialing the park DN</li> <li>• Abandoned calls</li> </ul>
Outbound Total talk time	Total talk time for outbound answered calls.
Outbound Average talk time	Average talk time for outbound answered calls.
Outbound Longest talk time	Longest talk time for outbound answered calls.

## Operator Calls by Queue System Report

The Operator Calls by Queue report is a summary of the queued calls handled by attendant operators during a specific date range. The summary data is grouped by date, with a line of information per operator on that date.

Specify the following parameters before running this report:

- Start and End Date
- Queue(s)
- Operator(s)

The report contains the following information:

Field	Description
Operator	Logged in attendant operator's name.
Queue	The queue assigned to that attendant operator.
No. of calls	Total number of queue calls answered within that queue.
Total Talk	The total talk time by the operator on inbound calls from that queue.
Average Talk	Average talk time on answered calls on that queue.
Longest Talk	Longest talk time for answered calls on that queue.

## Overflowed Calls By Date System Report

The Overflowed Calls By Date report summarizes the calls that overflow from Arrival Queues – the first, direct destinations for calls. Queues that only ever receive re-routed calls are not included in the report.

Specify the following parameters before running this report:

- Start and End Date
- Start and End Time
- Queue(s)

The report contains the following information:

Field	Description
Queue	The Queue(s) for which the report is generated.
Total Queue Calls	The total number of incoming calls at the Queue.
Total Overflow In	The total number of calls overflowed from the Queue.
Overflow In	The number of calls overflowed into the Queue from other Queues during business hours.
Night Service In	The number of calls overflowed into the Queue during break hours.
Overflow out Time Limit	The number of calls that overflowed because the maximum call waiting time was exceeded.
Overflow out No Operators	The number of calls that overflowed because an attendant operators was not logged into the queue.
Emergency	The number of calls that overflowed because the queue was in emergency mode.
Overflow out Destination Time Limit	The destination for calls overflowed for exceeding the maximum wait time.
Overflow out Destination No Operators	The destination for calls overflowed when no operator was logged into the queue.
Emergency	The destination for calls overflowed when the queue was in emergency mode.
% In	The percentage of incoming calls that had overflowed from another queue.
% Out	The percentage of incoming calls that overflowed from the queue.



## Creating an Attendant Application User for Cisco Unified Communications Manager 7.x

---

This appendix describes how to create and configure an *Application User* within Cisco Unified Communications Manager 7.x so that Cisco Unified Attendant Console can communicate with it via TSP. The application user profile provides the roles and privileges you need to be able to modify and synchronize information.

To create and configure an Application User, follow these steps:

1. [Creating an Application User.](#)
2. [Creating a User Group and Assigning Roles to it, page C-2.](#)
3. [Adding the Application User to the User Group, page C-2.](#)
4. [Adding the Application User to the Standard CCM Super Users Group, page C-3.](#)

### Creating an Application User

To create an Application User, do the following:

- 
- Step 1** On the server machine, use your internet browser to access Cisco Unified Communications Manager Administration, and then choose **User Management > Application User**.
  - Step 2** Click **Add New**.
  - Step 3** Type the following:
    - **User ID** (a name of your choice)
    - **Password**
    - **Confirm Password** (this must match the Password)
  - Step 4** Select a **Presence Group**.
  - Step 5** Click **Save** to save the Application User.
- 

**Note**

If you are using Active Directory to synchronize with the Cisco Unified Communications Manager, the Application User profile must also exist in Active Directory.

---

## Creating a User Group and Assigning Roles to it

You must now associate your new Application User with a User Group, which contains the roles that govern what the user can do.

To create a User Group, do the following:

- 
- Step 1** On the server machine, use your internet browser to access Cisco Unified Communications Manager Administration, and then choose **User Management > User Groups**.
  - Step 2** Click **Add New** to create a new User Group.
  - Step 3** Type a **Name** for the new User Group.
  - Step 4** Click **Save** to save the User Group.
  - Step 5** On the **Find and List User Groups** page, **Find** the User Group you just created.
  - Step 6** In the **Search Results**, click **Roles** for the User Group.
  - Step 7** Click **Assign Role to Group**.  
The roles that can be assigned are listed.
  - Step 8** Select the following roles:
    - **Standard CTI Allow Call Park Monitoring**
    - **Standard CTI Allow Calling Number Modification**
    - **Standard CTI Allow Control of All Devices**
    - **Standard CTI Allow Reception of SRTP Key Material**
    - **Standard CTI Enabled**
    - **Standard AXL API Access**
  - Step 9** If your environment uses phone models 69xx, 7931, 7965, 89xx or 99xx, you must also select:
    - **Standard CTI Allow Control of Phones supporting Rollover Mode**
    - **Standard CTI Allow Control of Phones supporting Connected Xfer and conf**
  - Step 10** Click **Add Selected** to assign the roles.
  - Step 11** Click **Save**.
- 

## Adding the Application User to the User Group

To add the Application User to the User Group, do the following:

- 
- Step 1** On the server machine, use your internet browser to access Cisco Unified Communications Manager Administration, and then choose **User Management > User Groups**.
  - Step 2** On the **Find and List User Groups** page, **Find** the User Group you just created, and then select it in the results.
  - Step 3** Click **Add App Users to Group**.  
The Application Users are listed.

- Step 4** Select the check box to the left of your newly-created Application User, and then click **Add Selected**.
- 

## Adding the Application User to the Standard CCM Super Users Group

The *Standard CCM Super Users* group is a User Group with full access permission to all named roles. After you have added the Application User to your newly created User Group, you must also add it to the Standard CCM Super Users group.

To add your Application User to Standard CCM Super User, do the following:

- 
- Step 1** On the server machine, use your internet browser to access Cisco Unified Communications Manager Administration, and then choose **User Management > User Groups**.
- Step 2** On the **Find and List User Groups** page, search for **Standard CCM Super Users**.
- Step 3** On the **Find and List User Groups** page, **Find Standard CCM Super Users**, and then select it in the results.
- Step 4** Click **Add App Users to Group**.  
The Application Users are listed.
- Step 5** Select the check box to the left of your newly-created Application User, and then click **Add Selected**.
-

■ Adding the Application User to the Standard CCM Super Users Group





## APPENDIX D

# Installing and Configuring the Cisco TSP for Cisco Unified Communications Manager 7.x

The Cisco TAPI (or Telephony) Service Provider (TSP) enables the Cisco Unified Attendant Console Server to communicate with the Cisco Unified Communications Manager CTI Manager service, which provides call control.

Cisco Unified Attendant Console installation also automatically installs the Cisco TSP appropriate to your Cisco Unified Communications Manager— unless you are using Cisco Unified Communications Manager Release 7.x, in which case you must manually install the Cisco TSP for that release.

This appendix describes the following steps:

1. [Downloading and Installing the TSP.](#)
2. [Configuring the TSP, page D-2.](#)
3. [Installing the Cisco TAPI Wave Driver, page D-3.](#)

If you need to uninstall the Cisco TSP, follow the instructions in the file *C:\Program Files\Cisco\CiscoTSP.txt*, which is created when the TSP is installed. This file also includes instructions for installing the Cisco TAPI Wave driver.

## Downloading and Installing the TSP

To download and install the Cisco TSP, do the following:

- Step 1 On the server machine, use your internet browser to access Cisco Unified Communications Manager Administration, and then choose **Application > Plug ins.**
- Step 2 Find the Cisco Telephony Service Provider using the search field ([Figure D-1](#)).

*Figure D-1 Find and List Plugins Search Options*

**Find and List Plugins**

**Search Options**

Find Plugin where Plugin  begins with

and Plugin Type equals

- Step 3 In the **Search Results**, click **Download** on the Cisco Telephony Service Provider line.

- Step 4 Save **CiscoTSP.exe** on your desktop.
  - Step 5 Double-click the **CiscoTSP.exe** icon on your desktop and follow the instructions.
  - Step 6 During installation, you are asked if you want to install multiple instances of TSP; click **No**.
  - Step 7 After a successful installation, restart your system for the changes to take effect.
- 

## Configuring the TSP

To configure TSP, do the following:

- 
- Step 1 Click the **Start** button, and then in the **Start** menu, choose **Settings > Control Panel > Phone and Modem Options**.
  - Step 2 Select the **Advanced** tab.
  - Step 3 Select *CiscoTSP001.tsp*.
  - Step 4 Click **Configure**, and then select the **User** tab.
  - Step 5 In **User Name**, type the User ID of the Cisco Unified Communications Manager Application User created in [Appendix C, “Creating an Attendant Application User for Cisco Unified Communications Manager 7.x”](#).
  - Step 6 Type the **Password**, and then again in **Verify Password**.
  - Step 7 Select the **CTI Manager** tab.
  - Step 8 Under **Primary CTI Manager Location**, select and then type either the **IP Address** or **Host Name** of the CTI Manager to connect to. If a second CTI Manager is available, you can optionally specify a **Backup CTI Manager Location**.



### Note

The CTI Manager service runs on each CUCM node in a cluster. Your primary CTI Manager should be on the Cisco Unified Communications Manager publisher, and your Backup CTI Manager on the subscriber.

---

- Step 9 Select the **Wave** tab.
- Step 10 Type the **Desired number of possible Automated Voice lines**. Specify sufficient to allow *all* your CTI Ports to be monitored by this TSP. You may want to specify a larger number to cater for future expansion. If you wish to change the number at a future date, you will have to uninstall and reinstall the Cisco TAPI Wave driver.
- Step 11 Click **OK**.
- Step 12 Select the **Advanced** tab.
- Step 13 In **Provider Open Completed Timeout (secs)**, type 300.
- Step 14 Click **OK**.
- Step 15 Reboot the machine.  
You now need to install the Cisco TAPI Wave driver.

# Installing the Cisco TAPI Wave Driver



**Note** These instructions are for a Windows 2008 Server. If you have a different operating system, perform the equivalent steps.

To install the Cisco TAPI Wave driver, do the following:

- 
- Step 1** In Control Panel, double-click **Add Hardware**.
  - Step 2** In the **Add Hardware** wizard, click **Next**.
  - Step 3** Select **Install the hardware that I manually select from a list**, and then click **Next**.
  - Step 4** From the list of Common hardware types, select **Sound, video and game controllers**, and then click **Next**.
  - Step 5** When prompted to select the device driver, click **Have Disk**.
  - Step 6** In the **Install From Disk** dialog box, **Browse** to *C:\Program Files\Cisco Systems\Wave Drivers*, select the file *oemsetup.inf*, and then click **Open**.
  - Step 7** Click **OK**.
  - Step 8** In the **Select the device driver you want to install** page, select the **Cisco TAPI Wave Driver**, and then click **Next**.
  - Step 9** In the **Wizard is ready to install your hardware** page, click **Next**.
  - Step 10** If prompted for **Digital signature Not Found**, click **Continue Anyway**.
  - Step 11** When prompted to **Install from disk 1** for file *avaudio32.dll*, **Browse** to *C:\Program Files\Cisco\Wave Drivers*, and then click **Open**.
  - Step 12** When prompted, reboot the server.
-





## Upgrading Cisco Unified Attendant Console

---

This section describes how to upgrade your Cisco Unified Attendant Console server and client.

Use the following table to determine whether your current Cisco Unified Attendant Console version can be upgraded to version 9.1.1,

Your Cisco Unified Attendant Console version	Can be directly upgraded to version 9.1.1
1.1.1.(x)	No
2.0.1.(x)	No
3.1.1.(x)	No. Must first upgrade to version 8.0.0.(x)
8.0.0.(x)	Yes
8.0.3.(x)	Yes
8.6.1.(x)	Yes
8.6.2.(x)	Yes
9.0.1(x)	Yes

**Note**

The following:

- Cisco Unified Attendant Console runs under Windows Server 2008 only. For how to upgrade to Windows Server 2008 visit [http://technet.microsoft.com/en-us/library/cc755199\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc755199(v=ws.10).aspx).
- Cisco Unified Attendant Console runs under Microsoft SQL Server 2008 only.
  - For how to upgrade to SQL Server 2008, visit [http://msdn.microsoft.com/en-us/library/bb677622\(v=sql.100\).aspx](http://msdn.microsoft.com/en-us/library/bb677622(v=sql.100).aspx).
  - For the Microsoft SQL Server 2008 Upgrade Advisor visit <http://www.microsoft.com/en-us/download/details.aspx?id=11455>.
  - For considerations when upgrading the database engine to 2008 visit [http://msdn.microsoft.com/en-us/library/bb933942\(v=SQL.100\).aspx](http://msdn.microsoft.com/en-us/library/bb933942(v=SQL.100).aspx).
- You cannot change the edition of your Cisco Unified Attendant Console during an upgrade. To change the edition—for example from Business Edition to Enterprise Edition—you must perform a complete, clean re-installation and obtain a license for the new edition.
- If you upgrade the Cisco Unified Attendant Console server you also need to upgrade the Cisco Unified Attendant Console. If you do not, differences between the databases may cause inconsistent system performance.

To upgrade Cisco Unified Attendant Console:

1. Ensure that your Cisco Unified Communications Manager version is compatible with the version of Cisco Unified Attendant Console you are upgrading to. For more information, see [Cisco Unified Attendant Console Integration with Cisco Unified Communications Manager, page 1-4](#).
2. Ensure that you have the correct version of operating system and SQL database engine required by the Cisco Unified Attendant Console version. For more information, see:
  - [Physical Server Software Requirements, page 3-1](#)
  - [VMware Software Requirements, page 3-4](#)
3. Ensure that you are using an Application User account for integration with Cisco Unified Communications Manager.

Cisco Unified Attendant Console version 8.0.0.5 and earlier used an End User account to communicate with Cisco Unified Communications Manager. Cisco Unified Attendant Console 8.0.3 and later uses an Application User instead of an End User. For details of how to create an Application User, see [Creating and Assigning an Application User, page 4-2](#).



**Note**

If you are upgrading from Cisco Unified Attendant Console version 8.0.0.5 or earlier, you must first delete the End User account from Cisco Unified Communications Manager.

4. Download the Cisco Unified Attendant Console software. For more information, see [Downloading the Software, page 5-3](#).
5. Sometimes you will need to re-license your Cisco Unified Attendant Console server. Each release of Cisco Unified Attendant Console has a three-part build number; for example: 8.0.3, where 8 is the major release number, 0 is the minor release number, and 3 is the maintenance release number.

During major release upgrades—for example, upgrading from version 8.0.3 to version 9.0.1—the permanent licensing gets removed and your server reverts to a 5-day evaluation period. If you have a valid UCSS contract, you can request a new license activation code by visiting <http://www.cisco.com/upgrade> and using the tool there. You will need your service contract number to use this tool and order the upgrade.

If you do not have a valid UCSS contract, you can purchase an *à la carte* upgrade. The following table shows the product number you will need to order. You need to order as many upgrades as you have licenses on your Cisco Unified Attendant Console server.

Product	À La Carte Upgrade Product Number	Delivery Method
Cisco Unified Attendant Console Department Edition	L-CUACD9X-U-AC=	Electronic
	CUACD9X-U-AC=	Paper
Cisco Unified Attendant Console Business Edition	L-CUACB9X-U-AC=	Electronic
	CUACB9X-U-AC=	Paper
Cisco Unified Attendant Console Enterprise Edition	L-CUACE9X-U-AC=	Electronic
	CUACE9X-U-AC=	Paper



**Tip**

Cisco strongly recommends that you have your new license activation code before performing your upgrade.

If you are upgrading to a new minor or maintenance release, for example from version 8.0.3 to 8.6.2, a new license file is required only if you are:

- Renaming your server
- Using new hardware
- Using a new virtual machine
- Upgrading from version 8.0.3 to a later release when already running in a virtual machine

To re-license your Cisco Unified Attendant Console server, contact Cisco TAC and request a license re-host. You will need to supply either:

- Original sales order number for the software
  - Original license activation code
6. Once your license activation code has been reset or you have received a new license activation code, install the Cisco Unified Attendant Console server on top of the existing installation.

[Upgrading Cisco Unified Attendant Console Server](#) is described below.

7. License your Cisco Unified Attendant Console server, as described in [Licensing Cisco Unified Attendant Console Software, page 6-4](#).
8. Install the Cisco Unified Attendant Console client over the existing installation. For more information, see [Installing Cisco Unified Attendant Console Client, page 5-7](#).

## Upgrading Cisco Unified Attendant Console Server

To upgrade a Cisco Unified Attendant Console server:

---

**Step 1** Log in to the machine hosting the server, using a login with local administrator rights.

**Step 2** Browse to the folder where the downloaded installation files are saved.

**Step 3** Double-click the setup program.

The Wizard is prepared and you are presented with the Welcome screen.

**Step 4** In the Wizard welcome screen, click **Next**.

**Step 5** In the **License Confirmation** screen, click **Next**.




---

**Note** You will need to upload and install a new license after installing the software to prevent it from running in 5-day evaluation mode.

---

**Step 6** In the **Registration Information** screen accept or change the license holder **Name** and **Company Name**, and then click **Next**.




---

**Note** The SQL Server login password must be sufficiently complex to meet the Windows policy requirements described at <http://support.microsoft.com/kb/965823>.

---

**Step 7** In the **Server Information** screen accept the Cisco Unified Attendant Console **Server Machine Name / IP Address**, and then click **Next**.

**Step 8** In the SQL Server Login Information screen, type the **SQL Server Username** (default is **sa**) and **Password** (default is **Z1ppyf0rever**), then click **Next**.

- Step 9** In the Cisco Unified Communications Manager (CUCM) connection details screen, type or accept the Cisco Unified Communications Manager machine **IP Address**, your **CUCM Application User ID** and **Password**, and then click **Next**.
- Step 10** In both security alert messages, click **Yes**.
- Step 11** In the **Cisco TSP Information** screen, accept the settings, **and then** click **Next**.
- Step 12** In the **Choose Destination Location** screen, either accept the default destination folder or **Browse** to where you want to install the files, and then click **Next**.
- Step 13** In the **Start Copying Files** screen, to start copying files, click **Next**.  
The Cisco Unified Attendant Console server is installed. The database wizard then runs.
- Step 14** In the **Database Wizard**, click **Next**.
- Step 15** You are prompted to overwrite the configuration database and then the logging database:
- Click **Yes** to create a new, empty database. This will delete all of your server settings, including queues and CTI port numbers.
  - Click **No** to upgrade the existing database, retaining all of your server settings.
- Step 16** When the wizard has installed the Configuration and Logging databases, click **Finish**.  
Cisco Unified Communications Manager TSP is configured.
- Step 17** If any third-party applications that might interfere with the TSP configuration are running, you are prompted to close and then automatically restart them. Accept this option and click **OK**.  
If you receive a message saying that setup was unable to close the applications, click **OK**.
- Step 18** In the Wizard Complete screen, select **Yes, I want to restart my computer now**, and then click **Finish**.  
Your computer restarts, with the Cisco Unified Communications Manager server installed.
- 

You need to license your system before the 5-day evaluation period expires. For more information, see [Licensing Purchased Software, page 6-5](#).





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