Cisco Unified Business/Department Attendant Console Web Admin and Installation Guide

Version 8.0.0.5
March 2010

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-20132-01
CONTENTS

Preface vii

Introduction 1-1
Points to Remember 1-2
Accessibility for Users with Disabilities 1-2

Important Information 2-1
Compatibility Between Cisco Unified Business/Department Attendant Console and Cisco Unified Communications Manager 2-1
Music on Hold 2-1
TAPI Resilience 2-2
Call Park 2-2
Cisco Unified Presence Server 2-2
Other Items to Remember 2-2

Product Overview 3-1
Cisco Unified Business/Department Attendant Console 3-1
Queue DDI 3-2
CT Gateway Devices 3-2
Service Queues 3-2
Park Devices 3-2
Call Flow 3-3
Numbering Plan for Test Install 3-4
Performance Information 3-4
Hardware / Software Requirements 3-6
Backups 3-8
Server Redundancy 3-8
Security Considerations 3-8
Network Requirements 3-8
SQL Considerations and Scalability 3-9
Product Feature Table 3-9
Core Languages 3-13

Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin 4-1
Installation Overview 4-1
## Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installing Cisco Unified Business/Department Attendant Server</td>
<td>4-4</td>
</tr>
<tr>
<td>Disabling the User Account Control in Windows 2003/2008</td>
<td>4-13</td>
</tr>
<tr>
<td>Installing Cisco Unified Business/Department Attendant Console Client</td>
<td>4-14</td>
</tr>
<tr>
<td>Installing Cisco Unified Business/Department Attendant Console Client on Windows 2003/2008/Vista (32 bit)</td>
<td>4-19</td>
</tr>
<tr>
<td>Disabling the User Account Control in Windows Vista/2003/2008</td>
<td>4-22</td>
</tr>
</tbody>
</table>

### Cisco Unified Business/Department Attendant Admin 5-1

- **Administrator Login** 5-2
- **Home Page** 5-3
- **Engineering** 5-4
  - **Administrator Management** 5-4
  - **Database Management** 5-6
  - **Database Purge** 5-8
  - **Service Management** 5-9
  - **CUCM Connectivity** 5-12
  - **CUPS Connectivity** 5-13
- **Logging Management** 5-15
  - **Cisco Unified Attendant Server Logging** 5-18
  - **Cisco Unified Attendant LDAP Plug-in Logging** 5-18
  - **Cisco Unified Attendant CUPS Plug-in Logging** 5-19
  - **Cisco Unified Attendant BLF Plug-in Logging** 5-19
- **System Configuration** 5-20
  - **System Device Management** 5-20
  - **Synchronizing with CUCM** 5-23
  - **Directory Filtering** 5-28
  - **Directory Synchronization** 5-29
  - **Directory Rules (for Cisco Unified Business Attendant Console only)** 5-31
- **User Configuration** 5-32
  - **General Properties** 5-33
  - **Queue Management** 5-35
  - **Operator Management** 5-40

### Uninstall Attendant Admin 6-1

- **Uninstalling Cisco Unified Business/Department Attendant Server** 6-1
- **Uninstalling MS SQL Server** 6-3
- **Uninstalling BDE Utility** 6-6
- **Uninstalling .NET Framework** 6-8
- **Uninstalling the Cisco TSP** 6-10
Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x A-1
  Setting Up an End User A-1
  Creating a User Group A-3
  Assigning Roles and User to the User Group A-4
  Adding the End User to CCM Super Users group A-5
  Configuring Access for the Cisco Unified Attendant CUPS Plug-In A-6

TAPI Configuration for CUCM 7.0 B-1
  Installing the TAPI TSP B-1
  Configuring the TAPI TSP B-2
  Installing the Cisco TAPI Wave Driver B-4
  Uninstalling the Cisco TSP B-5

Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x C-1
  Setting Up an End User C-1
  Creating a User Group C-3
  Assigning Roles and User to the User Group C-4
  Adding the End User to CCM Super Users group C-5
  Configuring Access for the Cisco Unified Attendant CUPS Plug-In C-6

TAPI Configuration for CUCM 8.0 D-1
  Manually Installing the TAPI TSP D-1
  Manually Configuring the TAPI TSP D-4
  Manually Configuring TAPI Media Driver D-6
  Uninstalling the Cisco TSP D-7

Downloading, Updating and Registering Software E-1
  Updating From an Earlier Version of Cisco Unified Business/Department Attendant Applications E-1
  Accessing the Solutions + Website E-1
  Creating an Account E-2
  Logging into the Site E-4
  My Details E-5
  Downloads E-5
  To Activate the 60 Day Evaluation Software E-6
  Activate Purchased Software E-9

Glossary 13-1
Preface

The following manual relates to the installation and utilisation of the Cisco Unified Business/Department Attendant Console software product.

Cisco Unified Business/Department Attendant Admin provides administrator access to the configuration for Cisco Unified Business/Department Attendant Console.

Cisco Unified Business/Department Attendant Admin is an efficient application specially designed for configuring databases, connections to Cisco Unified Communications Manager, system and user settings.

The user-friendly design of the application gives speed and flexibility to the users.

Purpose

The purpose of this admin guide is to provide information on Cisco Unified Business/Department Attendant Console configuration.

Who Should Read this Guide

The document is intended for:-

- Those involved in the training of Cisco Unified Business/Department Attendant Admin
- System Engineers and installers involved in the planning and provisioning of the installation and operation of Cisco Unified Business/Department Attendant Admin

How this Guide is Organized

This guide includes the following sections:
Table 1  Describes the Chapters of this Guide

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>This chapter provides a brief Introduction to the Cisco Unified Business/Department Attendant applications</td>
</tr>
<tr>
<td>2</td>
<td>Important Information</td>
<td>This chapter provides details for the compatibility of Cisco Unified Business/Department Attendant applications with Cisco Unified Communications Manager.</td>
</tr>
<tr>
<td>3</td>
<td>Product Overview</td>
<td>This chapter provides a numbering test plan and gives a brief description of the Cisco Unified Business/Department Attendant applications.</td>
</tr>
<tr>
<td>4</td>
<td>Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin</td>
<td>In order to start installing applications you must go through the checklist for successful installation. This chapter provides the procedure for installing Cisco Unified Business/Department Attendant Admin.</td>
</tr>
<tr>
<td>5</td>
<td>Cisco Unified Business/Department Attendant Admin</td>
<td>This chapter explains in detail all the configurations that can be done through Cisco Unified Business/Department Attendant Admin.</td>
</tr>
<tr>
<td>6</td>
<td>Uninstall Attendant Admin</td>
<td>This chapter provides an overview on how to uninstall Cisco Unified Business/Department Attendant Admin successfully.</td>
</tr>
<tr>
<td>A</td>
<td>Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x</td>
<td>This chapter provides an overview on how to configure Attendant Application End User for Cisco Unified Communications Manager 7.x</td>
</tr>
<tr>
<td>B</td>
<td>TAPI Configuration for CUCM 7.0</td>
<td>This chapter provides an overview on how to configure the TAPI.</td>
</tr>
<tr>
<td>C</td>
<td>Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x</td>
<td>This chapter provides an overview on how to configure Attendant Application End User for Cisco Unified Communications Manager 8.x</td>
</tr>
<tr>
<td>D</td>
<td>TAPI Configuration for CUCM 8.0</td>
<td>This chapter provides an overview on how to configure the TAPI.</td>
</tr>
<tr>
<td>E</td>
<td>Downloading, Updating and Registering Software</td>
<td>This chapter provides an overview on how to download, update and register software.</td>
</tr>
</tbody>
</table>

Conventions

This document uses the following conventions:

Table 2  Explains the Writing Conventions Used in the this Guide

<table>
<thead>
<tr>
<th>Convention</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>bold</strong> font</td>
<td>Commands and keywords and user-entered text appear in <strong>bold</strong> font.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Means reader take note.</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td><strong>Tip</strong></td>
<td>Means the following information will help you solve a problem.</td>
</tr>
<tr>
<td><strong>Caution</strong></td>
<td>Means reader be careful. In this situation, you might perform an action that could result in equipment damage or loss of data.</td>
</tr>
<tr>
<td><strong>Timesaver</strong></td>
<td>Means the described action saves time. You can save time by performing the action described in the paragraph.</td>
</tr>
<tr>
<td><strong>Warning</strong></td>
<td>Means reader be warned. In this situation, you might perform an action that could result in bodily injury.</td>
</tr>
</tbody>
</table>

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What’s New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:


Subscribe to the *What’s New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.
Introduction

Welcome to the Cisco Unified Business/Department Attendant Console Web Admin and Installation Guide. This document describes the installation and configuration procedures of the applications.

Cisco Unified Business/Department Attendant Admin is the Web application that allows you to configure and manage your system and user configurations.

System configuration provides the facility to manage synchronization of devices and directory contacts with Cisco Unified Communications Manager. Cisco Unified Business/Department Attendant Admin and Cisco Unified Communications Manager communicate via AXL API, using SSL to synchronize the system devices used for queuing, servicing and parking calls. These devices are created as CTI (Computer Telephone Integration) Ports and CTI Route Point devices within the Cisco Unified Communications Manager database.

User configuration allows you to manage the configuration for the Cisco Unified Business/Department Attendant Console. These settings include:

- Call queue parameters,
- Operator login credentials
- Global parameters for internal/external calls access,
- Force Authorization and Client Matter Codes (FAC and CMC)
- Recall timers.

These settings are made in order to manage the call flow.

This document assumes that the reader has knowledge of:-

- Cisco Unified Communications Manager
- Windows 2003/2008/Vista/XP
- TCP/IP
- Microsoft TAPI 2.1
- Cisco Unified Communications Manager TSP
Points to Remember

Cisco Unified Business/Department Attendant Admin is a set of rules that govern the way the system will operate. Each configuration is stored in a database on a Microsoft SQL Server and must be maintained to obtain optimal performance. You must note the following points:

- Changes made through this application are not saved until you click on the Submit button on the page.
- The valid range or types of characters for each field have been specified on the right-hand side of the fields in red.
- Invalid input in any field will be denoted by a red colored asterisk (*).
- Most changes to the system will be made in real-time; however, some changes will require a start and stop of Cisco Unified Business/Department Attendant Server.

Accessibility for Users with Disabilities

Cisco Unified Business/Department Attendant Admin provides accessibility features that make it easier for blind and visually impaired users to use the application.

The application runs in a web browser, therefore, the configurations can be made using a mouse as well as the standard keyboard navigations supported by the web browser.

All buttons are labelled by the functionality they provide. Each icon displays a tool tip when the mouse is hovered on it, clearly defining the function of the graphic button. A list of icons along with their descriptions has also been provided in Chapter 5, “Cisco Unified Business/Department Attendant Admin.”
Attendants also have an option to use Cisco Unified Business/Department Attendant Console with a screen reader plug in called JAWS. The screen reader provides the attendant with information on the status of the attendant console as well as with information about the text in the attendant console windows.

Cisco Unified Business/Department Attendant Admin also comes with context-sensitive help. For every page, users can access help specific to the page they need assistance for.

For more information on Cisco Accessibility Program please contact through the following link, http://www.cisco.com/web/about/responsibility/accessibility/contact.html
Accessibility for Users with Disabilities
Important Information

Compatibility Between Cisco Unified Business/Department Attendant Console and Cisco Unified Communications Manager

This chapter outlines the compatibility between Cisco Unified Business/Department Attendant Console and Cisco Unified Communications Manager. Reference is also made to key functions and considerations that should be understood prior to deploying the software. Table 2-1 shows the required Cisco TAPI TSP to use between Cisco Unified Business/Department Attendant Console and Cisco Unified Communications Manager.

<table>
<thead>
<tr>
<th>Communication Manager</th>
<th>7.0</th>
<th>7.1</th>
<th>7.1(2)</th>
<th>7.1(3)</th>
<th>8.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Unified Business/Department Attendant Console</td>
<td>8.0.0</td>
<td>8.0.0</td>
<td>8.0.0</td>
<td>8.0.0</td>
<td>8.0.0</td>
</tr>
</tbody>
</table>

Music on Hold

Cisco Unified Business/Department Attendant Console supports Music on Hold (MoH) from Cisco Unified Communications Manager in the following areas:

- When an Operator holds a call
- During a blind transfer
- During a re-established transfer

A music source must be selected on the relevant Service Queue devices to enable this functionality. The use of music in both the transferring and hold scenarios is controlled via settings on Cisco Unified Business/Department Attendant Admin.
TAPI Resilience

Cisco Unified Communications Manager allows a TSP client to communicate with a primary and backup CTI (Computer Telephone Integration) Manager to receive CTI information. This allows Cisco Unified Business/Department Attendant 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.

Call Park

The Attendant Console Call Park functionality is additional to the standard Cisco Unified Communications Manager call park and directed call park functions. Operators are able to see their available Park devices and choose whether to use a specific device or allow the system to select a device for them to park a call on.

Cisco Unified Presence Server

The Cisco Unified Business/Department Attendant Console can display information extracted from Cisco Unified Presence Server (CUPS) from Cisco Unified Communications Manager version 6.x onwards. Cisco Unified Presence is a standards-based platform that collects information about a user's availability and communications capabilities to provide unified user presence status and facilitate presence-enabled communications for Cisco Unified Communications and critical business applications. With this scalable and easy-to-manage solution, Cisco Unified Presence delivers a consistent presence-enabled communications experience across Cisco Unified Communications applications everywhere, every time, independent of user device, application, or workspace location. In addition, Cisco Unified Presence gives customers and partners the flexibility to presence-enable and streamline business communications by interoperating with critical business applications through open interfaces. The integration is managed via the Cisco Unified Attendant CUPS Plug-in directly to the Cisco Unified Business/Department Attendant Web Admin.

Changes to the CUPS Plug-in service will be managed in real-time. The CUPS Plug-in service will not be required to stop and restart for the changes to take affect.

The Attendant Console information is collected from the Cisco Unified Business/Department Attendant Web Admin.

Other Items to Remember

- Cisco Unified Business/Department Attendant Server and Cisco Unified Business/Department Attendant Console should not be installed on a machine that will act as Cisco Unified Communications Manager.
- Headset operation is supported.
Product Overview

Cisco Unified Business/Department Attendant Admin is the configuration tool for the Cisco Unified Business/Department Attendant Console applications. It allows communication with the Cisco Unified Communications Manager to create the required system devices, and communicates with the Attendant Server to configure the system parameters. The Cisco Unified Communications Manager integration uses the AXL (Avvid XML Layer) protocol, and requires some initial configuration on Cisco Unified Communications Manager itself to create a User Profile that allows communication via AXL protocol.

The following application is configured through Cisco Unified Business/Department Attendant Server,

**Cisco Unified Business/Department Attendant Console**

This is a screen-based operator console that has been developed to work exclusively on Cisco Unified Communications Manager. The traditional functions of a telephone switchboard have been re-created as a Windows application. It is visually more appealing, easier to operate and more user friendly.

*Figure 3-1* shows the default layout of Cisco Unified Business/Department Attendant Console with the various areas of the screen labeled as to the purpose.
The following devices are used to manage call routing and functionality.

**Queue DDI**

A Queue DDI (Direct Dial In) is the DN that is dialed to route calls into a call queue. Each configured DDI will be created on CCM as a CTI Route Point, and any call that is intended for this queue must be directed to this port, either directly or through translation.

**CT Gateway Devices**

The primary purpose of the CT gateway is to queue calls awaiting distribution to Cisco Unified Business/Department Attendant Console. CT Gateway devices are CTI Ports that are created by the Admin application when synchronized with Cisco Unified Communications Manager.

**Service Queues**

The Service Queue is a range of devices (CTI Ports) that are used to manage calls after they leave the operator’s handset, for example when transferring or holding calls.

**Park Devices**

Another range of CTI Ports that are used exclusively for when the attendant’s wish to park a call. They 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 dialling the Park port number. As these Park Devices are exclusive to the console attendants, they are situated on the Cisco Unified Business/Department Attendant Server and will require an additional range of DN’s.
Call Flow

Figure 3-2 shows how calls flow through Cisco Unified Business/Department Attendant Console and how they are controlled by Cisco Unified Business/Department Attendant and Cisco Unified Communications Manager.

Figure 3-2 Displays the Call Flow from Cisco Unified Communications Manager to the Cisco Unified Business/Department Attendant Console
Numbering Plan for Test Install

In order to use the system devices, that are, Service Queues, CT Gateway and Park Devices for call handling you can use the following numbering for a test install (Table 3-1). Take a printout of the following table and fill in your own number plan in the Directory Number field.

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Directory Number (Example)</th>
<th>Directory Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queue DDI</td>
<td>8100</td>
<td></td>
</tr>
<tr>
<td>Queue DDI</td>
<td>8101</td>
<td></td>
</tr>
<tr>
<td>CT Gateway</td>
<td>8000</td>
<td></td>
</tr>
<tr>
<td>CT Gateway</td>
<td>8001</td>
<td></td>
</tr>
<tr>
<td>CT Gateway</td>
<td>8002</td>
<td></td>
</tr>
<tr>
<td>CT Gateway</td>
<td>8003</td>
<td></td>
</tr>
<tr>
<td>CT Gateway</td>
<td>8004</td>
<td></td>
</tr>
<tr>
<td>Service Queue</td>
<td>8400</td>
<td></td>
</tr>
<tr>
<td>Service Queue</td>
<td>8401</td>
<td></td>
</tr>
<tr>
<td>Service Queue</td>
<td>8402</td>
<td></td>
</tr>
<tr>
<td>Service Queue</td>
<td>8403</td>
<td></td>
</tr>
<tr>
<td>Service Queue</td>
<td>8404</td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>8600</td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>8601</td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>8602</td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>8603</td>
<td></td>
</tr>
<tr>
<td>Park</td>
<td>8604</td>
<td></td>
</tr>
</tbody>
</table>

Performance Information

Performance of Cisco Unified Business/Department Attendant applications can be measured in several ways:

- Number of Operators
- Number of Contacts Supported
- Number of Console Queues
- BHCC - Busy Hours Call Completions. This is a measurement of telephone traffic determined by the network’s most active hour and used to gauge system capacity.

Table 3-3 shows the maximum numbers that can be achieved against each of the performance criteria.
<table>
<thead>
<tr>
<th>Performance Item</th>
<th>Maximum numbers with Cisco Business Enterprise Attendant Console</th>
<th>Maximum numbers with Cisco Department Enterprise Attendant Console</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Attendant Consoles</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Number of Contacts Supported</td>
<td>500</td>
<td>750</td>
</tr>
<tr>
<td>Number of Console Queues</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>BHCC</td>
<td>500</td>
<td>1000</td>
</tr>
</tbody>
</table>

Table 3-3  Shows the Performance of Cisco Unified Business/Department Attendant Console
Hardware / Software Requirements

The information in Table 3-4 and Table 3-5 provide details of the minimum hardware/software required to run Cisco Unified Business/Department Attendant applications.

<table>
<thead>
<tr>
<th>Applies To</th>
<th>PC Specification</th>
</tr>
</thead>
</table>
| Cisco Unified Business/Department Attendant Server | Pentium 4 2.2 GHz  
2 GB RAM  
72 GB Hard Drive  
CD-ROM/DVD-Rom  
Network Card  
SVGA (1024x768) display card with correct drivers  
.Net Framework 3.5**  
MS SQL Server 2008 (Express) *(See “SQL Consideration and Scalability” on page 3-7 for further information).  
Internet Information Service (IIS) 6.0 (or later).**  
* **Note: The Attendant Console Server installation will install these applications automatically. If MS SQL Express 2008 is installed manually, it must be installed as the Default instance for the Attendant Console to function. Cisco Unified Business/Department Attendant applications will not work with a Named instance of SQLExpress.  
** **Note: IIS is installed separately to the Attendant Console Server Installation and the ASP.NET component must be enabled and installed. This is done via the Add/Remove Windows Component > Applications Server and Details. |

The Server should be connected to the network via the TCP/IP protocol.

You will require appropriate Operating System Licenses.

Note

Cisco Unified Business/Department Attendant Server is not supported within a 64 bit Operating System.
Note Cisco Unified Business/Department Attendant Server is not supported on the Cisco MCS (Media Convergence Server) Operating System.

Note Cisco Unified Attendant Server is not supported in a live environment on VMWare, HyperV or any other virtual based operating system.

Note Access to the Cisco Unified Attendant Server is not supported at any time via Remote Desktop (RDP), Terminal Services (TS) or any other session based application. These applications can cause stability problems with the required TAPI/TSP and Wave Driver operation. Only local connection or VNC Connection is supported. See http://support.microsoft.com/kb/308405.

Table 3-5 Minimum Specification Required by Cisco Unified Business/Department Attendant Console Client

<table>
<thead>
<tr>
<th>Applies To</th>
<th>PC Specification</th>
</tr>
</thead>
</table>
| Cisco Unified Business/Department Attendant Console | Pentium 4 Entry Level Specification  
1 GB RAM  
1GB available Hard Drive space  
CD-ROM/DVD-ROM  
Network Card  
Connected to Network via TCP/IP  
SVGA (1024x768) display card  
Windows Small Fonts  
17 Monitor highly recommended  
XP Professional / Vista Professional (32 bit) / Windows 2003/2008 (See Note below this table).  
SoundBlaster compatible sound card and speakers are recommended for the Console Operator. |

Note If the Cisco Unified Business/Department Attendant is installed on Windows 2003 or Windows 2008 Operating System then ‘Data Execution Prevention (DEP)’ must be enabled. See Installing Cisco Unified Business/Department Attendant Console Client, page 4-14

Note If you are installing Cisco Unified Enterprise Attendant Console client on Windows Vista or Windows 2003 or 2008, there is an additional process that you need to complete by disabling the User Account Control. See Disabling the User Account Control in Windows Vista/2003/2008, page 4-22.
Backups

As with all systems, we advise that backup facilities are provided to ensure application and data integrity, should an unforeseen circumstance arise.

Examples:
- CD Writer
- Tape streamer. DLT, DAT, Travan etc
- Zip / Jaz drive or other type of Magneto Optical drive

If possible, choose a solution that gives a one step disaster recovery. This is a solution that has the ability to restore the complete contents of a hard drive from a bootable floppy disk and the restore media.

Server Redundancy

It is strongly recommended that the PC Server should be a redundant system with the following redundancy methods. This is at the discretion of the customer
- Multiple hot-swap power supplies
- Hot-swap Hard Drive arrays
- UPS / power conditioners
- RAID

Security Considerations

There are many different AntiVirus products that are supported on a Cisco Unified Enterprise Attendant Console system server. Supporting guidelines on AntiVirus software can be found on the following site:

Folder/File Exclusions

It is important that the AntiVirus product supports "Exclusions". This is the ability for the user to specify specific files and/or folders that will NOT be scanned by the AntiVirus program.

The following exclusions should be set when using AntiVirus on a Cisco Unified Business/Department Attendant Server

<table>
<thead>
<tr>
<th>File Location</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>\DBData</td>
<td>This folder is where the System Configuration Databases are located</td>
</tr>
<tr>
<td>Program Files\Cisco\Logging</td>
<td>This is where all the system log files are stored.</td>
</tr>
<tr>
<td>Temp\Cisco\Trace</td>
<td>This is where the Cisco TSP Trace files are located</td>
</tr>
</tbody>
</table>

Network Requirements

The files in the above table are constantly being written to and updated during standard operation of the Cisco Unified Business/Department Attendant system.
Due to this, these files are permanently being accessed - an AntiVirus "Scan on access" policy for these files will mean that the files are constantly being scanned for Viruses. This will in turn slow down the operation of the Server. Therefore, excluding these files from being continuously scanned will allow the Server to function as expected.

6. The following table outlines the network requirements for running Cisco Unified Business/Department Attendant applications.

Table 3-6  network requirements for running Cisco Unified Attendant applications

<table>
<thead>
<tr>
<th>Applies To</th>
<th>Network Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Network Types</td>
<td>The network will need to support/run TCP/IP.</td>
</tr>
<tr>
<td></td>
<td>Cisco Unified Business/Department Attendant Admin application will need to run under an Administrator profile. (Local Administrator is acceptable)</td>
</tr>
<tr>
<td>Microsoft Windows Network</td>
<td>If the network uses DHCP then the PC Server will need a static IP address allocated to it.</td>
</tr>
</tbody>
</table>

**SQL Considerations and Scalability**

Cisco Unified Business/Department Attendant Console installs SQL 2008 Express by default as part of its standard installation process. The performance limitation that SQL Server 2008 Express possesses is that it can access only a single CPU and 1 GB of RAM with a maximum database size of 4Gb.

In sites where one or more of the following are expected:

- A large number of operators – more than 10,
- A high call volume – greater than 500 calls per operator per day,
- A Large Directory – greater than 10,000 contacts;

The use of SQL Server 2008 Standard or Enterprise should be strongly considered. Where a system outgrows the SQL2008 Express deployment, the Standard or Enterprise versions of SQL 2008 can be used to upgrade the existing implementation with minimal effort.

**Note**

For future versions of Cisco Unified Business/Department Attendant Console to benefit from some features, SQL 2008 express will not be an option and SQL 2008 Standard or Enterprise will be required.

**Product Feature Table**

The following table displays a break down by feature of the following products.
- Cisco Attendant Console (CAC). (EOL (End of Life) April 2009).
- Cisco Unified Department Attendant Console (CUDAC)
- Cisco Unified Business Attendant Console (CUBAC)
- Cisco Unified Enterprise Attendant Console (CUEAC)
  The symbols denote the level of support within the product:
  ● = Supported, □ = Partial Support, ○ = Unsupported

**Table 3-7   Product Feature table**

<table>
<thead>
<tr>
<th>Feature</th>
<th>CUCM</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>Web &amp; Wizard</td>
<td>Web &amp; Wizard</td>
</tr>
<tr>
<td>Configuration</td>
<td>CUCM</td>
<td>Browser</td>
</tr>
<tr>
<td>Support</td>
<td>Cisco TAC</td>
<td>Cisco TAC 3rd tier - Arc</td>
</tr>
</tbody>
</table>

**Queue Features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>CUCM</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queues supported</td>
<td>Hunt Groups</td>
<td>● 1 per instance (5 instances on a server)</td>
</tr>
<tr>
<td>Configurable queue names and priority</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Show all calls in all queues option</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Queue salutations</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Show &amp; pick calls from each Queue</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Queue wait time overflow</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Queue limit overflow (no of calls)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Operator overflow (no operators)</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Queue overflow destinations supported</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Overflow options</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

**Service options**

<table>
<thead>
<tr>
<th>Feature</th>
<th>CUCM</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency mode switch</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
### Table 3-7  Product Feature table

<table>
<thead>
<tr>
<th>Feature</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAC</td>
</tr>
<tr>
<td>Emergency mode destination</td>
<td>○</td>
</tr>
<tr>
<td>Night service switch</td>
<td>●</td>
</tr>
<tr>
<td>Night service hours/timing</td>
<td>●</td>
</tr>
<tr>
<td>Night service destination</td>
<td>●</td>
</tr>
<tr>
<td>Directory features</td>
<td></td>
</tr>
<tr>
<td>Directory size supported</td>
<td>100k</td>
</tr>
<tr>
<td>Search fields</td>
<td>2</td>
</tr>
<tr>
<td>Mobile number support</td>
<td>○</td>
</tr>
<tr>
<td>Internal directory support</td>
<td>●</td>
</tr>
<tr>
<td>External directory support</td>
<td>○</td>
</tr>
<tr>
<td>Speed dials</td>
<td>●</td>
</tr>
<tr>
<td>Alternative number search (hotkey)</td>
<td>○</td>
</tr>
<tr>
<td>Alternate Contacts search</td>
<td>○</td>
</tr>
<tr>
<td>Directory to XML phones</td>
<td>○</td>
</tr>
<tr>
<td>Cross tab searching</td>
<td>○</td>
</tr>
<tr>
<td>Notes against person</td>
<td>○</td>
</tr>
<tr>
<td>Presence / Status features</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3-7  Product Feature table

<table>
<thead>
<tr>
<th>Feature</th>
<th>CAC</th>
<th>CUDAC</th>
<th>CUBAC</th>
<th>CUEAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Busy Lamp Fields / Phone Status supported</td>
<td>Yes</td>
<td>150 per instance (5 instances on a server)</td>
<td>500</td>
<td>7000</td>
</tr>
<tr>
<td>Presence integration with CUPS</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Telephony features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer Reversion (Call Recall)</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hold Recall</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Call toggle</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Camp on</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Call hold with notes</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td>Undirected Call park (finds first slot)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Directed Call Park (to specific Park location)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Call Hold</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Park recall</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Transfer</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Conference</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>System features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of Clients</td>
<td>●</td>
<td>2</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Keyboard driven</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>System logging</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
### Core Languages

The 15 core languages that are supported are: English, French, Italian, German, Spanish, Portuguese, Chinese (simpl), Chinese (trad.), Japanese, Korean, Arabic, Dutch, Swedish, Russian & Danish.

### Table 3-7 Product Feature Table

<table>
<thead>
<tr>
<th>Feature</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAC</td>
</tr>
<tr>
<td><strong>Cisco Unified CallManager Supported</strong></td>
<td>4.3, 5.1, 6.0, 6.1, 7.0</td>
</tr>
<tr>
<td><strong>Localisation and accessibility</strong></td>
<td>20</td>
</tr>
<tr>
<td>Languages supported*</td>
<td>○</td>
</tr>
<tr>
<td>Accessibility support (with JAWS Script)</td>
<td>○</td>
</tr>
</tbody>
</table>

Legend: ● = Supported, ○ = Partial Support, ○ = Unsupported
Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin

This section describes in detail the installation procedures for the following applications,

- Cisco Unified Business/Department Attendant Server
- Cisco Unified Business/Department Attendant Console

In order to install Cisco Unified Business/Department Attendant Applications, you must configure an End User profile on the Cisco Unified Communications Manager. All other configuration on the Cisco Unified Communications Manager will be handled by the Attendant Admin. Please refer to the following installation checklist for step-by-step installation sequence.

**Note**
If you are upgrading from one variation of Cisco Unified Attendant Console (such as a Business version to an Enterprise version) it is strongly recommended that you start with a completely clean server installation.

**Note**
Please note that installation via Terminal Services/Remote Desktop is NOT supported. Only a local installation or VNC connection is supported.

**Installation Overview**

This overview is designed to guide you through the installation process for Cisco Unified Business/Department Attendant Console in an easy to follow step-by-step sequence. A certain amount of preparation is required to ensure that a quick setup is achieved. Table 4-1 provides an overview of the Installation and Configuration steps that are required for a successful install of the software.
## Installation Overview

**Table 4-1 Installation and Configuration Overview**

### Step 1 Preparation

| Formulate numbering plan for test install. Refer to “Shows a Numbering Plan for a Test Install” on page 3 - 4 for required Directory Numbers. |

| Prepare a Service with Internet Information Services (IIS) installed and ASP.NET. Refer to “Hardware / Software Requirements” on page 3 - 6 for Server Requirements. |

### Step 2 Cisco Unified Communications Manager Configuration

| Create partition and Calling Search Space or add to existing ones as required. (Note: All CTI devices created for the Cisco Unified Business/Department Attendant Console, as well as operators extensions need to be able to receive and make calls to a full range of destinations.) For CUCM 7.x/8.x see “Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x” on page A - 1 or “Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x” on page C - 1 |

| Create an End User |

| Create a User Group |

| Assign roles to User Group |

| Assign End User to User Group |

| Assign End User to CCM Super User Group |

### Step 3 Install and Configure Cisco Unified Business/Department Attendant Admin

| Install Cisco Unified Business/Department Attendant Admin. See "Installing Cisco Unified Business/Department Attendant Server" on page 4 - 4 |

| Check Cisco Unified Communications Manager connectivity. See “CUCM Connectivity” on page 5 - 12. |

| Configure CT Gateway, Service and Park devices. See “System Configuration” on page 5 - 20. |

| Synchronize with CCM. Adds all required CTI devices to CCM, and adds them to the End User profile for CTI control. See “Synchronizing with CUCM” on page 5 - 23. |
Chapter 4 Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin

**Installation Overview**

**Step 3 Install and Configure Cisco Unified Business/Department Attendant Admin**


General Settings,
- Access Numbers
- FAC and CMC Settings
- Recall Timers
- Working Days
- Queue Management
- General (Name, DDI, Priority)
- Emergency destination
- Overflow destinations
- Night Service destination
- Operator management
- Operator login names and passwords

**Step 4 Install Cisco TSP on Cisco Unified Business/Department Attendant Server**

**Note**

Installation of the Cisco TSP with Cisco Unified Communications Manager 8.0 is silent and is completed within the installation of the Cisco Unified Business/Department Attendant Server.

Run the CiscoTSP.exe. As part of the install this file is extracted from the CUCM to the desktop. If you require to manually collect the file go to Communication Manager configuration and select Application > Plugins. For CUCM 7.0 See “Installing the TAPI TSP” on page B - 1 or for CUCM 8.0 see “Manually Installing the TAPI TSP” on page D - 1.

Select Cisco Telephony Service Provider and run the install following the onscreen instructions.

After rebooting the Server configure the TSP.

Install Cisco TAPI Wave Driver (instructions are in the TSP readme file). See “Installing the TAPI TSP” on page B - 1.

Reboot the server.
Installing Cisco Unified Business/Department Attendant Server

**Step 5 Test TAPI**

Use Phone1.exe (TAPI Soft Phone) from Julmar.com to test that,
a) all Associated devices appear in the line list, and
b) that a CTI Ports can be monitored and a call made
to a nearby handset.

**Step 6 Install Cisco Unified Business/Department Attendant Console.**

See “Installing Cisco Unified Business/Department Attendant Console Client” on page 4 - 14

---

Note

If you are upgrading from a previous version of the software you will follow the same installation process as outlined below. It is important to note that on Step 12, you have the ability to retain your existing configuration or create a brand new one.

Note

If you are upgrading from one variation of Cisco Unified Attendant Console (such as a Business version to an Enterprise version) it is strongly recommended that you start with a completely clean server installation.

Note

When installing the software you will need to have administration rights.

Prior to installing the Cisco Unified Business/Department Attendant Console software, it has to be downloaded. For information related to the download and registration of the software, refer to Appendix D “Downloading, Updating and Registering Software” on page E - 1 of this manual.

1. Browse to the directory where the downloaded installation files are saved.

To install the application, perform the following steps:

**Procedure**

**Step 1**

The initial part of the installation will install the 3rd party applications, including MS SQL Server 2008 Express, IE 6.0 and MS Dotnet 3.5 if they are not already installed. The default user name for the SQL connection will be sa and the default password will be Z1ppyf0rever. Figure 4-1 shows the first window that appears displaying a progress bar while the setup prepares the system for installation.
Step 2  The next screen displays a welcome note and instructions on installing (Figure 4-2). Click Next.

Step 3  The next window contains registration information (Figure 4-3). In the Name text box, type the name of the license holder, and type the company name into the Company text box. Click the Next button to proceed.
Step 4 In the next window (Figure 4-4), it is necessary to type the **Machine Name** or **IP Address** of the machine onto which the Server application is being installed. Click **Next**.

**Note** If you are unsure of the machine name, it is possible to find out through **Control Panel >Network**. This must be done on the machine that runs Cisco Unified Business/Department Attendant Server.

Step 5 If you already have MS SQL Server 2008 Express Edition, the screen in Figure 4-5 will be displayed. Enter the **Server Name**, **Username** and **Password** to connect to MS SQL Server Express 2008 Edition. The default user name for the SQL connection will be **sa** and the default password will be **Z1ppyf0rever**. Click **Next**.
**Note**
If MS SQL Server is not installed on your machine, it will be installed automatically by Cisco Unified Business/Department Attendant Server Installation. This is done during Step 1 (Figure 4-1).
IMPORTANTLY - If the SQL Server is installed this way, the following screen will not appear.

**Figure 4-5** Displays the Server Login Information Screen for Installation

![SQL Server Login Information](image)

**Step 6** In order to connect to Cisco Unified Communications Manager, you must enter the **IP address** and **Port**. This is shown in Figure 4-6. You must also specify the **Cisco Unified Communications Manager End User ID** and **Password**. Make sure the end user that you specify in this screen exists in the system. This is done through Cisco Unified Communications Manager administration. The creation of an end user has been explained in the appendices at the end of the document. Appendix A, “Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x.” and Appendix C, “Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x.”. Click Next.
Step 7 When you enter the Username and Password to connect to Cisco Unified Communications Manager in the previous window (Figure 4-6), two security alerts will be displayed (Figure 4-7). Click Yes on both the alerts to proceed.

Note Step 8 is only available during an installation to Cisco Unified Communication Manager 8.0. For an installation to Cisco Unified Communication Manager 7.0, move on to Step 9.

Step 8 This next window will only appear if the installation is being completed with Cisco Unified Communication Manager 8.0. You will be prompted to enter the IP Address or Host Name for the Primary CTI Manager location (See Figure 4-8). There is also an option to add the IP Address or Host Name for the Backup CTI Manager location.
Figure 4-8 Displays the Cisco TSP location Information

Step 9 The next window is for selecting the directory into which you wish to install the application (Figure 4-9). The default location is C:\Program Files\Cisco. By using the Browse button, you can select a different path and directory. Click the Next button.

Figure 4-9 Displays the Screen to Specify Location for the Files to be Installed

Step 10 A summary windows with the current settings specified will be displayed (Figure 4-10). Click Next to proceed with installation or click Back to edit the settings made on the previous screens.
Figure 4-10 displays the summary for the configuration made.

![Image](image-url)

**Figure 4-10**

Step 11 The installation will start and a progress bar will reflect how much of the process is completed (Figure 4-11).

**Figure 4-11** Displays the Progress Bar for the Installation

![Image](image-url)

**Step 12** Once the application has been installed, the **Database Wizard** will create and configure the databases for the application (Figure 4-12). Click **Next**.
**Chapter 4 Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin**

**Installing Cisco Unified Business/Department Attendant Server**

**Figure 4-12 Displays the Database Wizard Welcome Screen**

*Note*
If a previous installation has been installed on the machine you will be prompted that the database already exists. Clicking on **Yes** will give you a clean database with no configuration set. Clicking on **No** will upgrade your existing configuration.

**Step 13**
The next window shows the status of database installation (**Figure 4-13**). Once the installation is complete.
Installing Cisco Unified Business/Department Attendant Server

Step 14

If your installation is connected to Cisco Unified Communications Manager 8.0, a progress bar will appear while the Cisco TSP is being installed and configured (Figure 4-14).

Figure 4-14 Displays the Progress of the Cisco Unified Communications Manager TSP v8.0

Step 15

The application has now been installed successfully (Figure 4-15). It is recommended that you restart your computer. Click Finish.
Disabling the User Account Control in Windows 2003/2008

If you are installing Cisco Unified Business/Department Attendant Server on Windows 2003 or Windows 2008, there is an additional process that you need to complete by disabling the User Account Control. To do this perform the following steps:

Procedure

To complete this procedure you will need to have administration rights.

The Screens used in the following steps may vary between Window Versions. The ones used are based on Windows 2008.

Step 1 Select the Control Panel, and go to User Accounts.
Installing Cisco Unified Business/Department Attendant Console Client

To install Cisco Unified Business/Department Attendant Console Client, perform the following steps:

Procedure

Note

Step 1
Browse to the directory where the downloaded installation files are saved.
Step 2  The first window appears displaying a message that Cisco Unified Business/Department Attendant Console Installation Wizard is preparing to install (Figure 4-16). The progress bar on the screen shows the status of the setup and also shows the names of the files being extracted. Once the installation wizard is ready to install the application, a new screen will be displayed that will guide you through the setup process for Cisco Unified Business/Department Attendant Console.

**Figure 4-16  Displays the First Install Screen**

![First Install Screen](image)

Step 3  After the Preparing to Install window, a Welcome screen will appear (Figure 4-17). This screen specifies that Cisco Unified Business/Department Attendant Console and its components will be installed on your computer. To continue, click Next. If you wish to exit from the setup at this point, click Cancel.

**Figure 4-17  Displays the Welcome Screen to Installation**

![Welcome Screen](image)

Step 4  The next window contains the registration information (Figure 4-18). In the Name text box, type the name of the registered owner of Cisco Unified Business/Department Attendant Console, and type the owner’s company name into the Company text box. Click the Next button to proceed.
Installing Cisco Unified Business/Department Attendant Console Client

Step 5 Select the folder where you wish to install the application (Figure 4-19). It is recommended to use the default destination folder specified on the screen. The default destination folder is created on the following path:

C:\Program Files\Cisco\

If you wish to install the application to a different location, use the **Browse** button to select a different location. Click **Next** to proceed.

Step 6 In the next window, enter the **IP Address** or **name** of the machine running Cisco Unified Business/Department Attendant Server (Figure 4-20). This is required in order to enable communication between Cisco Unified Business/Department Attendant Console and Cisco Unified Business/Department Attendant Server. Click **Next** to proceed.
Note: If the IP address for Cisco Unified Attendant Server is entered incorrectly, Attendant Console will not be able to connect to the server and will therefore not function.

**Figure 4-20  Displays the Screen for Server Information**

![Server Information Screen](image)

**Step 7** In the next window select the language in which you want to install the application (Figure 4-21). Click **Next** to proceed.

Note: Where a DNS Server is not present on the network or the Servers Machine Name cannot be resolved, the Hosts file (WINDOWS\system32\drivers\etc\) should be amended to reflect the IP Address and Server Machine Name of the server.

**Figure 4-21  Displays the Screen Used to Select the Language for the Application**

![Language Selection Screen](image)

**Step 8** In the next window, select the check box to add an icon for Cisco Unified Business/Department Attendant Console on the desktop (Figure 4-22). Click **Next** to proceed.
The installation wizard will display a summary of the information you have entered so far (Figure 4-23). You can review these settings on this screen and click Back if you wish to edit some information. If you are satisfied with the settings, click Next to allow the setup to start copying the files.

Step 9 A progress bar is displayed that shows the status of the installation configurations and the files being copied (Figure 4-24). If you wish to exit the setup at this point, click Cancel.
Step 10  The final window displays the confirmation that Cisco Unified Business/Department Attendant Console has been installed successfully (Figure 4-25). Click the Finish button.

**Installing Cisco Unified Business/Department Attendant Console Client on Windows 2003/2008/Vista (32 bit)**

If you are installing Cisco Unified Business/Department Attendant Console Client on Windows 2003 or Windows 2008, Vista (32 bit) there is an additional process that you need to complete by setting Data Execution protection on. To do this perform the following steps:

**Procedure**
**Note** When installing the software you will need to have administration rights.

**Step 1** Right Click on **My Computer** and select Properties.

**Step 2** The System window will open. Select Advanced System Settings. Note the image below shows the Windows 2008.
Step 3  Select the Advanced tab. Under the heading Performance, click on the Setting button.

![System Properties Window]

Step 4  The Performance Option Dialogue Box will open. Select Data Execution Prevention tab.

![Performance Options Window]
Step 5 On the Data Execution Prevention tab select the option to **Turn on DEP for essential windows programs and services**. Click on **Apply** and **OK** to close this dialogue box.

---

**Disabling the User Account Control in Windows Vista/2003/2008**

If you are installing Cisco Unified Business/Department Attendant Console client on Windows Vista, Windows 2003 or Windows 2008, there is an additional process that you need to complete by disabling the User Account Control. To do this perform the following steps:

**Procedure**

- **Note** To complete this procedure you will need to have administration rights.

- **Note** The Screens used in the following steps may vary between Window Versions. The ones used are based on Windows 2008.

**Step 1** Select the **Control Panel**, and go to **User Accounts**.
Step 2  Click on **Turn User Account Control on or off**.

Step 3  De-select the tick box, **Use User Account Control (UAC) to help protect your computer**. Then click on **OK**.

Step 4  You will be asked to Restart the machine for the change to take effect.
Chapter 4 Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin

Disabling the User Account Control in Windows Vista/2003/2008
This section will guide you through the configuration for Cisco Unified Business/Department Attendant Console.

Cisco Unified Business/Department Attendant Admin allows you to create and manage the Attendant Console system.

System configuration provides the facility to manage synchronization of devices and directories with Cisco Unified Communications Manager. Cisco Unified Business/Department Attendant Console and Cisco Unified Communications Manager communicate via AXL API, using SSL, to synchronize the system devices used for queuing, servicing and parking calls. These devices are created as CTI Port and CTI Route Point devices within the Cisco Unified Communications Manager database.

User configuration allows you to make configurations for the Cisco Unified Business/Department Attendant Console. These settings are configured in order to make global configurations for internal/external calls access, Force Authorization and Client Matter Codes and Recall timers. These settings are made in order to manage the call flow.

In order to get started, an initial URL will be used to access Cisco Unified Business/Department Attendant Admin web session. This URL will be in the following format:


The URL, as provided by the network administrator will be entered in the address bar of the web browser, Figure 5-1 shows an example of the URL that would be used.

Figure 5-1 Displays an example of the URL Entered in the Internet Explorer Address Bar

You must login to Cisco Unified Business/Department Attendant Admin in order to configure settings for Cisco Unified Business/Department Attendant Console.
Administrator Login

Cisco Unified Business/Department Attendant Admin requires authentication for users, and is accessible only to Administrators for making new configurations for Cisco Unified Business/Department Attendant Console or updating them. Most of the settings configured using Cisco Unified Business/Department Attendant Admin will be made in real-time, however, some changes may require Cisco Unified Attendant Server to be restarted. The default user name is ADMIN and the default password is CISCO.

To log on to Cisco Unified Business/Department Attendant Admin,

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the URL specified by your network administrator to access Cisco Unified Business/Department Attendant Admin.</td>
</tr>
<tr>
<td>2</td>
<td>The Logon page will open.</td>
</tr>
<tr>
<td>3</td>
<td>Enter User name.</td>
</tr>
<tr>
<td>4</td>
<td>Enter Password.</td>
</tr>
</tbody>
</table>

Table 5-1 shows a list of the icons that are used while configuring the Cisco Unified Business/Department Attendant Console.

Table 5-1 Provides the description for the icons used in the user guide

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Save Icon]</td>
<td>Save</td>
</tr>
<tr>
<td>![Reset Password Icon]</td>
<td>Reset Password</td>
</tr>
<tr>
<td>![Test Connection Icon]</td>
<td>Test Connection</td>
</tr>
<tr>
<td>![Repair Database Icon]</td>
<td>Repair Database</td>
</tr>
<tr>
<td>![Database Repair Report Icon]</td>
<td>Database Repair Report</td>
</tr>
<tr>
<td>![Calendar Icon]</td>
<td>Calendar: this will present a calendar page to select a date from.</td>
</tr>
<tr>
<td>![Start Server Icon]</td>
<td>Start Server</td>
</tr>
<tr>
<td>![Stop Server Icon]</td>
<td>Stop Server</td>
</tr>
<tr>
<td>![Information Icon]</td>
<td>Information Icon: Used to view runtime information for a service.</td>
</tr>
<tr>
<td>![Refresh Icon]</td>
<td>Refresh</td>
</tr>
<tr>
<td>![Synchronize with CUCM Icon]</td>
<td>Synchronize with CUCM</td>
</tr>
</tbody>
</table>
Step 5  
Click Save.

Figure 5-2  
Figure 2: displays the login page for the application

The following table gives a brief description for the fields mentioned in the form displayed above,

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name</td>
<td>ADMIN</td>
<td>This field specifies the user name to log in with. The user name is ADMIN by default.</td>
</tr>
<tr>
<td>Password</td>
<td>*****</td>
<td>The password used by the Administrator to log in.</td>
</tr>
</tbody>
</table>

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

Home Page

Following a successful log in, you will be shown the home page that displays the main menus for configuring the application. The following areas can be accessed and configured,

Table 5-3  provides the details for different types of configurations available

<table>
<thead>
<tr>
<th>Configuration Menu</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>This section provides connectivity and support management facilities.</td>
</tr>
<tr>
<td>System Configuration</td>
<td>This section provides the administrator with facilities to manage synchronization of devices and queues with Cisco Unified Communications Manager.</td>
</tr>
<tr>
<td>User Configuration</td>
<td>This section provides the administrator with facilities to manage Cisco Unified Business/Department Attendant Console configuration.</td>
</tr>
<tr>
<td>Help</td>
<td>Provides help information and also includes a section for licensing the applications.</td>
</tr>
</tbody>
</table>

As well as the configuration options the Home Page also displays version numbers and the registration status.
Figure 5-3  displays the Cisco Unified Business/Department Attendant Console home page.

These configurations are explained in detail in the following sections.

**Engineering**

The Engineering section provides connectivity and support management facilities. It allows administrators to:

- Administrator Management
- Database Management
- Database Purge
- Service Management
- Cisco Unified Communications (CUCM) Connectivity
- CUPS Connectivity
- Logging Management

**Administrator Management**

This section allows you to change or reset the password used for logging into the Web Admin application.

To change password,

**Step 1** Go to *Engineering > Administrator Management.*
**Figure 5-4**  
*displays the menu option for Administrator Management*

![Menu Option for Administrator Management](image)

**Step 2**  
Enter *Old Password*.

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

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

**Step 5**  
Click ![Save](image) to save changes.

---

**Figure 5-5**  
*displays the Administrator Management page*

![Administrator Management Page](image)

The following table gives a brief description for the fields mentioned in the form displayed,

**Table 5-4**  
*descriptions for the fields mentioned on the Administrator Management page*

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old password</td>
<td>*****</td>
<td>The existing password for the ADMIN user name.</td>
</tr>
<tr>
<td>New Password</td>
<td>*****</td>
<td>The new password you wish to switch to.</td>
</tr>
<tr>
<td>Confirm new password</td>
<td>*****</td>
<td>The new password has to be re-entered in this field in order to confirm you did not mistype in the New Password field.</td>
</tr>
</tbody>
</table>

**Note**  
It is good practice to have a strong password that utilizes both numeric and alpha characters. The Cisco Unified Attendant Server allows up to a maximum of 20 characters including the use of Special Characters such as %,$,£,&.
To set the password back to its default value, that is, CISCO, click **Reset Password**.

**Database Management**

This web page allows configuration for database connectivity details. You can test and repair the databases as well.

The Configuration database will be created at the time of installation. Only the connectivity details can be modified through this page.

To manage database,

**Step 1** Go to **Engineering > Database Management**.

*Figure 5-6* displays the Database Management menu option

**Step 2** In the Server field, specify the name of the machine where the SQL Server is installed.

**Step 3** Enter **User Name**.

**Step 4** Enter **Password**.

**Step 5** To save changes, click **Save**. You will be prompted that Cisco Unified Business/Department Attendant Server must be restarted for the changes to take affect. If you select the option, Cisco Unified Business/Department Attendant Admin can restart server automatically.

**Step 6** To test the database, click **Test Connection**.

**Step 7** To repair database, click **Repair Database**. You will be prompted that Cisco Unified Business/Department Attendant Server must be stopped before repairing the database. If you select the option, Cisco Unified Business/Department Attendant Admin can stop the server and repair the database. The server service will need to be manually restarted.

**Step 8** If the database has required to be repaired, there is a facility to run a report by clicking on the **Database Repair Report** button. This will open a window that will display the following information:-

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

The following image shows the configurations you can set using the above-mentioned procedure.

![Database Management page](image)

Figure 5-7 displays the Database Management page

The following table gives a brief description for the fields mentioned in the form displayed above,

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server</td>
<td>209.165.202.128</td>
<td>In this field you specify the IP Address of the machine where MS SQL Server 2008 is installed.</td>
</tr>
<tr>
<td>User name</td>
<td>username1</td>
<td>You must enter the user name used to connect to SQL Server. If MS SQL Server was installed through Cisco Unified Business/Department Attendant Server Installation Wizard, the user name would be sa.</td>
</tr>
<tr>
<td>Password</td>
<td>*******</td>
<td>You must enter the password used to connect to SQL Server. If MS SQL Server was installed through Cisco Unified Business/DepartmentEnterprise Attendant Server Installation Wizard, the password would be Z1ppyf0rever.</td>
</tr>
</tbody>
</table>

Note

Changes to the database configuration will require a stop and restart of Cisco Unified Business/Department Attendant Server.
Database Purge

The Database Purge web page allows you to purge old call logging information and repair indexes within the database.

**Figure 5-8** displays the Database Purge menu option

**Step 1** Enter Start Date either by entering the format yyyy-mm-dd (year-month-date) or selecting it from the calendar using the icon.

**Step 2** Enter End Date either by entering the format yyyy-mm-dd (year-month-date) or selecting it from the calendar using the icon.

**Step 3** Click **Repair and Purge the Database**. You will be prompted that Cisco Unified Business/Department Attendant Server must be stopped before repairing the database. If you select the option, Cisco Unified Business/Department Attendant Admin can stop the server and repair the database. The server service will need to be manually restarted.

**Step 4** If the database has required to be Purged, there is a facility to run a report by clicking on the Database repair report. This will open a window that will display 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
Figure 5-9 displays the Database Management page

The figure shows a sample of the Database Purge Report that can be run from this screen.

Figure 5-10 displays the Database Purge Report

Service Management

The Service Management web page allows you to start or stop the following servers,

1. Cisco Unified Attendant Server
2. Cisco Unified Attendant LDAP Plug-in
3. Cisco Unified Attendant CUPS Plug-in
4. Cisco Unified BLF Plug-in

*Figure 5-11* displays the menu option for Service Management

The following controls are available.

*Table 5-6* provides the description for server controls

<table>
<thead>
<tr>
<th>Control</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Server</td>
<td>🎁</td>
<td>This button allows you to start the server.</td>
</tr>
<tr>
<td>Stop Server</td>
<td>🚫</td>
<td>This button allows you to stop the server.</td>
</tr>
<tr>
<td>Information</td>
<td>📋</td>
<td>This button allows you to view runtime information for the service. The information is displayed in a separate pop-up window.</td>
</tr>
<tr>
<td>Refresh</td>
<td>🔄</td>
<td>The <strong>Refresh</strong> button and the icon shown on the left allow you to see the current status of the server.</td>
</tr>
</tbody>
</table>
Figure 5-12 displays the Service Management page

The status window will display the statuses of the following for Cisco Unified Attendant Server,
- CUCM Link
- Configuration Database
- Logging Database
- Event Network

The status window will display the statuses of the following for Cisco Unified LDAP Plug-in,
- Primary Server
- Configuration Database
- Logging Database

The status window will display the statuses of the following for Cisco Unified CUPS Plug-in,
- Primary Server

The status window will display the statuses of the following for Cisco Unified BLF Plug-in,
- CT Link
- DRM
- COMMS

Table 5-7 displays the statuses for the Service Management page,

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected</td>
<td>The server and databases are connected.</td>
</tr>
<tr>
<td>Not Connected</td>
<td>The server and databases are not connected.</td>
</tr>
<tr>
<td>Standby</td>
<td>This status can be viewed for Logging Database only. It specifies that the connection between the service and the Logging Database is currently not in use.</td>
</tr>
</tbody>
</table>
CUCM Connectivity

CUCM Connectivity is essential to allow system devices to be configured automatically on the Cisco Unified Communications Manager. This section allows the connection details to be managed and tested, initially using the details entered during the installation process.

To manage connectivity details,

**Step 1**
Go to Engineering > CUCM Connectivity.

*Figure 5-13 displays the menu option for CUCM Connectivity*

**Step 2**
Enter *CUCM name*. This is the IP Address of the Cisco Unified Communications Manager Publisher.

**Step 3**
Enter *CUCM Port number*. This should be left as 443 by default.

**Step 4**
Enter *User name* and *Password* of the End User profile that is used to connect to Cisco Unified Communications Manager.

**Step 5**
To save, click **Save**.

**Step 6**
To test, click **Test Connection**.

The following image shows the configurations you can set using the above-mentioned procedure.

*Figure 5-14 displays the CUCM Connectivity page*
Warning
The Username and Password provided here are case-sensitive. Please make sure you enter the information in these fields in proper case.

The information provided in the Username and Password fields must not belong to an application user, for example CUCMAdministrator.

**CUPS Connectivity**

CUPS Connectivity details are used to configure the Cisco Unified Attendant CUPs Plug-in with the Cisco Unified Presence Server, which is available with CUCM 6.0 upwards.

To manage connectivity details,

**Step 1** Go to Engineering > CUPS Connectivity.

**Figure 5-15** displays the menu option for CUPS Connectivity

---

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUCM name or IP</td>
<td>209.165.201.0</td>
<td>In this field you specify the IP Address of the machine where CUCM is installed.</td>
</tr>
<tr>
<td>CUCM port</td>
<td>443</td>
<td>In this field you specify the CUCM port you wish to connect to. This is set to 443 by default.</td>
</tr>
<tr>
<td>Username</td>
<td>username1</td>
<td>You must enter the user id used to connect to CUCM. The user is created through CUCM administration. This is has been explained in the appendices at the end of the guide.</td>
</tr>
<tr>
<td>Password</td>
<td>*****</td>
<td>You must enter the password used to connect to CUCM.</td>
</tr>
</tbody>
</table>
Step 5  Enter the **CUPS TLS** (Transport Layer Security) Port. By default this is set to -1 indicating that TLS is switched off. To enable TLS, specify the correct Port number (Normally either 5061 or 5062).

Step 6  Enter **Certificate nickname** and the **Certificate Database password** if TLS has been enabled.

**Figure 5-16**  displays the CUPS Connectivity page

![CUPS Connectivity](image)

**Table 5-9**  provides description for the fields on the CUCM Connectivity page

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUPS name or IP</td>
<td>209.165.201.0</td>
<td>In this field you specify the IP Address of the machine where CUPS is installed.</td>
</tr>
<tr>
<td>CUPS port</td>
<td>5060</td>
<td>In this field you specify the CUPS port you wish to connect to. This is set to <strong>5060</strong> by default. (When not using TLS)</td>
</tr>
<tr>
<td>Realm</td>
<td></td>
<td>The realm is used to authenticate the SIP communication. If this is left blank then the IP address of the Cisco Unified Presence Server will be used.</td>
</tr>
<tr>
<td>TLS Port</td>
<td>-1</td>
<td>Transport Layer Security Port. By default this is set to -1 indicating that TLS is switched off. To enable TLS, specify the correct Port number (Normally either 5061 or 5062).</td>
</tr>
</tbody>
</table>

Step 7  To save, click **Save**.

Step 8  To test, click **Test Connection**.
Chapter 5 Cisco Unified Business/Department Attendant Console Admin

Note

IMPORTANT - The Cisco Unified Attendant CUPs Plug-in has to be added to the firewall information on the CallManager. See section “Configuring Access for the Cisco Unified Attendant CUPS Plug-In” on page A-6.

Logging Management

The Logging Management page allows real-time logging to be enabled or disabled for Cisco Unified Attendant Server and Cisco Unified Attendant LDAP Plug-in.

To manage logging,

Step 1 Go to Engineering > Logging Management.

Figure 5-17 displays the menu option for Logging Management.

Step 2 Enter Cisco Unified Attendant Server Logging Management details.
Step 3 Enter Cisco Unified Attendant LDAP Plug-in Logging Management details.
Step 4 Enter Cisco Unified Attendant CUPs Plug-in Logging Management details.
Step 5 Enter Cisco Unified Attendant BLF Plug-in Logging Management details.
Step 6 Click Save to save changes.

The following image shows the configurations you can set using the above-mentioned procedure.

Table 5-9 provides description for the fields on the CUCM Connectivity page

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate nickname</td>
<td>nickname1</td>
<td>Transport Layer Security certificate nickname is used to identify the correct certificate in the certificate database.</td>
</tr>
<tr>
<td>Certificate database password</td>
<td>******</td>
<td>Transport Layer Security certificate password will validate the user name above to provide access to the database.</td>
</tr>
</tbody>
</table>

Certificate nickname

nickname1
Certificate database password

******
Transport Layer Security certificate password will validate the user name above to provide access to the database.

Table 5-9 provides description for the fields on the CUCM Connectivity page

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate nickname</td>
<td>nickname1</td>
<td>Transport Layer Security certificate nickname is used to identify the correct certificate in the certificate database.</td>
</tr>
<tr>
<td>Certificate database password</td>
<td>******</td>
<td>Transport Layer Security certificate password will validate the user name above to provide access to the database.</td>
</tr>
</tbody>
</table>

Certificate nickname

nickname1
Certificate database password

******
Transport Layer Security certificate password will validate the user name above to provide access to the database.
**Figure 5-18** displays the Logging Management page

### Logging Management

#### Cisco Unified Attendant Server
- **Main process**: ✔
- **Roter process**: ✔
- **CTI process**: ✔
- **Database process**: ✔

<table>
<thead>
<tr>
<th>Logging path &amp; file name</th>
<th>C:\Program Files\Cisco\Logging\SRV\log\ICDLog.TXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of files</td>
<td>1000 (1-255)</td>
</tr>
<tr>
<td>Lines per file</td>
<td>90000 (1-10000000)</td>
</tr>
</tbody>
</table>

#### Cisco Unified Attendant LDAP Plug-in
- **Logging level**: Full
- **Logging path & file name**: C:\Program Files\Cisco\Logging\LDAP\log\LDAPTrace.TXT

| Number of files | 200 (1-255) |
| Lines per file | 30000 (1-10000000) |

#### Cisco Unified Attendant CUPS Plug-in
- **Logging level**: Detailed (Default)
- **Logging path & file name**: 

| Number of files | ✔ |
| Lines per file | ✔ |

#### Cisco Unified Attendant BLF Plug-in
- **Logging level**: Full
- **Logging path & file name**: C:\Program Files\Arc\Arc Connect\Logging\CTIS\CTIServer.log

| Number of files | 100 (1-255) |
| Lines per file | 30000 (1-10000000) |
The following table gives a brief description for the fields mentioned in the form displayed above.

Table 5-10 provides the description for the fields on the Logging Management page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cisco Unified Attendant Server</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main process</td>
<td></td>
<td>This checkbox is checked to log the main process.</td>
</tr>
<tr>
<td>CTI process</td>
<td></td>
<td>This checkbox is checked to log the CTI process.</td>
</tr>
<tr>
<td>Communication process</td>
<td></td>
<td>This checkbox is checked to log the communication process.</td>
</tr>
<tr>
<td>Router process</td>
<td></td>
<td>This checkbox is checked to log the router process.</td>
</tr>
<tr>
<td>Database process</td>
<td></td>
<td>This checkbox is checked to log the database process.</td>
</tr>
<tr>
<td>Logging path &amp; file name</td>
<td>C:\Program Files\Cisco\Attendant LDAP Plug-in Log\log.txt</td>
<td>In this field you specify the location where the log file must be saved. Include the name of the log file in the path so that the file is created by the name specified.</td>
</tr>
<tr>
<td>Number of files</td>
<td>200</td>
<td>In this field you specify the number of log files that can be created in the logging folder.</td>
</tr>
<tr>
<td>Lines per file</td>
<td>10000</td>
<td>In this field you specify the number of lines each log file can contain.</td>
</tr>
<tr>
<td>Service logging path &amp; file name</td>
<td>C:\Program Files\Cisco\Attendant Server\Log\ICD1.TXT</td>
<td>In this field you specify the location and name for the file that stores the logs for the service.</td>
</tr>
</tbody>
</table>

**Cisco Unified Attendant LDAP Plug-in**

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logging level</td>
<td>Detailed (default)</td>
<td>This can be set from Detailed, Advanced, Minimum, Full.</td>
</tr>
<tr>
<td>Logging path &amp; file name</td>
<td>C:\Program Files\Cisco\Attendant Server\Log\ICD.TXT</td>
<td>In this field you specify the location where the log file must be saved. Include the name of the log file in the path so that the file is created by the name specified.</td>
</tr>
<tr>
<td>Number of files</td>
<td>200</td>
<td>In this field you specify the number of log files that can be created in the logging folder.</td>
</tr>
<tr>
<td>Lines per file</td>
<td>10000</td>
<td>In this field you specify the number of lines each log file can contain.</td>
</tr>
</tbody>
</table>

**Cisco Unified Attendant CUPS Plug-in**

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logging level</td>
<td>Detailed (default)</td>
<td>This can be set from Detailed, Advanced, Minimum, Full.</td>
</tr>
<tr>
<td>Logging path &amp; file name</td>
<td>C:\Program Files\Cisco\Attendant Server\Log\CUPS.TXT</td>
<td>In this field you specify the location where the log file must be saved. Include the name of the log file in the path so that the file is created by the name specified.</td>
</tr>
<tr>
<td>Number of files</td>
<td>200</td>
<td>In this field you specify the number of log files that can be created in the logging folder.</td>
</tr>
</tbody>
</table>
Cisco Unified Attendant Server Logging

Runtime logging for Cisco Unified Attendant Server maintains logs for each event that is fired by Cisco Unified Attendant Server. The logs can be maintained for the following areas,

1. Main Process
2. Router Process
3. CTI Process
4. Database Process
5. Communication Process

By default Main and Router processes will be activated at installation. You should only need to amend these settings if requested as part of a Support Case investigation.

To manage logging for Cisco Unified Attendant Server,

Step 1 You must select the areas for which the log is to be maintained. In order to keep the log file up to a manageable size, it is recommended that you should keep only the required areas selected.

Step 2 You must specify the Logging path and file name where the log must be created.

Step 3 Specify the number of log files that must be created in the Number of files field.

Step 4 Specify the number of lines each log file can contain in the Lines per file field.

Step 5 Enter Service logging path and file name to maintain log of the services for Cisco Unified Attendant Server.

Cisco Unified Attendant LDAP Plug-in Logging

Cisco Unified Business/Department Attendant Admin has the ability to keep records of all the events and processes through the process of logging. It is structured to enable and support you to check LDAP Plug-in’s performance and activity, determine functionality loss and the configuration issues.

Table 5-10 provides the description for the fields on the Logging Management page

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lines per file</td>
<td>10000</td>
<td>In this field you specify the number of lines each log file can contain.</td>
</tr>
<tr>
<td>Cisco Unified Attendant BLF Plug-in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logging level</td>
<td>Detailed (default)</td>
<td>This can be set from Detailed, Advanced, Minimum, Full.</td>
</tr>
<tr>
<td>Logging path &amp; file name</td>
<td>C:\Program Files\Cisco\Attendant Server\Log\CUPS.TXT</td>
<td>In this field you specify the location where the log file must be saved. Include the name of the log file in the path so that the file is created by the name specified.</td>
</tr>
<tr>
<td>Number of files</td>
<td>200</td>
<td>In this field you specify the number of log files that can be created in the logging folder.</td>
</tr>
<tr>
<td>Lines per file</td>
<td>10000</td>
<td>In this field you specify the number of lines each log file can contain.</td>
</tr>
</tbody>
</table>
To manage logging for Cisco Unified Attendant LDAP Plug-in,

**Step 1** Select the *Logging Level* for LDAP Plug-in. Cisco Unified Business/Department Attendant Admin provides the following options:
- Detailed
- Advanced
- Minimum
- Full

**Step 2** Specify the *Logging path and file name* where the log must be created.

**Step 3** Specify the number of log files that must be created in the *Number of files* field.

**Step 4** Specify the number of lines each log file can contain in the *Lines per file* field.

---

**Cisco Unified Attendant CUPS Plug-in Logging**

Cisco Unified Business/Department Attendant Admin has the ability to keep records of all the events and processes through the process of logging. It is structured to enable and support you to check CUPS Plug-in’s performance and activity, determine functionality loss and the configuration issues.

To manage logging for Cisco Unified Attendant CUPS Plug-in,

**Step 1** Select the *Logging Level* for CUPS Plug-in. Cisco Unified Business/Department Attendant Admin provides the following options:
- Detailed
- Advanced
- Minimum
- Full

**Step 2** Specify the *Logging path and file name* where the log must be created.

**Step 3** Specify the number of log files that must be created in the *Number of files* field.

**Step 4** Specify the number of lines each log file can contain in the *Lines per file* field.

---

**Cisco Unified Attendant BLF Plug-in Logging**

Cisco Unified Business/Department Attendant Admin has the ability to keep records of all the events and processes through the process of logging. It is structured to enable and support you to check BLF Plug-in’s performance and activity, determine functionality loss and the configuration issues.

To manage logging for Cisco Unified Attendant BLF Plug-in,

**Step 1** Select the *Logging Level* for BLF Plug-in. Cisco Unified Business/Department Attendant Admin provides the following options:
- Detailed
- Advanced
• Minimum
• Full

Step 2 Specify the *Logging path and file name* where the log must be created.

Step 3 Specify the number of log files that must be created in the *Number of files* field.

Step 4 Specify the number of lines each log file can contain in the *Lines per file* field.

---

### System Configuration

This section provides facilities to manage the synchronization of devices and directories with Cisco Unified Communications Manager. The following configurations are available under this menu,

1. System Device Management
2. Synchronize with CUCM
3. Directory Filtering
4. Directory Synchronization
5. Directory Rules (Only available in Cisco Unified Business Attendant Console)

*Figure 5-19* displays the menu *System Configuration option - Cisco Unified Business Attendant Console*

*Figure 5-20* displays the menu *System Configuration option - Cisco Unified Department Attendant Console*

### System Device Management

This web page allows device ranges to be configured and synchronized with Cisco Unified Communications Server.

To add devices,
Step 1  Go to System Configuration > System Device Management.

Step 2  Select a Template Device. All device properties (such as device pool, partition, calling search space) of the selected device will be mapped onto new devices being created. When you click on Find Template Device you are able to search by a variety of criteria. This criteria is broken into the following entities:

- Device type e.g. Device Name, Description, Directory Number.
- Search criteria e.g. Begins with, Contains, Ends with, etc.
- Specific criteria: The variable to search.
- There is also facility by using the to add additional search criterias. This would be used to narrow the search.

Step 3  Click on Find to run the Query.

Figure 5-21 displays the Device search functionality (with 2 criteria displayed)

Step 4  Enter a device range for each of the following:

- CT Gateway Devices (See “CT Gateway Devices” on page 3 - 2)
- Service Devices (See “Service Queues” on page 3 - 2)
- Park Devices (See “Park Devices” on page 3 - 2)

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

Step 5  Click to save changes.

Step 6  Clicking Synchronize with CUCM will redirect to Synchronizing with CUCM page within Cisco Unified Attendant Admin application.

The following image shows the configurations you can set using the above-mentioned procedure.
Figure 5-22 displays the System Device Management page

The following table gives a brief description for the fields mentioned in the form displayed above.

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Template Device** |         | Copy all device properties from this device. When you click on Find Template Device you are able to search by a variety of criteria. This is criteria is broken into the entity:
  - Device type e.g. Device name, Description, Directory Number.
  - Search criteria e.g. Begins with, Contains, Ends with, etc.
  - Specific Criteria: The variable to search.
There is also facility by using the [ ] to add additional search criterias.(To a maximum of 10). |
| **CT Gateway Devices** | From 6301 | Specify the starting number for the range of devices to be configured. |
|                 | To 6302  | Specify the last number in the range of devices to be configured. |
| **Service Devices** | From 6401 | Specify the starting number for the range of devices to be configured. |
|                 | To 6402  | Specify the last number in the range of devices to be configured. |
| **Park Devices**  |         |            |
Synchronizing with CUCM

This web page is used to synchronize device configurations with Cisco Unified Communications Manager via AXL API. It will create the devices that have been configured if they don’t already exist and assign them to the End User profile. The following devices will be displayed on this page,

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

To synchronize the above-mentioned devices with Cisco Unified Communication Manager, click **Synchronize with CUCM**. Cisco Unified Business/Department Attendant Admin will automatically synchronize the devices with CUCM for you. You will not have to login to the CUCM administration.

---

Table 5-11  provides description for the fields on the System Device Management page

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>6501</td>
<td>Specify the starting number for the range of devices to be configured.</td>
</tr>
<tr>
<td>To</td>
<td>6502</td>
<td>Specify the last number in the range of devices to be configured.</td>
</tr>
</tbody>
</table>
Figure 5-23 displays the devices that will be synchronized with CUCM.

Note

Figure 5-23 shows an example where an existing Queue Location has already been synchronized. This does not need to be done at this stage, and therefore the screen may appear without Queue Information. Managing the Queues is explained in a section later in this document (Queue Management, page 5-35).

The following table gives a brief description for the fields mentioned in the form displayed above,

Table 5-12 provides description for the fields shown on the Synchronize with CUCM page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device DN</td>
<td>2000</td>
<td>This field specifies the directory number of each configured device.</td>
</tr>
<tr>
<td>Device Type</td>
<td>CTI Route Point</td>
<td>This field specifies the type of device.</td>
</tr>
</tbody>
</table>
Once the synchronization has been initialized, you can click on **CUCM Sync Report** to view the status of synchronization. This will confirm that all devices have been created and assigned to the End User Profile.

*Figure 5-24* displays the **CUCM Sync Report generated after the CUCM synchronization**

<table>
<thead>
<tr>
<th>CUCM Sync Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sync Status</strong></td>
</tr>
<tr>
<td>Status: Completed</td>
</tr>
<tr>
<td>Ended at: 2007-04-12 16:10:22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CUCM Connection Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User Name</strong></td>
</tr>
<tr>
<td>username1</td>
</tr>
</tbody>
</table>

The following table explains the fields shown in the image above.

*Table 5-13* provides description for the fields mentioned on the **CUCM Sync Report**

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sync Status</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Status | Completed | This field specifies whether the synchronization was successful or not. The following statuses can be viewed,  
**In Progress** - This is displayed when the synchronization is taking place.  
**Completed** - This is displayed when synchronization is completed without any error.  
**Error** - This is displayed when synchronization process encounters an error. |
| Started At | 2007-04-12 16:08:52 | This field specifies the date and time when CUCM synchronization started. |
| Ended At | 2007-04-12 16:08:52 | This field specifies the date and time when CUCM synchronization ended. |

**CUCM Connection Validation**

| User Name | username1 | This specifies the CUCM end user profile ID. |
| Status | Completed | This specifies whether the CUCM Connection established or not. |
| Error Code | 9400 | This field specifies the code of the error that has been encountered. The error codes have been explained in detail in the next table. |
Table 5-13 provides description for the fields mentioned on the CUCM Sync Report

<table>
<thead>
<tr>
<th>Field</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error Description</td>
<td>HTTP/1.1 503 Service Unavailable</td>
<td>This field gives a brief description of the error that has been encountered.</td>
</tr>
</tbody>
</table>

**Device Sync**

<table>
<thead>
<tr>
<th>Device DN</th>
<th>6101</th>
<th>This field specifies the number of the device being synchronized.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Type</td>
<td>Queue Location</td>
<td>This field specifies the type of device being synchronized.</td>
</tr>
<tr>
<td>Status</td>
<td>Completed</td>
<td>This field specifies the status of the device synchronization.</td>
</tr>
<tr>
<td>Error Code</td>
<td>9550</td>
<td>This field specifies the error code in case an error encountered synchronizing a device.</td>
</tr>
<tr>
<td>Error Description</td>
<td>HTTP/1.1 403 Access to the requested resource has been denied</td>
<td>This field specifies the description of the error.</td>
</tr>
</tbody>
</table>

The table below gives a list of error codes and description that may be encountered during CUCM synchronization.

Table 5-14 provides error codes that may be displayed in the CUCM Sync Report

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AXL Errors</strong></td>
<td></td>
</tr>
<tr>
<td>Less than 5000</td>
<td>These are errors that directly correspond to DBL Exception error codes.</td>
</tr>
<tr>
<td>5000</td>
<td>Unknown Error—An unknown error occurred while processing the request. This can be due to a problem on the server, but can also be caused by errors in the request.</td>
</tr>
<tr>
<td>5002</td>
<td>Unknown Request Error—This error occurs if the user agent Saves a request that is unknown to the API.</td>
</tr>
<tr>
<td>5003</td>
<td>Invalid Value Exception—This error occurs if an invalid value is detected in the XML request.</td>
</tr>
<tr>
<td>5004</td>
<td>AXL Unavailable Exception—This error occurs if the AXL service is too busy to handle the request at that time. The request should be sent again at a later time.</td>
</tr>
</tbody>
</table>
Table 5-14  provides error codes that may be displayed in the CUCM Sync Report

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5005</td>
<td>Unexpected Node Exception—This error occurs if the server encounters an unexpected element. For example, if the server expects the next node to be <code>&lt;name&gt;</code>, but encounters <code>&lt;protocol&gt;</code>, then this error is returned. These errors are always caused by malformed requests that do not adhere to the latest AXL Schema.</td>
</tr>
<tr>
<td>-239</td>
<td>Duplicate value in a UNIQUE INDEX column - This error occurs if the device being synchronized already exists in CUCM.</td>
</tr>
<tr>
<td>9000</td>
<td>Exception in AXL component - This error occurs if the device being synchronized already exists in CUCM.</td>
</tr>
<tr>
<td>9200</td>
<td>Device already created - This error occurs if the device being synchronized already exists in CUCM.</td>
</tr>
<tr>
<td>9300</td>
<td>Template device not found - This error occurs if the template device that you have selected to copy all device properties from does not exist.</td>
</tr>
<tr>
<td>9400</td>
<td>HTTP/1.1 503 Service Unavailable - This error is encountered when the CUCM limit for input through AXL exceeds.</td>
</tr>
<tr>
<td>9500</td>
<td>HTTP/1.1 401 Unauthorized - This error occurs due to problems in user authentication.</td>
</tr>
<tr>
<td>9550</td>
<td>HTTP/1.1 403 Access to the requested resource has been denied - This error occurs when access to a device is denied.</td>
</tr>
<tr>
<td>9600</td>
<td>CallManager OS not recognized - This error occurs when access to CUCM is denied.</td>
</tr>
<tr>
<td>9650</td>
<td>CallManager Version not detected - This error occurs when access to CUCM is denied.</td>
</tr>
<tr>
<td>9700</td>
<td>Socket error - This error occurs due to network problems.</td>
</tr>
<tr>
<td>9750</td>
<td>Connection refused - This error occurs due to network problems.</td>
</tr>
<tr>
<td>9755</td>
<td>Read Timeout - This error occurs due to network problems.</td>
</tr>
<tr>
<td>10000</td>
<td>Connection timeout - This error occurs due to network problems.</td>
</tr>
<tr>
<td>9900</td>
<td>An unknown error occurred - This is an unknown error.</td>
</tr>
</tbody>
</table>
### Directory Filtering

This section provides a list of teams and the departments they belong to. The Directory Filtering web page allows you to filter the teams in order to facilitate synchronization of contact details from Cisco Unified Attendant Console database with Cisco Unified Communications Manager via AXL API. You can select a team and view or edit the following information:

- **Team**: This field displays the name of the team. This information cannot be changed.
- **Department**: This field specifies the name of the department. You can update the department name through this page.
- **Maximum Imported Records**: This field is used to specify the maximum number of contacts that can be imported for a particular team through LDAP.

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

**Step 2** In the Team Filtering section, select a team that you wish to modify.

**Figure 5-25** displays a grid displaying the teams, department and Maximum Imported Records

![Directory Filtering grid](image)

**Step 3** Edit the information for the selected team.

**Figure 5-26** displays the information that can be edited

![Directory Filtering form](image)

The department name that you enter in the Department field shown above, can be searched on exact match as well as pattern match basis. If you enter an exact name (for example, New Department) in the field, the contacts will be synchronized for the particular department name entered.
The pattern match is based on wildcard. The following symbols are used to support wildcard.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>Used to match any single character.</td>
</tr>
<tr>
<td>_</td>
<td>Used to match zero or more characters.</td>
</tr>
<tr>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>

If you enter a pattern in the Department field (for example, *Department?), the contacts will be synchronized for all the departments that have names following the pattern entered in the field (in this case, New Department1, Sales Department3).

**Step 4** Once you have configured directory synchronization, click Submit would save the changes.

---

### Directory Synchronization

The Directory Synchronization web page provides the ability to synchronize the contact details for the Cisco Unified Business/Department Attendant Console database with Cisco Unified Communications Manager via AXL API. The page has been divided into following sections,

- **Directory Import**: In order to enable directory import, you must check the Enable contact synchronization checkbox. Auto Synchronization and Schedule Settings fields will remain disabled if you do not select the Enable contact synchronization option.

- **Auto Synchronization**: You can set preferences for automatic synchronization. The following options are available to do so,
  - **On start-up**: If this checkbox is checked then the synchronization is started when Cisco Unified Business/Department Attendant Server starts.
  - **On reconnect**: If this checkbox is selected then the synchronization will start when Cisco Unified Business/Department Attendant Server reconnects with the LDAP plug-in following a loss of connection.

- **Route Partition**: This option is used to select a specific Route Partition. Select from either CUCM (None), (None) or choose a specific partition if available. This will prioritize which DN to import when identical DN’s in different partitions are copied over.

  There are two default settings:
  - **CUCM (none)** - In the CUCM if a Device has been specified as (None) then selecting CUCM (none) within the Web Admin will pick up only these devices.
  - **(none)** - If (none) is selected in the Web Admin, this will disregard the route partition field as a selection criteria when the directory is synchronized.

- **Schedule Settings**: This section requires information on the scheduling of the synchronization. You must enter the following information,
  - **Type**: This is an option list. The synchronization will take place on the basis of the type selected. It has the following options,
    - None
    - Hourly
iii. Daily
iv. Weekly
v. Monthly

- **Every [(Number)(Type)]:** The caption for this option changes with the selection of the *Type.* For example, Every 2 *Week(s)* or Every 1 *Day(s).*
- **Start date:** This field is used to specify a date to start the synchronization.
- **Start time:** This field is used to specify the time to start the synchronization.

To configure directory synchronization for Cisco Unified Business/Department Attendant Console,

---

**Step 1** Go to *System Configuration > Directory Synchronization.*

**Step 2** Enter specifications for the above-mentioned sections.

**Step 3** Once you have configured directory synchronization, click **Save** would save the changes.
---

The following image shows the configurations you can set using the above-mentioned procedure.
Figure 5-27 **displays the settings for Directory Synchronization**

**Directory Synchronization**

- **Directory Import**
  - [ ] Enable contact synchronization

- **Auto Synchronization**
  - [ ] On start-up
  - [ ] On reconnect

- **Route Partition**
  - Select a route partition: 

- **Schedule Settings**
  - Type: Hourly
  - Every: 1 Hour(s)

  - Start date: 2009 - 02 - 05 (YYYY-MM-DD)
  - Start time: 14 : 25 : 13 (HH:MM:SS)

  - SAVE

---

**Directory Rules (for Cisco Unified Business Attendant Console only)**

This web page is used to manage rules that are used to filter the LDAP information coming from the Cisco CallManager database to the Cisco Unified Business Attendant Server.

**Tip**

Multiple rules can be created, each with a separate filter then the import will use each one separately, using an ‘OR’ i.e. Rule 1 is lastname = T* and Rule 2 is Department = Product. The result will be an import that includes all people with a last name beginning with T and all people that are in the product team.

If you create multiple filters within a single rule then an ‘AND’ is used. i.e. lastname = T* Department = Product, will result in all people in the Product team that have a last name starting with T

The table is broken into a selection column, a Rule Name and a Filter Counter.
Figure 5-28 displays the Directory Rules

To Add a Directory Rule

Step 1 Go to System Configuration > Directory Rules.
Step 2 Click on Add New.
Step 3 On the RuleFilter Information, select a Source field from the dropdown selection.
Step 4 Select an Operator from the drop down selection. The selection includes Equal (=), Approx_Equal (like), Less_Equal (<=), Greater_Equal (>=).
Step 5 Enter a default value which will be entered if the original Source field is empty.
Step 6 Click Save to save the changes.

The following image shows the Rule Filter Information screen when a field is added.

Figure 5-29 displays the Directory Rules - Rule Filter Information

User Configuration

The User Configuration section provides administrators with facilities to manage Cisco Unified Business/Department Attendant Console configuration. These include,

- General Properties
- Queue Management
- Operator Management
General Properties

This web page manages the global configuration for Cisco Unified Business/Department Attendant Console. It has been divided into four sections,

1. **Internal/External Access**: These settings allow Cisco Unified Business/Department Attendant Console to distinguish between internal and external calls. They also ensure that the correct digit is used that allows you to access an external line. The fields required here are,

   - **Minimum internal device digit length**: This text box requires you to enter the minimum number of digits being used for an internal device.
   - **Maximum internal device digit length**: This text box requires you to enter the maximum number of digits being used for an internal device.

   **Note**
   The default setting for this is 4 digits. If your Internal Extension Numbers exceed this it will require changing to accommodate this. This can be set to manage an internal device with a number of up to 24 digits.

   - **External access number**: This field specifies the access number when making a call to an external number.
   - **External international access number**: This is the number that is to be dialled when making a call to an international external number.
   - **External area code**: This field represents the Country Code for where the CUCM is located. When a call is dialled out by the system and the number string is determined to be in a standard international format i.e +44 (0) 208 8241000, the Area code set here will determine if the call is dialled as an international call or a domestic call. In this example an Area Code of 44 would result in a domestic call being dialled.

2. **Default FAC and CMC Settings**: If Forced Authorization (FAC) and/or Client Matter Codes (CMC) are configured in CUCM then these may be needed for any Attendant calls or transfers to be made. The codes entered here are generic and will be used in certain situations that require the system to place these calls or transfers. An example would be a blind transfer where the final outbound call is made from a Service Queue CTI port. If a call or transfer is made which results in the call being made from the operator’s handset externally, then the operator will be presented with a CFAC or CMC dialog box, requiring them to manually enter the code from their application.

3. **Recall Timers**: This area is used for setting the time duration for the recall activity of the calls. You can update three types of timers for the calls. These are as follows,

   - **Hold recall**: This is the maximum time limit a call can be put on hold by an operator.
   - **Transfer recall**: When an operator transfers a call, and if the call is not received within the time period specified in the Transfer recall field, it will come back to the same operator who had transferred the call.
   - **Park recall**: When an operator parks a call, and if the call is not received within the time period specified in the Park recall field, it will come back to the same operator who had parked the call.
   - **Camp On recall**: When an operator transfers a call to an extension that is busy, the Operator can put that call on Camp On. The Call will wait for that extension to be free for the time as set in 'Camp on Recall' Timer. After that time call returns back to the Operator.

4. **Working Days**: This section allows you to set specific days and hours when the Attendant Console queues will be active. You must specify the following fields,

   - The checkboxes provided allow you to select the days the queues are active.
You must also enter the Working hours from time and Working hours to time in order to specify the time period that the queues will be active during these working 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. This scenario could be managed by using No Operator Overflow which can be found in User Configuration > Queue Management. This would provide the facility to push calls to a specific extension if No Operators are logged into the queue. This does not apply to a queue where an operator is unavailable, i.e. busy with a call.

To configure General Properties,

**Step 1**

Go to User Configuration > General Properties.

**Figure 5-30** displays menu option for General Properties

![Menu Option](image)

**Step 2**

Enter specifications for the above-mentioned sections.

**Step 3**

Once you have configured the general properties, click **Save** to save the changes.

The following image shows the General Properties page used to configure Cisco Unified Business/Department Attendant Console.
Figure 5-31 displays the setting made on the General Properties page

### General Properties
- Internal/External Access
  - Minimum internal device digit length: 1
  - Maximum internal device digit length: 24
- External access number:
- External international access number:
- External area code:

### Default FAC and CMC Settings
- Forced authorization code (FAC):
- Client matter code (CCMC):

### Recall Timers
- Hold recall (sec)*: 30
- Transfer recall (sec)*: 30
- Park recall (sec)*: 30
- Camp On recall (sec)*: 30

### Working Days
- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

Working hours from time: 09:00:00 [HH:MM:SS]
Working hours to time: 17:30:00 [HH:MM:SS]

---

**Queue Management**

The *Queue Management* web page allows you to manage the configuration for existing queues.

To find a Queue,

**Step 1** Go to *User Configuration > Queue Management*.

**Step 2** To find a queue using the filter options. Select either Name or DDI, then enter search criteria option and then the specific criteria. This criteria is broken into the following entities

- Queue type: Name and DDI number.
- Search criteria e.g. Begins with, Contains, Ends with, etc.
- Specific criteria: a variable to search.
- There is also facility by using the to add additional search criteria. This would be used to narrow the search.

**Step 3** Click on *Find* to run the Query.
Figure 5-32  displays the Queue Management screen.

The configuration is divided into four sections,

1. **General**: This section allows you to configure the general attributes of a queue. The following fields can be edited in this section,
   - **Name**: (for Cisco Unified Business Attendant Console) This field specifies the name of the queue.
   - **Team**: (for Cisco Unified Department Attendant Console) This field specifies the name of the Team.
   - **DDI**: This is the number that is dialled internally to reach the respective queue session. External calls must be routed to this DN to reach the queue.
   - **Priority**: (for Cisco Unified Business Attendant Console) This field specifies the name of the queue. You can assign a priority number to a queue that determines which queue must be given priority when calls are being routed.

2. **Emergency**: (for Cisco Unified Business Attendant Console) This field specifies the name of the queue. The Emergency number field allows you to specify a number in case the calls need to be forwarded to another number in the event of sudden need.

3. **Overflow**: In case the number of calls waiting exceeds the number of calls that are allowed to wait in a queue, an overflow occurs. This section allows you to manage such overflow by configuring the following fields,
   - **Overflow number**: In case of an overflow the exceeding number of calls will be transferred to the number specified in this field.
   - **Maximum calls**: This field allows you to set the total number of calls that can wait in a Queue at any given time.
   - **No operator overflow**: If there is no operator logged in to this selected queue, an incoming call will be immediately routed to the Overflow number if this checkbox is selected.

4. **Night Service**: (for Cisco Unified Business Attendant Console) This field specifies the name of the queue. This section allows you to specify a Night service number. The calls made outside of the days and time specified for working day, are routed to this number.

To manage queues,

**Step 1**  Go to User Configuration > Queue Management.
Figure 5-33 displays the menu option for Queue Management

- **Step 2** Select the queue profile that needs to be modified. Once the queue is selected, the form will be automatically loaded with the queue configuration.
- **Step 3** Edit the specifications for the above-mentioned sections.
- **Step 4** Once you have modified the configuration, click **Save** to save the changes.
- **Step 5** Click **Synchronize with CUCM** will redirect to Synchronizing with CUCM page.

The following image shows the Queue Management page used to configure Cisco Unified Business/Department Attendant Console.
Figure 5-34 displays the Queue Management page for Cisco Unified Attendant Console.

<table>
<thead>
<tr>
<th>Queue Management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> QUEUE 1</td>
<td></td>
</tr>
<tr>
<td><strong>Priority:</strong> 99</td>
<td></td>
</tr>
<tr>
<td><strong>Overflow number:</strong> 8550</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency number:</strong> 5444</td>
<td></td>
</tr>
<tr>
<td><strong>Night Service number:</strong> 5600</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum calls:</strong> 11</td>
<td>(0-255, 0 = Disabled)</td>
</tr>
<tr>
<td><strong>No operator overflow</strong></td>
<td></td>
</tr>
</tbody>
</table>
Figure 5-35 displays the Queue Management page for Cisco Unified Business Attendant Console.

<table>
<thead>
<tr>
<th>Queue Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
</tr>
<tr>
<td>Name:* QUEUE 1</td>
</tr>
<tr>
<td>Dialer: 5211</td>
</tr>
<tr>
<td>Priority: 99</td>
</tr>
<tr>
<td>Solution:</td>
</tr>
</tbody>
</table>

| **Emergency**      |
| Emergency number:  5444 |

| **Overflow**       |
| Overflow number:   5500 |
| Maximum calls:     11   (0-225, 0 = Disabled) |
| No operator overflow |

| **Night Service**  |
| Night service number: 5600 |

Submit  Synchronize with CUCM
Operator Management

The Operator Management web page allows you to manage the configuration for the operator profile. This includes associating Queues to the operator profile.

To manage operators,

**Step 1** Select User Configuration > Operator Management.

**Figure 5-37** displays the menu option for Operator Management

**Step 2** Select the operator profile that needs to be modified. To use the find option enter the following criteria,

- Login Name.
- Search criteria e.g. Begins with, Contains, Ends with, etc.
- Specific criteria: The variable to search.
- There is also facility by using the \[ \text{\( \rightarrow \)} \] to add additional search criterias. This would be used to narrow the search.

**Step 3** Click on \textit{Find} to run the Query.

**Step 4** Once an operator profile is selected, the form will be automatically loaded with the operators profile information.

**Step 5** Edit \textit{Login name}.

**Step 6** Change \textit{Password}.

**Step 7** Re-enter password to confirm in the \textit{Confirm password} field.

**Step 8** Click \text{\( \rightarrow \)} \textit{Save} to save changes.

**Step 9** Click \text{\( \rightarrow \)} \textit{Reset password} to reset the user password to be the same as the operator’s login name.

The following image shows the \textit{Operator Management} page used to configure Cisco Unified Business/Department Attendant Console.

**Figure 5-38 displays Operator Management page**

To Associate Queues to an operators profile,

**Step 1** Select \textit{User Configuration} \( \rightarrow \) \textit{Operator Management}.

**Step 2** Select the operator profile that needs to be modified. To use the \textit{find} option enter the following criteria,

- Login Name.
- Search criteria e.g. Begins with, Contains, Ends with, etc.
- Specific criteria: The variable to search.
- There is also facility by using the \[ \text{\( \rightarrow \)} \] to add additional search criterias. This would be used to narrow the search.

**Step 3** Click on \textit{Find} to run the Query.

**Step 4** Once an operator profile is selected, the form will be automatically loaded with the operators profile information.

If any Queues have been associated, they will be listed in the Associated Queues dialogue box.

**Step 5** To Add to that list, or create an association, click on \textit{Queue Association}.
Chapter 5 Cisco Unified Business/Department Attendant Console Admin

User Configuration

A new screen will appear where you can select any Queues that need to be associated.

**Figure 5-39 displays Queue Association page**

![Queue Association Page]

There is an option to search for a specific queue if it is not displayed by using either:-

- Queue Name.
- Search criteria e.g. Begins with, Contains, Ends with, etc.
- Specific criteria: The variable to search.
- There is also facility by using the ![Search Criteria] to add additional search criterias. This would be used to narrow the search.

**Step 6** Click on **Find** to run the Query.

**Step 7** Tick the respective Queues that are required to be associated then click on **Save Selected/Changes** to return the operator profile. Click on **Save** to complete the process.
CHAPTER 6

Uninstall Attendant Admin

This section describes in detail how to uninstall the following:

- Cisco Unified Attendant Server
- SQL Server 2008
- BDE
- .Net Framework

Uninstalling Cisco Unified Business/Department Attendant Server

Perform the following steps to uninstall the application:

Procedure

Step 1  Go to Start > Settings > Control Panel > Add/Remove Programs. Shown in Figure 6-1.

Figure 6-1  Displays the Add/Remove Programs Window

Step 2  Select Cisco Unified Business/Department Attendant Server from the list of Programs. Click Remove.
Step 3 The next window that is displayed will show the status of the wizard while the files are being prepared to uninstall the application (Figure 6-2).

Figure 6-2 Displays the Preparing to Install Screen

Step 4 The following message box will appear confirming whether you want to remove Cisco Unified Business/Department Attendant Server from your machine or not (Figure 6-3). Click OK to continue.

Figure 6-3 Displays the Message Box that asks you if you Want to Remove the Application from the System

Step 5 The next window displays the progress of the un-installation (Figure 6-4).

Figure 6-4 Displays the Un-Installation Progress of the Application
Step 6 Once the files have been uninstalled successfully, the next window will ask whether you wish to restart the computer now or later (Figure 6-5). It is recommended that you restart the machine. Click Finish.

Figure 6-5 Displays the Options for Restarting the Machine

Uninstalling MS SQL Server

Once you have uninstalled the application, you are required to remove all the third-party components installed with the application. Therefore we uninstall MS SQL Server as well.

To uninstall the SQL Server, perform the following steps:

Procedure

Step 1 Go to Start > Settings > Control Panel > Add/Remove Programs (Figure 6-6).
Step 2  Select Microsoft SQL Server from the list of Programs. Click **Remove**.

Step 3  The next window will display the list of server instances. Select the instance that you wish to be removed (Figure 6-7).

**Figure 6-7 Displays the Server Instance to be Removed**

Step 4  The next window will display a summary of the components that will be removed (Figure 6-8). Click the **Finish** button to proceed. Click **Back** in case you wish to change any of the information.
Chapter 6      Uninstall Attendant Admin

Uninstalling MS SQL Server

Figure 6-8  Displays the Summary Screen for the Components that need to be Uninstalled

Step 5  In the next window, the status will be displayed for the components removal (Figure 6-9). Click Finish once all the components have been removed.

Figure 6-9  displays the setup progress

Step 6  Once you have uninstalled MS SQL Server, you must delete the following location and the databases within:

C:\DBdata\
Uninstalling BDE Utility

Perform the following steps to uninstall BDE Utility:

Procedure

Step 1  Go to Start > Settings > Control Panel > Add/Remove Programs. This is shown in Figure 6-10.

Figure 6-10  Displays the Add/Remove Programs Window

Step 2  Select BDE Utility from the list of Programs. Click Remove.

Step 3  The next window that is displayed will show the status of the wizard while the files are being prepared to uninstall BDE (Figure 6-11).

Figure 6-11  Displays the Preparing to Install Screen
Step 4  The next message box will confirm whether you wish to remove BDE or not (Figure 6-12). Click OK to continue.

Figure 6-12 Displays the Message Box to Confirm Whether all Features of the BDE Utility need to be Removed or Not

Step 5  The next window will display the setup status and the progress for the features removed (Figure 6-13).

Figure 6-13 Displays the Setup Status for the Uninstallation of the Application

Step 6  Once the BDE Utility has been removed the following screen will appear. (Figure 6-14).

Figure 6-14 Displays the Screen that Shows that the Removal of BDE Utility is Complete
Uninstalling .NET Framework

Perform the following steps to uninstall .NET Framework:

Procedure

Step 1  Go to Start > Settings > Control Panel > Add/Remove Programs. This is shown in Figure 6-15

![Figure 6-15 Displays the Add/Remove Programs Window](image)

Step 2  Select Microsoft .NET Framework 3.5 from the list of Programs. Click Remove.

Step 3  The next window provides you with the option to either repair the installed files or uninstall .NET Framework (Figure 6-16).
Step 4  The next message box will appear confirming if you would like to remove .NET Framework (Figure 6-17). Click OK.

Step 5  The next window will display the setup progress of the components being removed (Figure 6-18).

Step 6  The next window will display that the components have been uninstalled successfully (Figure 6-19). Click Finish.
Uninstalling the Cisco TSP

If there is a requirement to uninstall the Cisco TSP then it is should be done using the instructions found in a file called `ciscotsp.txt`. This file is created when the TSP is installed, and the default location is `C:\Program Files\Cisco`
Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x

An **End User** is required within Cisco Unified Communications Manager to allow Cisco Unified Business/Department Attendant applications to communicate with Cisco Unified Communications Manager via TSP. This user is created in order to:

- Access AXL API
- All CTI related functionalities

The end user profile that is created here is later used to connect to Cisco Unified Communications Manager through Cisco Unified Business/Department Attendant Admin. This end user profile provides you enough roles and privileges to modify or synchronize information. These roles have been explained in the following sections.

Creation of a user involves the following steps:

1. Setting up an End User
2. Creating a User Group with the correct **roles** associated
3. Associating the user with the **User Group**.

These steps have been explained in detail in the following sections.

**Note**
If using Active Directory to Synchronize with the Cisco Unified Communications Manager, the End User profile must exist in AD.

### Setting Up an End User

To set up a new End User, perform the following steps:

**Procedure**

**Step 1**  From Cisco Unified Communications Manager Administration, Choose **User Management > End User** (Figure A-1).
Setting Up an End User

**Figure A-1** Displays User Management Menu Option for End User Configuration

- User Management
- Bulk Admin
- Application User
- End User
- Role
- User Group
- User/Phone Add
- Application User CAPF Profile
- End User CAPF Profile
- SIP Realm

**Step 2** Click the button to add a New User.

**Step 3** Enter information in the following fields (**Figure A-2**). Please note that the fields mentioned below are mandatory.
- User ID
- Password
- Confirm Password
- PIN
- Confirm PIN
- Last Name

**Figure A-2** Displays the End User Configuration Page

- **End User Configuration**
- **Status**
  - Status: Ready
  - **User Information**
    - User ID\(^*\):
      - UserID1
    - Password\(^*\):
      - ****
    - Confirm Password\(^*\):
      - ****
    - PIN\(^*\):
      - ****
    - Confirm PIN\(^*\):
      - ****
    - Last name\(^*\):
      - lastname1

**Step 4** Click **Save** to save the settings for newly created user.
Creating a User Group

Once the user is created, in order to associate it with a group, a new group must also be configured. The User Group will then have Roles assigned to it which govern what can be done using this profile.

To create a new User Group, perform the following steps:

**Procedure**

**Step 1** Choose User Management > User Groups. (Figure A-3)

**Figure A-3** Displays the Menu Option for User Group

<table>
<thead>
<tr>
<th>User Management</th>
<th>Bulk Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application User</td>
<td></td>
</tr>
<tr>
<td>End User</td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td></td>
</tr>
<tr>
<td><strong>User Group</strong></td>
<td></td>
</tr>
<tr>
<td>User/Phone Add</td>
<td></td>
</tr>
<tr>
<td>Application User CAPF Profile</td>
<td></td>
</tr>
<tr>
<td>End User CAPF Profile</td>
<td></td>
</tr>
<tr>
<td>SIP Realm</td>
<td></td>
</tr>
</tbody>
</table>

**Step 2** Click the **+** button to add a new User Group.

**Step 3** Enter Name for the new User Group (Figure A-4).

**Figure A-4** Displays the User Group Configuration Page

**User Group Configuration**

**Status**

Status: Ready

**User Group Information**

Name* [UserGroupName]

**Step 4** Click **Save** to save the settings for newly created User Group.
Appendix A      Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x

Assigning Roles and User to the User Group

To assign roles to the newly created User Group, perform the following steps:

Procedure

Step 1  Choose Back To Find/List > Go or User Management > User Groups.
Step 2  On Find and List User Groups page, search for the user group you created (Figure A-5).

Figure A-5 Displays the Field you may use to Search a User Group

<table>
<thead>
<tr>
<th>Search Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find User Group where Name begins with User/GroupName1 Find</td>
</tr>
</tbody>
</table>

Step 3  In the Search Results, click on the Roles link for the user group.
Step 4  Click Assign Role to Group to find and list roles for assignment.
Step 5  Select the roles that need to be assigned to this group. The following checkboxes must be selected,

- 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

Note Standard CTI Secure Connection should ONLY be enabled if required, as it may affect the operation of the server that is not using CTI secure connections.

Note Standard CTI Allow Control of Phones supporting Rollover Mode and Standard CTI Allow Control of Phones supporting Connected Xfer and conf have to be enabled for use with environments using phone models 69xx, 7931, 7965, 89xx and 99xx. This is only available from Cisco Unified Communications Manager 7.1.2 onwards.

Step 6  Click Add Selected to assign roles.
Step 7  Click Save.

To add the End User to the User Group, perform the following steps:

Procedure

Step 1  Choose User Management > User Groups.
Step 2  Click the newly created User Group.
Step 3  Click Add End Users to the Group to find and list the users (Figure A-6).
Adding the End User to CCM Super Users group

The standard CCM Super Users user group represents a named user group that always has full access permission to all named roles. You cannot delete this user group. You can only make additions and deletions of users to this group.

After you have added the user to the newly created group, you must also add this user to the Standard CCM Super User group.

To add the user to Standard Super CCM User, perform the following steps:

Procedure

Step 1  Choose User Management > User Groups.

Step 2  Find Standard Super CCM User using the search field (Figure A-8).
Appendix A  Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x

Configuring Access for the Cisco Unified Attendant CUPS Plug-In

Step 3  In the Search Results, Click **Standard Super CCM Users** (Figure A-9).

**Figure A-9 Displays the Search Result for the User Group**

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard CCM Super User</td>
</tr>
</tbody>
</table>

Step 4  Click **Add End Users to the Group** to find and list the users.

Step 5  Select the newly created End user from the list and click **Add Selected** to successfully add the user to this group (Figure A-10).

**Figure A-10 Displays the Selected Search Result that is to be Added to the User Group**

**Configuring Access for the Cisco Unified Attendant CUPS Plug-In**

It is important that the Cisco Unified Business/Department Attendant Server Address is added to the firewall information on the CUPs Server, perform the following steps:

**Procedure**

Step 1  To do this go to Cisco Unified Presence menu, and select **System > Security** and **Incoming ACL** (Access Control List) (Figure A-11)
Appendix A      Creating the Attendant Application End User for Cisco Unified Communications Manager 7.x

Configuring Access for the Cisco Unified Attendant CUPS Plug-In

Figure A-11 Displays Accessing the Cisco Unified Presence Security, Incoming ACL Menu.

The page Find and List Allowed Incoming Hosts will be displayed (Figure A-12).

Figure A-12 Displays Find and List Allowed Incoming Hosts Page

Step 2  Click on Add New and enter the Description and Address Pattern (Figure A-13).
Step 3  Click on **Save**.

Step 4  Confirm the address and description have been added.
TAPI Configuration for CUCM 7.0

Note
If you upgrade your Cisco Unified Communication Manager, you will have to uninstall the previous TSP, and install the TSP that is current to the new version of Cisco Unified Communication Manager. Both of these processes are covered in this Appendix.

You must install Cisco Telephony Service Provider (TSP) on the machine that will run the Cisco Unified Business/Department Attendant Server. This allows the Server to communicate with Cisco Unified Communications Manager CTI Manager service to allow call control on all devices associated to the End User profile created for the Server.

Installing the TAPI TSP

To install the Cisco TSP you must follow the steps mentioned below.

The installation of the Cisco Unified Business/Department Attendant Console will download the TSP installation file to the Desktop of the server machine.

To manually download the Cisco TSP, perform the following steps:

Procedure

Step 1 On the Server machine browse to Cisco Unified Communications Manager Administration. Select Application > Plugins. (Figure B-1)

Figure B-1 Displays the Menu Option for Plugins

<table>
<thead>
<tr>
<th>Application ▼</th>
<th>User Management ▼</th>
<th>Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco IPMA Configuration Wizard</td>
<td>Cisco Unified CM Attendant Console ▼</td>
<td>Plugins</td>
</tr>
</tbody>
</table>

Step 2 Find Cisco Telephony Service Provider using the search field (Figure B-2).
Configuring the TAPI TSP

To configure TSP, perform the following steps:

Procedure

Step 1 Go to Start > Settings > Control Panel > Phone and Modem Options.
Step 2 Select Advanced tab.
Step 3 Select CiscoTSP001.tsp
Step 4 Click Configure, and select the User tab (Figure B-4).
Step 5 Enter the End User ID of the user that was created for the CallManager earlier in the User Name field.
Step 6 Enter the password of the user in the Password field, and verify the Password.
Step 7  Select the CTI Manager tab (Figure B-5).

### Figure B-5  Displays the CTI Manager Information to be Entered for the TAPI Configuration

<table>
<thead>
<tr>
<th>Cisco Unified CallManager TSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>User Name:</td>
</tr>
<tr>
<td>Password:</td>
</tr>
<tr>
<td>Verify Password:</td>
</tr>
<tr>
<td>Primary CTI Manager Location</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Local Host</td>
</tr>
<tr>
<td>IP Address:</td>
</tr>
<tr>
<td>Host Name:</td>
</tr>
<tr>
<td>Backup CTI Manager Location</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td>Local Host</td>
</tr>
<tr>
<td>IP Address:</td>
</tr>
<tr>
<td>Host Name:</td>
</tr>
</tbody>
</table>

Step 8  Enter the Name or IP Address of the CTI Manager that you require to obtain your TAPI information from. A second CTI Manager can be used for resilience if required and available.

---

**Note** CTI Manager is a service that runs on each of the CUCM Nodes within a cluster. It is recommended that the primary CTI Manager points to the publisher CUCM and the backup on one of those subscriptions.

Step 9  Select the Wave tab (Figure B-6).

Step 10 Enter the number of desired Voice Lines. You must enter a value that will allow all of your CTI Ports being monitored by this TSP in this field. You may want to add a higher figure at this point for future expansion of ports.
Installing the Cisco TAPI Wave Driver

The following instructions are also in the Cisco TSP readme file located in C:\Program Files\Cisco\ciscotsp.txt and relate to installation on a Windows 2003 Server.

Step 1 From Control Panel execute the Add Hardware utility. Click the Next button.
Step 2 Select Yes, I have already connected the hardware Radio button. Click Next.
Step 3 Select Add a new Hardware device from the list. Click the Next button.
Step 4 Select Install the hardware that I manually select from a list radio button. Click the Next button.
Step 5 Select Sound, video and game controller when prompted for hardware type. Click the Next button.
Step 6  Click the Have Disk button when prompted to Select a Device Driver. Click the Browse button on the Install from Disk window. Browse to C:\Program Files\Cisco\Wave Drivers and select the file OEMSETUP.

Step 7  Click Open to install the Cisco Wave Driver and select OK.

Step 8  Highlight the Cisco TAPI Wave Driver in Select a Device Driver window and select Next. Select Next in Start Hardware Installation window.

Step 9  If Prompted for Digital signature Not Found click on Continue Anyway button.

        When prompted for Install from disk 1 for file avaudio32.dll, choose Browse button and select path C:\Program Files\Cisco\Wave Drivers and click Open to install the avaudio32.dll.

Step 10 You will be prompted to reboot the server. Do so.

Step 11 TAPI has now been successfully installed.

Uninstalling the Cisco TSP

If there is a requirement to uninstall the Cisco TSP then it is should be done using the instructions found in a file called ciscotsp.txt. This file is created when the TSP is installed, and the default location is C:\Program Files\Cisco
Uninstalling the Cisco TSP
Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x

An End User is required within Cisco Unified Communications Manager to allow Cisco Unified Business/Department Attendant applications to communicate with Cisco Unified Communications Manager via TSP. This user is created in order to:

- Access AXL API
- All CTI related functionalities

The end user profile that is created here is later used to connect to Cisco Unified Communications Manager through Cisco Unified Business/Department Attendant Admin. This end user profile provides you enough roles and privileges to modify or synchronize information. These roles have been explained in the following sections.

Creation of a user involves the following steps:

1. Setting up an End User
2. Creating a User Group with the correct roles associated
3. Associating the user with the User Group.

These steps have been explained in detail in the following sections.

Note
If using Active Directory to Synchronize with the Cisco Unified Communications Manager, the End User profile must exist in AD.

Setting Up an End User

To set up a new End User, perform the following steps:

Procedure

Step 1 From Cisco Unified Communications Manager Administration, Choose User Management > End User (Figure C-1).
Figure C-1 Displays User Management Menu Option for End User Configuration

Step 2 Click the button to add a New User.

Step 3 Enter information in the following fields (Figure C-2). Please note that the fields mentioned below are mandatory.

- User ID
- Password
- Confirm Password
- PIN
- Confirm PIN
- Last Name

Figure C-2 Displays the End User Configuration Page

Step 4 Click the button to save the settings for newly created user.
Creating a User Group

Once the user is created, in order to associate it with a group, a new group must also be configured. The User Group will then have Roles assigned to it which govern what can be done using this profile.

To create a new User Group, perform the following steps:

Procedure

Step 1 Choose User Management > User Groups. (Figure C-3)

Figure C-3 Displays the Menu Option for User Group

<table>
<thead>
<tr>
<th>User Management</th>
<th>Bulk Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application User</td>
<td></td>
</tr>
<tr>
<td>End User</td>
<td></td>
</tr>
<tr>
<td>Role</td>
<td></td>
</tr>
<tr>
<td><strong>User Group</strong></td>
<td></td>
</tr>
<tr>
<td>User/Phone Add</td>
<td></td>
</tr>
<tr>
<td>Application User CAFF Profile</td>
<td></td>
</tr>
<tr>
<td>End User CAFF Profile</td>
<td></td>
</tr>
<tr>
<td>SIP Realm</td>
<td></td>
</tr>
</tbody>
</table>

Step 2 Click the button to add a new User Group.

Step 3 Enter Name for the new User Group (Figure C-4).

Figure C-4 Displays the User Group Configuration Page

**User Group Configuration**

**Status**

Status: Ready

**User Group Information**

Name [UserGroupName]

Step 4 Click **Save** to save the settings for newly created User Group.
Assigning Roles and User to the User Group

To assign roles to the newly created User Group, perform the following steps:

Procedure

Step 1  Choose **Back To Find/List > Go** or **User Management > User Groups**.

Step 2  On **Find and List User Groups** page, search for the user group you created (**Figure C-5**).

**Figure C-5**  Displays the Field you may use to Search a User Group

<table>
<thead>
<tr>
<th>Search Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find User Group where Name begins with [UserGroupName1] [Find]</td>
</tr>
</tbody>
</table>

Step 3  In the **Search Results**, click on the **Roles** link for the user group.

Step 4  Click **Assign Role to Group** to find and list roles for assignment.

Step 5  Select the roles that need to be assigned to this group. The following checkboxes must be selected,

- 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

**Note** Standard CTI Secure Connection should ONLY be enabled if required, as it may affect the operation of the server that is not using CTI secure connections.

**Note** Standard CTI Allow Control of Phones supporting Rollover Mode and Standard CTI Allow Control of Phones supporting Connected Xfer and conf have to be enabled for use with environments using phone models 69xx, 7931, 7965, 89xx and 99xx. This is only available from Cisco Unified Communications Manager 7.1.2 onwards.

Step 6  Click **Add Selected** to assign roles.

Step 7  Click **Save**.

To add the End User to the User Group, perform the following steps:

Procedure

Step 1  Choose **User Management > User Groups**.

Step 2  Click the newly created User Group.

Step 3  Click **Add End Users to the Group** to find and list the users (**Figure C-6**).
Adding the End User to CCM Super Users group

The standard CCM Super Users user group represents a named user group that always has full access permission to all named roles. You cannot delete this user group. You can only make additions and deletions of users to this group.

After you have added the user to the newly created group, you must also add this user to the Standard CCM Super User group.

To add the user to Standard Super CCM User, perform the following steps:

Procedure

Step 1 Choose User Management > User Groups.

Step 2 Find Standard Super CCM User using the search field (Figure C-8).
Appendix C      Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x

Configuring Access for the Cisco Unified Attendant CUPS Plug-In

It is important that the Cisco Unified Business/Department Attendant Server Address is added to the firewall information on the CUPs Server, perform the following steps:

Procedure

Step 1 To do this go to Cisco Unified Presence menu, and select System > Security and Incoming ACL (Access Control List) (Figure C-11)

Figure C-8 Displays the Search Option you may use to Find and List User Group

<table>
<thead>
<tr>
<th>Search Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find User Group where begins with Standard CCM Super User Find</td>
</tr>
</tbody>
</table>

Step 3 In the Search Results, Click Standard Super CCM Users (Figure C-9).

Figure C-9 Displays the Search Result for the User Group

<table>
<thead>
<tr>
<th>Search Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Standard CCM Super Users</td>
</tr>
</tbody>
</table>

Step 4 Click Add End Users to the Group to find and list the users.

Step 5 Select the newly created End user from the list and click Add Selected to successfully add the user to this group (Figure C-10).

Figure C-10 Displays the Selected Search Result that is to be Added to the User Group

<table>
<thead>
<tr>
<th>Search Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find User where UserID begins with UserID1 Find</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>User ID</td>
</tr>
<tr>
<td>UserID1</td>
</tr>
</tbody>
</table>

Add Selected

Configuring Access for the Cisco Unified Attendant CUPS Plug-In

It is important that the Cisco Unified Business/Department Attendant Server Address is added to the firewall information on the CUPs Server, perform the following steps:

Procedure

Step 1 To do this go to Cisco Unified Presence menu, and select System > Security and Incoming ACL (Access Control List) (Figure C-11)
Appendix C  Creating the Attendant Application End User for Cisco Unified Communications Manager 8.x

Configuring Access for the Cisco Unified Attendant CUPS Plug-In

Figure C-11  Displays Accessing the Cisco Unified Presence Security, Incoming ACL Menu.

The page **Find and List Allowed Incoming Hosts** will be displayed (Figure C-12).

Figure C-12  Displays Find and List Allowed Incoming Hosts Page

**Step 2**  Click on **Add New** and enter the **Description** and **Address Pattern** (Figure C-13).
Figure C-13 Displays Incoming Access Control List Configuration Page

Step 3  Click on Save.
Step 4  Confirm the address and description have been added.
TAPI Configuration for CUCM 8.0

Note
If you upgrade your Cisco Unified Communication Manager, you will have to uninstall the previous TSP, and install the TSP that is current to the new version of Cisco Unified Communication Manager. Both of these processes are covered in this Appendix.

The Cisco Telephony Service Provider (TSP) is installed and configured automatically on the machine that will run the Cisco Unified Business/Department Attendant Server during the installation process when connected to Cisco Unified Communications Manager 8.0. This allows the Server to communicate with Cisco Unified Communications Manager CTI Manager service to allow call control on all devices associated to the End User profile created for the Server.

There may be occasions when there is a requirement to install and configure the TAPI TSP manually, and the following section will outline this process.

Manually Installing the TAPI TSP

Note
This process is only required if you need to manually install the Cisco TAPI TSP, normally this process is automated and happens during the installation of the Cisco Unified Business/Department Attendant Server.

To install the Cisco TSP you must follow the steps mentioned below.

The installation of the Cisco Unified Business/Department Attendant Console will download the TSP installation file to the Desktop of the server machine.

To manually download the Cisco TSP, perform the following steps:

Procedure

Step 1
On the Server machine browse to Cisco Unified Communications Manager Administration. Select Application > Plugins. (Figure D-1)
Manually Installing the TAPI TSP

Step 2  Find Cisco Telephony Service Provider using the search field (Figure D-2).

Figure D-2 Displays the Search Option to Find and List the Required Plugin

Find and List Plugins

<table>
<thead>
<tr>
<th>Search Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Plugin where Plugin and Plugin Type equals Cisco Telephony Service Provider.</td>
</tr>
</tbody>
</table>

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 the desktop and follow the on screen instructions to complete the install.

Step 6  During the installation, you will be asked if you want to install multiple instances of TSP (Figure D-3). Click No. You can also select the Destination Folder to install the TSP.

Figure D-3 Displays the Message Box Confirming whether Multiple Instances for TSP are to be Installed or Not

Step 7  Enter the End User ID of the user that was created for the CallManager and Password (including verifying the Password) required. Enter the IP Address of the CTI Manager. Click on Next.
Manually Installing the TAPI TSP

Step 8  Select Use New Cisco Media Driver and enter the ports 50000 to 51019. Click on Next.

Step 9  A window will display the progress of the installation.
Manually Configuring the TAPI TSP

Note
This process is only required if you need to manually configure the Cisco TAPI TSP, normally this process is automated and happens during the installation of the Cisco Unified Business/Department Attendant Server.

To configure TSP, perform the following steps:
Procedure

Step 1  Access to configuring the TSP has been simplified with CUCM 8.0. Go to Start > All Programs > Cisco TSP > Cisco TAPI Configuration

Figure D-8 Accessing Cisco TAPI Configuration via the Start > All Programs menu.

Alternatively you can configure it by going through Start > Settings > Control Panel > Phone and Modem Options. Select Advanced tab, Select CiscoTSP001.tsp and click Configure, and select the User tab (Figure D-9).

Step 2  Enter the End User ID of the user that was created for the CallManager earlier in the User Name field. Enter the password of the user in the Password field, and verify the Password.

Figure D-9 Displays the End User ID Information to be Entered in the Fields

Step 3  Select the CTI Manager tab (Figure D-10),
Step 4 Enter the IP Address, IPv6 Address or Host Name of the CTI Manager that you require to obtain your TAPI information from. A Backup CTI Manager can be used for resilience if required and available.

Note CTI Manager is a service that runs on each of the CUCM Nodes within a cluster. It is recommended that the primary CTI Manager points to the publisher CUCM and the backup on one of those subscriptions.

Manually Configuring TAPI Media Driver

Note This process is only required if you need to manually configure the Cisco TAPI Media Driver, normally this process is automated and happens during the installation of the Cisco Unified Business/Department Attendant Server.

Procedure

Step 1 Access to configuring the TSP Media Driver has been simplified with CUCM 8.0. Go to Start > All Programs > Cisco TSP > Cisco TAPI Media Driver Configuration.
**Uninstalling the Cisco TSP**

If there is a requirement to uninstall the Cisco TSP then it should be done using the instructions found in a file called `ciscotsp.txt`. This file is created when the TSP is installed, and the default location is `C:\Program Files\Cisco`.
Uninstalling the Cisco TSP
Appendix E

Downloading, Updating and Registering Software

The following Appendix outlines the process of downloading, updating and licensing the Cisco Unified Business/Department Attendant Applications. This is done via the Solutions + website.

Updating From an Earlier Version of Cisco Unified Business/Department Attendant Applications

The Cisco Unified Business/Department Attendant Console Applications are designed in such a way that to upgrade from an earlier version of the software, you simply run the installation processes as outlined in Chapter 4 of this manual.

As with any software upgrade, it is worth taking a backup prior to the install, incase there is a failure of any sort. In the case of the Cisco Unified Business/Department Attendant Console Applications it is recommended that you back up the Cisco Folder, backup of DBs and within the Registry the backup of Arc Solutions folder.

Note

During the upgrade/installation process (Step 11) there is an option to retain the existing configuration, or create a brand new one.

Accessing the Solutions + Website

To download or register a version of the Cisco Unified Business/Department Administration Console you will need to have a valid account on the Solutions + Website.

Go the website http://www.cisco.com/go/ac, and perform the following steps:

Procedure

Note

The User Name and Password are NOT your CCO (Cisco Connection Online) ID and Password!

Step 1 Enter your User Name and Password to Log In to the web site (Figure E-1).
Creating an Account

To create an account you will have to click on the link to **Register your details**. This will take you through a series of questions.

When these questions have been answered, click on **Register** to complete. (Figure E-2)
After you have clicked on Register you will be prompted to confirm your Reseller from a drop down selection. Alternatively if your Reseller is not in the drop down selection you can Add New Reseller. Click on Save to complete the registration of this account (Figure E-3).

A confirmation screen will appear and you will then be sent an email containing your password which will enable you to access the website (Figure E-4).
Logging into the Site

When you log into the account, the initial Welcome screen provides the following options (Figure E-5):

- **About this Site** — Is a link back to this Welcome page when you are in other screens.
- **My Details** — Selecting this will display a page with the information that was requested when you registered the account.
- **Downloads** — Selecting this will display a page with the facility to download the software and other supporting documentation if required.
- **Activate Evaluation Software** — After the initial 5 days the software requires registration. This Evaluation license lasts for 60 days.
- **My 60 Day Evaluations** — Displays all information related to activated software including Customer Name, Product, Site, Product Key and Date.
- **Activate Purchased Software** — Selecting this will provide a screen where you are required to enter the registration details to confirm the purchase and activate the full product license.
My Details

My details screen provides a summary of the information that was entered when the account was registered. There is facility to Edit the User Details, but the User Name and Email Address is read only.

Downloads

Selecting Downloads from the right hand menu will present you with information regarding the available downloads, and any criteria or constraints that may impact on the use of the software (Figure E-6).
To Activate the 60 Day Evaluation Software

Initially the download can be used for 5 days. After that period the software must be registered with Cisco to extend it to a 60 day evaluation copy.

You will require:

The download for Cisco Unified Business/Department Attendant Console is around 250mb. The contents include SQL database, explorer, installs, languages and the software.

When the software has been downloaded, continue with the installation process described in Section 4 Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin of this manual.

When the software required is selected the screen will display the file format and the size of the download.

Click on Download to continue.

You will be prompted to Open or Save the Download (Figure E-7). Saving the file to a local area is recommended.

Note

The download for Cisco Unified Business/Department Attendant Console is around 250mb. The contents include SQL database, explorer, installs, languages and the software.

When the software has been downloaded, continue with the installation process described in Section 4 Installation Checklist and Procedure for Cisco Unified Business/Department Attendant Admin of this manual.
To Activate the 60 Day Evaluation Software

- To enter the **Reseller**, **Customer** and **Site** Details. This is done via a drill down method across three screens.
- Registration code from an installed Cisco Unified Business/Department Attendant Console software. This information is obtained from the **Help** menu within Cisco Unified Business/Department Attendant Console Web Admin. **Figure E-8** shows the License Management screen.

**Figure E-8**  
*License Management Screen within Cisco Unified Business/Department Software*

- Log into the account, and select **Activate Evaluation Software**. You will be prompted to select your **Reseller** (**Figure E-9**).

**Note**  
If your Reseller is not available there is facility to **Add a Reseller**.

**Figure E-9**  
*60 Day Software Activation - Selecting a Reseller*

- When you have completed the **Reseller**, **Customer** and **Site Details** you will be prompted to enter the **Product Key** from installed Cisco Unified Business/Department Attendant Console software. This information is obtained from the **Help > Licensing** menu within the Cisco Unified Business/Department Attendant Console Web Admin.
Within the Cisco Unified Business/Department Attendant Console Web Admin the Product Key is referred to as Registration Code within the Help > Licensing menu.

**Figure E-10**

**60 Day Software Activation - Software Activation (Product Key)**

Select the **Product** that you have installed (**Figure E-10**).

When you click **Next**, an Activation Code will be emailed out to the registered email address, and a confirmation screen will confirm this. **Figure E-11** shows the Activation Confirmation screen and **Figure E-12** shows an example of the email that is sent.

**Figure E-11**

**60 Day Software Activation - Confirmation Screen**

Save the Activation code to a location where it can be browsed to from the Cisco Unified Business/Department Attendant Console Web Admin server.

Return to the Cisco Unified Business/Department Attendant Console Web Admin Server and bring up the License Management screen (**Help > Licensing**) (**Figure E-13**).
Use **Browse** to locate the Registration File (Figure E-14). When the file has been found, Click on **Save** to complete the process.

**Note**

After Applying the License the services should be stopped and restarted.

**Note**

The Registration Key section is not usually required. Its inclusion on this page is to cater for existing customers that do not have physical access to the server and are required to enter the registration numbers manually.

This is done by opening the Registration file with Notepad and entering the two respective codes into the **Serial Number** and **Registration Key**.

### Activate Purchased Software

The Activation of the purchased software is done in a similar way to the 60 evaluation except there are several considerations to be made:

- This activation is permanent and you can not revert back to a trial version.
- It can be completed at any point within either the 5 day free evaluation, or the 60 day activated evaluation period.
- Requires 27 digit LAC (entitlement code) provided by Cisco on purchase of software.

**Note**

ONE LAC per system, regardless of number of client licenses ordered

Log into the account, and select **Activate Purchased Software**. You will be prompted to select your Reseller, Customer and Site Details you will be prompted to select the version of software (Figure E-15) and LAC number that you are activating (Figure E-16).
Activate Purchased Software

The License Code (LAC) is obtained from the reseller when the product is purchased.

When you click Submit, another screen will appear and you will be prompted to enter the Product Key (Figure E-18). This information is obtained from the Help>Licensing menu within the Cisco Unified Business/Department Attendant Console Web Admin (Figure E-17).

Note

Within the Cisco Unified Business/Department Attendant Console Web Admin the Product Key is referred to as Registration Code within the Help>Licensing menu.
When you click **Submit**. The Activation Code will be emailed out to the registered email address, and a confirmation screen will confirm this. Figure E-19 shows the Activation Confirmation screen and Figure E-20 shows an example of the email that is sent.

Save the Activation code to a location where it can be browsed to from the Cisco Unified Business/Department Attendant Console Web Admin server.

Return to the Cisco Unified Business/Department Attendant Console Web Admin Server and bring up the License Management screen (**Help > Licensing**) (Figure E-21).
Activate Purchased Software

Figure E-21  License Management Screen

Figure E-22  License Management Screen - Registration File

Use **Browse** to locate the Registration File. When the file has been found, Click on **Save** to complete the process.

**Note**
After Applying the License the services must be stopped and restarted.

**Note**
The **Registration Key** section is not usually required. Its inclusion on this page is to cater for existing customers that do not have physical access to the server and are required to enter the registration numbers manually.

This is done by opening the Registration file with Notepad and entering the two respective codes into the **Serial Number** and **Registration Key**.
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXL API</td>
<td>The AVVID XML Layer (AXL) Application Programming Interface (API) provides a mechanism for inserting, retrieving, updating, and removing data from the database using an eXtensible Markup Language (XML) Simple Object Access Protocol (SOAP) interface. This allows a programmer to access Cisco Unified Communications Manager data using XML and receive the data in XML form, instead of using a binary library or DLL.</td>
</tr>
<tr>
<td>Call Parking Devices</td>
<td>Virtual devices where calls can be held temporarily and picked from any other call centre extension.</td>
</tr>
<tr>
<td>CMC</td>
<td>Client Matter Code (CMC) is used to provide extra call logging facilities within the Communications Manager. This is used to log calls from different destinations. The user has to enter their CMC Code before their external consult transfer can proceed. The call detail records are updated with the CMC code along with the call information. This can then be used later on to charge calls to different cost centres.</td>
</tr>
<tr>
<td>CTI Port</td>
<td>The Computer Telephony Integration (CTI) port is actually a virtual device that allows you to create a virtual line. A CTI port must be added for each active voice line intended to be used on a Cisco IP SoftPhone.</td>
</tr>
<tr>
<td>CTI Route Point</td>
<td>A computer telephony integration (CTI) route point designates a virtual device that can receive multiple, simultaneous calls for application-controlled redirection.</td>
</tr>
<tr>
<td>CUPs</td>
<td>Cisco Unified Presence is a standards-based platform that collects information about a user's availability and communications capabilities to provide unified user presence status and facilitate presence-enabled communications for Cisco Unified Communications and critical business applications.</td>
</tr>
<tr>
<td><strong>FAC</strong></td>
<td>Forced Authorization Code (FAC) is used to provide security in the Communications Manager for dialling &quot;Route Patterns&quot;. Traditionally, this is used to block calls to external numbers. For example, often in call centres, only some callers are allowed to make external consult transfers to certain numbers. In order to enforce security, these callers are provided with a Forced Authorization Code. The concept of FAC is that if the user makes such an external call transfer that is protected by a FAC, the user must enter the FAC before the call can continue. If an incorrect FAC is entered, or if no FAC is entered, the call fails.</td>
</tr>
<tr>
<td><strong>Night Service</strong></td>
<td>This facility allows you to take the queue out of operation at certain times of the day. During this time, calls are routed to some other destination. For example, if you close down the 'Accounts service' queue every day at 7pm, beyond that time calls can be routed to a destination - device or another queue.</td>
</tr>
<tr>
<td><strong>SSL</strong></td>
<td>Short for Secure Sockets Layer, a protocol used for transmitting private data through the Internet.</td>
</tr>
</tbody>
</table>
## CONTENTS

### A

- Accessibility for Users with Disabilities 1-2
- Access Numbers 4-3
- Administrator 3-9, 5-2, 5-4
- Administrator Management 5-4
- Auto Answer 2-2
- Auto Synchronization 5-29
- AXL API 5-23, 5-29, A-1, C-1, 13-1

### B

- BLF 5-15

### C

- Call Manager Connectivity 5-12
- Call Park 2-2
- Checklist 4-1
- Cisco Accessibility Program 1-3
- Cisco CallManager 5-3
- Cisco Unified Attendant Admin 3-9, 5-2, 5-18
- Cisco Unified Attendant Console 3-7, 4-4, 5-33
- Cisco Unified Attendant LDAP Plug-in 5-10
- Cisco Unified Attendant Server 1-2, 5-2, 5-9
- Cisco Unified CallManager 1-1, 5-12, 5-20, 5-23
- Cisco Unified Communication Manager 1-1
- Cisco Unified Communications Manager A-1, C-1
- Cisco Unified Enterprise Attendant Admin 1-2, 5-1, 5-2, 5-6
- Cisco Unified Presence Server (CUPs) 2-2
- connectivity 5-6
- CT Gateway Devices 3-2, 5-21, 5-23
- CTI Manager 2-2, B-3, D-5, D-6

### D

- CUPS 2-2
- CUPs 5-15
- CUPS Connectivity 5-13
- CUPS Plug-in service 2-2

### D

- Database Management 5-6
- Device Management 5-20, 5-21
- Directory Import 5-29
- Directory Rules 5-20
- Directory Synchronisation 4-3
- Directory Synchronization 5-20, 5-29, 5-30

### E

- Emergency 5-36
- Engineering 5-3, 5-4

### F

- FAC and CMC Settings 4-3, 5-33

### G

- General Properties 5-32, 5-33, 5-34

### H

- Hardware / Software Requirements 3-6
- Home Page 5-3
[Index]

I
Internal/External Access  5-33

L
LDAP  5-10, 5-15, 5-18, 5-19
LDAP Directory Connectivity  5-15
Logging Management  5-15
Logging path  5-18, 5-19, 5-20
Login  5-2
Logon  5-2

M
Music on Hold  2-1

N
Night Service  4-3

O
On reconnect  5-29
On start-up  5-29
Overflow  5-36

P
Park Devices  3-2, 5-21, 5-23

Q
Queue Management  5-35

R
Recall Timers  4-3, 5-33
Refresh  5-10
Repair  5-6, 5-8
Roles  A-4, C-4

S
Schedule Settings  5-29
Service Devices  5-21, 5-23
Service Management  5-9
Service Queues  3-2
SQL Server  1-2, 3-6, 5-6
Standard Super Cisco Unified Communications Manager
User  A-5, C-5
Start Server  5-10
Stop Server  5-10
Synchronizing with CCM  5-23
System Configuration  5-3, 5-20, 5-30, 5-32

T
TAPI  1-1, 2-2, 4-3, 4-4, B-1, B-2, B-3, B-4, B-5, D-1, D-4, D-6
Template Device  5-21
Test  4-4, 5-6, 5-12, 5-14
TSP  1-1

U
URL  5-1
User Configuration  5-3, 5-32, 5-35
User Group  A-1, A-3, A-4, C-1, C-3, C-4

W
web session  5-1
Working Days  4-3