



Cisco Unified Workforce Optimization

Workforce Management Installation Guide 8.3(3)
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Workforce Management Installation Guide

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Overview

1

Introduction

The Workforce Management (WFM) InstallShield Wizard guides you through the WFM installation. The installation includes the components listed in [Table 1](#).

Table 1. Workforce Management Installation Components

Installation	Components
Capture Services	<ul style="list-style-type: none">• WFM Capture service• WFM OOC Service
Compile Services	<ul style="list-style-type: none">• WFM Compile service
Process Services	<ul style="list-style-type: none">• WFM Request service
Transaction Services	<ul style="list-style-type: none">• WFM Adherence RTE service• WFM Adherence Conformity Calculator service• WFM Sync service• Apache Tomcat webserver• WFM web application• BIRT (Business Intelligence Reporting Tools)• Omnis

These components are installed on a single server. See "[Server Configurations](#)" on [page 21](#) for more information.

After you have successfully installed WFM into a properly-configured Cisco Unified Workforce Optimization (WFO) environment, the basic functionality of WFM is ready to be configured for your use. Users access WFM through a web browser.

For information about configuring WFM, see the *Workforce Management Administrator User Guide*.

What's New in This Version

WFM 8.3 includes the following new features.

- Support for Cisco Unified Contact Center Express 7.0
- Support for MSAQ (multi-skill agent queuing) so that a schedule displays all agents who can support the CSQ even if they are not scheduled to do so
- Localization in Canadian French

WFM Documentation

The following documents contain additional information about WFM.

- *Workforce Management Administrator User Guide*
- *Workforce Management Agent User Guide*
- *Workforce Management Troubleshooting Guide*
- *Workforce Management Reports Reference*
- *Workforce Management Release Notes*

Workforce Management Feature Levels

This version of Workforce Management has only the Basic feature level.

Workforce Management Services

Workforce Management Adherence Conformity Calculator Service

The Workforce Management Adherence Conformity Calculator (ACC) service processes data from the daily schedule and agent status table and computes the adherence and conformity percentages used in historical productivity reports.

Workforce Management Capture Service

The Workforce Management Capture service (Capture service) listens for historical call data reports created by the Workforce Management Odysoft ODBC Collector (OOC) service. When the Capture service detects a new report, it sends a compilation request to the Compile service.

Workforce Management Compile Service

The Workforce Management Compile service (Compile service) listens for compilation requests from the Capture service. The Compile service can compile historical data for agents, services, or teams by day, week, month, or year for use in forecasting and scheduling.

Workforce Management OOC Service

Every 30 minutes, the Workforce Management Odysoft ODBC Collector (OOC) service (OOC service) collects all of the call data for the preceding 30 minutes from the ACD database using the Open Database Connectivity (ODBC) interface. The OOC service then writes the call data into historical reports.

High availability (HA) configurations can use multiple data sources. The OOC service always connects to the primary ACD node, however, and fails over to the secondary node only if the first connection fails.

Workforce Management Request Service

The Workforce Management Request service (Request service) listens for user requests to generate forecasts and schedules.

Workforce Management Adherence RTE Service

- The Workforce Management RTE (Real Time Engine) service (RTE service) allows WFM to display agent state information in the Supervisor Adherence dashboard. To get real-time information on agent states, the RTE service uses Advanced Contact Management Interface (ACMI) protocol for Unified CCX

Workforce Management Sync Service

The Workforce Management Sync service (Sync service) connects to the Unified CCX node using the ACMI-based synchronization process. The Sync service retrieves and processes configuration data, such as contact service queue (CSQ) configurations, team configurations, and agent configurations.

Tomcat Service

The Tomcat Service enables desktop clients to access WFM.

Port Usage

A WFM environment consists of one WFM server and two or more remote devices, including the Unified CCX server and one or more client PCs.

Table 2 lists the software running on each of these devices in a Unified CCX environment.

Table 2. Configuration in a Unified CCX environment

Server	Hosted Software
WFM servers	<ul style="list-style-type: none"> • WFM services • WFM application • WFM instance of SQL Server • Apache Tomcat
Unified CCX server	<ul style="list-style-type: none"> • Unified CCX • Unified CCX instance of SQL Server • CTI server (part of the RmCm subsystem)
Client PC	<ul style="list-style-type: none"> • Microsoft Internet Explorer 6 or 7

Table 3 lists the TCP and UDP ports used by WFM and its components on the WFM server.

NOTE: For more information about Apache Tomcat port usage, go to <http://tomcat.apache.org/tomcat-5.5-doc/index.html>.

Table 3. WFM Port Usage on WFM Server

Server application protocol	Destination port (listening)	Client application protocol
WFM instance of SQL Server	TCP 1433 TCP 1434	WFM Capture Service WFM Compile Service WFM RTE Service WFM Request Service WFM Sync Service Apache Tomcat
WFM RTE Service	TCP 30001 (configurable)	ACMI Service (GED-188)
WFM Sync Service	TCP 59011	<i>unused</i>
Apache Tomcat	TCP 8087 TCP 8017 TCP 8007	HTTP AJP 1.3 Shutdown port

Table 4 lists the TCP and UDP ports used by WFM and its components on remote devices in the WFM environment, including the Unified CCX server and one or more client PCs.

Table 4. WFM Port Usage on Remote Devices

Server application protocol	Destination port (listening)	Client application protocol
CTI server*	TCP 42027 (configurable)	ACMI Service
Unified CCX instance of SQL Server	TCP 1433 TCP 1434	WFM Sync Service
WFM RTE Service	TCP 42027 (configurable)	Unified CCX instance of SQL Server
Apache Tomcat	TCP 8087 TCP 8017 TCP 8007	HTTP AJP 1.3 Shutdown port

*You can set this port number in the System Parameters window of the Unified CCX Administration web page. The parameter name for the port number is RmCm TCP Port. For more information, see *Managing System Parameters, Cisco Customer Response Solutions Administration Guide*.

System Requirements

2

Overview

This chapter describes the following requirements for WFM:

- [System Requirements \(page 16\)](#)
- [Server Configurations \(page 21\)](#)
- [Configuration Data \(page 23\)](#)
- [System Capacity \(page 24\)](#)

System Requirements

The following tables list the minimum system requirements for the WFM server and clients.

Cisco Unified Workforce Optimization Environment

Workforce Management is compatible with Quality Management as outlined in the following table.

Table 5. WFM/QM version compatibility

WFM Version	QM Version			
	2.4	2.5	2.6	2.7
8.0	No	Yes	No	No
8.1	No	Yes	No	No
8.2	No	Yes	No	No
8.3(1)	No	Yes	No	No
8.3(2)	No	Yes	No	No
8.3(3)	Yes	Yes	Yes	Yes

System Environment

WFM has been verified in the following configurations:

- Cisco Unified Contact Center Express 5.0(2) and 7.0(1)

Operating Environment

Server Requirements

Table 6 displays the minimum operating system and hardware requirements for WFM servers.

NOTE: Running WFM on a platform other than a Cisco MCS or exact equivalent server is not supported

Table 6. WFM server minimum requirements

Operating System	Hardware
Windows Server 2003 R2	3.4 GHz Dual Pentium 4 2 GB RAM 150 GB hard disk space Cisco Media Convergence Server (MCS) or equivalent*
VMware ESX Server†	3.4 GHz Dual Pentium 4 3 GB RAM 200 GB hard disk space Cisco Media Convergence Server (MCS) or equivalent

* For the latest information on supported MCS equivalent platforms (including IBM and HP), go to http://www.cisco.com/en/US/products/hw/voiceapp/ps378/prod_brochure_list.html.

† WFM systems hosted on VMware have been tested for functionality only, not for scalability. Due to the many possible virtual server configurations, and the possible impact of additional hosted virtual servers on WFM, the actual server performance in the user's VMware environment is the responsibility of the customer. Cisco support for performance and scalability issues is limited to server-based deployments. If a problem occurs in a VMware deployment, the customer might be required to shut down other sessions or reproduce the problem in a non-VMware configuration to assist in isolating the issue.

Desktop Requirements

Table 7 displays the minimum operating system and hardware requirements for WFM desktops.

Table 7. WFM desktop minimum requirements

Operating System	Hardware
Windows XP Professional Service Pack 1 or greater	1 GHz processor or higher 256 MB RAM or higher 20 GB hard disk space 100 Mbit NIC or higher
Windows Vista (Business Edition)	1 GHz processor or higher 1 GB RAM or higher 40 GB hard disk space 100 Mbit NIC or higher

Third Party Software Requirements

Table 8 displays the minimum third party software requirements for WFM servers and where they are installed.

NOTE: If you are using Unified CCX, WFM requires the Cisco Media Convergence Server (MCS) platform to be a dedicated standalone server. Running other applications on the WFM server can adversely affect performance.

Table 8. Minimum third party software requirements for the WFM server

Application	Where Installed/Description
Microsoft SQL Server 2005	<p>Cisco MCS platform:</p> <p>System configuration data is maintained using Microsoft SQL Server 2005. The customer must purchase and install SQL Server 2005. SQL Server 2005 is not installed as part of the product and must be installed prior to deploying WFM.</p> <p>See "Server Configurations" on page 21 for more information.</p> <p>NOTE: This application is required if you are using Unified CCX.</p>
Microsoft SQL Server 2005 Tools	<p>Cisco MCS platform: Multiple server configuration using the Cisco MCS platform and one or more of the following WFM services: process services, capture services, and compile services</p> <p>System configuration data in a multiple server configuration is maintained using SQL Native Client included in Microsoft SQL Server 2005 Tools. In a multiple server configuration, the customer must install SQL Server 2005 on the server that will host the WFM transaction services and install SQL Server 2005 Tools on the remaining WFM servers. SQL Server 2005 Tools is not installed as part of the product and must be installed prior to deploying WFM. See "Server Configurations" on page 21 for more information.</p> <p>NOTE: This application is required if you are using Unified CCE, Avaya CMS, or Nortel Contact Center.</p>
Sybase System 12	<p>Cisco MCS platform</p> <p>NOTE: This application is only required if you are using Nortel Contact Center.</p>
Internet Explorer 6 or 7	<p>Cisco MCS platform: Internet Explorer is required to access the WFM web application. Vista only supports Internet Explorer 7.0.</p>

Table 8. Minimum third party software requirements for the WFM server (cont'd)

Application	Where Installed/Description
Java 2 Runtime Environment (JRE) Standard Edition Version 5.0 (v1.5.0_12)	Cisco MCS platform: Java 2 Runtime Environment is required to run the Java Server Pages (JSP) used by the WFM application. The version of JRE shipped with WFM meets the minimum requirements and is installed automatically on the Cisco MCS platform.
BIRT v2.2.1	Cisco MCS platform: BIRT is an open source Eclipse-based reporting system. The version of BIRT shipped with WFM meets the minimum requirements and is installed automatically. For more information about BIRT, see http://www.eclipse.org/birt/phoenix .
JFreeChart v1.0.1	Cisco MCS platform: JFreeChart is an open source Java chart library. The version of JFreeChart shipped with WFM meets the minimum requirements and is installed automatically. For more information about JFreeChart, see http://www.jfree.org/jfreechart/ .
Omnis v7.1	Cisco MCS platform: Omnis is a rapid application development (RAD) tool. The version of Omnis shipped with WFM meets the minimum requirements and is installed automatically. For more information about Omnis, see http://www.omnis.net .
Apache Tomcat v5.5.9	Cisco MCS platform: Apache Tomcat is a web container, or application server that provides an environment for Java code to run in cooperation with a web server. The version of Apache Tomcat shipped with WFM meets the minimum requirements and is installed automatically. For more information about Apache Tomcat, see http://tomcat.apache.org .

Desktop Requirements

Table 9 displays the minimum desktop software requirements for WFM and where they are installed.

Table 9. WFM desktop minimum third party software requirements

Application	Where Installed/Description
Internet Explorer 6 or 7	WFM client desktops: Internet Explorer is required to access the WFM web application. Vista only supports Internet Explorer 7.

Server Configurations

The number of agents and associated voice traffic WFM can support is scalable. WFM supports a single server configuration.

Single Server Configuration

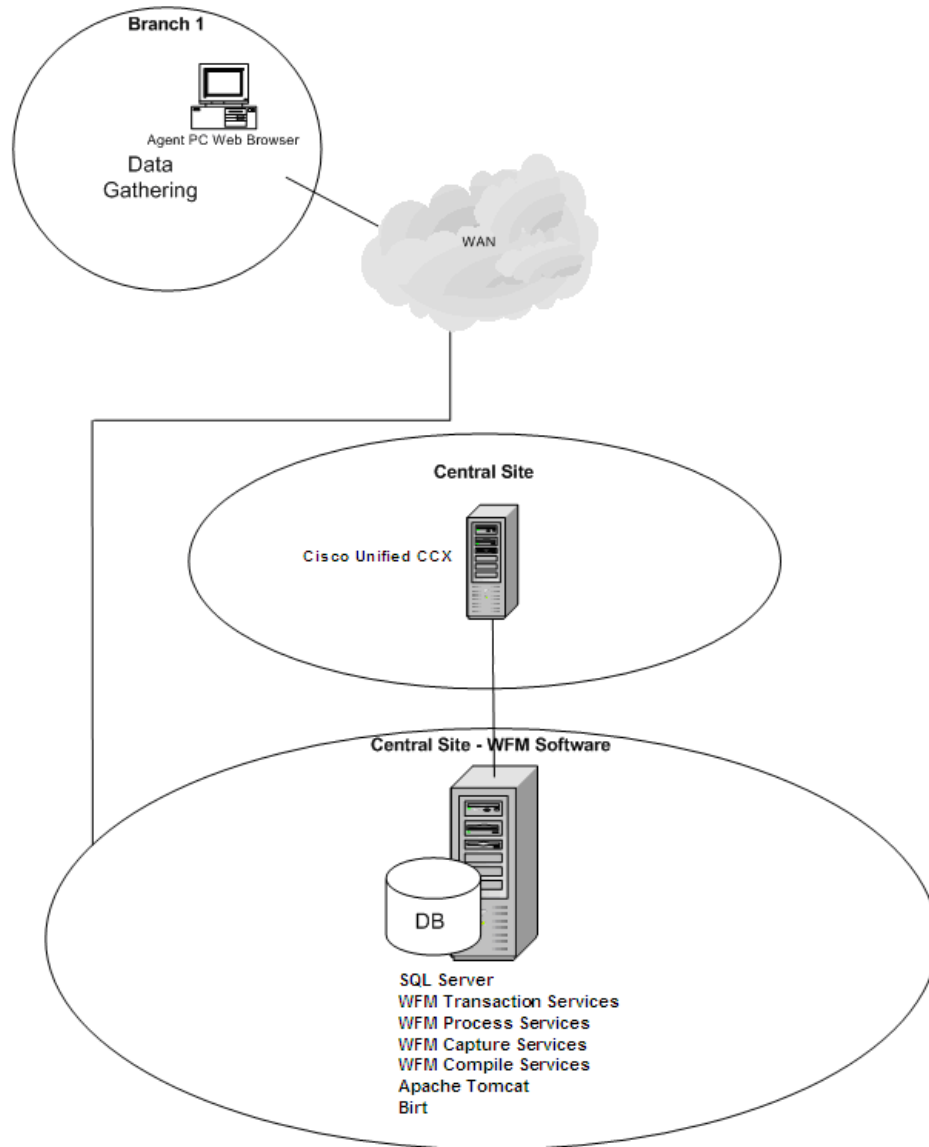
A single server configuration has one automatic call distributor (ACD) cluster with all Workforce Management services located on a single server ([Figure 1](#)). The single server configuration supports 300 concurrent users and 900 configured users.

The following components must be installed on the single server:

- WFM Transaction Services (including Apache Tomcat, ACC service, BIRT, Omnis, RTE service, and sync service)
- WFM Process Services (including the Request Service)
- WFM Capture Services (including the OOC Service and Capture Service)
- WFM Compile Services (including the Compile Service)

NOTE: The Microsoft SQL Server 2005 must be installed on the single server before you install the components.

Figure 1. Single server configuration for Cisco Unified CCX



Configuration Data

The following data needs to be stored persistently and must be backed up on a regular basis:

- WFM database (named CWFM)
- Customer-specific configuration files, such as the files in C:\Program Files\Cisco\WFO_WFM\config

WFM database backups are independent of Unified CCX backup and restore or BARS tools. Use standard SQL Server 2005 tools to manually back up and restore the WFM database.

NOTE: If you are running Cisco Security Agent (CSA) on your WFM server, shut CSA down before you back up the WFM database. If CSA is running while you run SQL Server utilities to backup the WFM database, the backup may fail.

System Capacity

The system capacity for the WFM server can be defined by specific hardware and software configurations. It is also defined by the number of users. User capacity is defined as follows.

- Configured users—Any scheduled or recorded agent plus all other users with active login rights to Workforce Optimization (WFO) applications (for example, supervisors, managers, quality evaluators, or schedulers). The maximum capacity for configured users is the total number of users that can be configured in WFM.
- Concurrent users—The users who are logged into WFM at any given time. The maximum capacity for concurrent users is the total number of users that can be logged into WFM at any given time.

Table 10 shows the limits of individual feature capacities.

Table 10. System capacity

Attribute	Capacity *
Maximum number of configured WFM users	900
Maximum number of concurrent WFM users	300
Maximum number of agents per team	150
Maximum number of skills per agent (for real time reporting)	50
Maximum number of supervisors per site	50
Maximum number of supervisors per team	30
Average agents per supervisor	7.5 to 1

* Capacity numbers are estimates. Actual numbers might vary.

Table 11 shows Workforce Management server capacities.

Table 11. Workforce Management server capacities

	Server Configuration	
Processor	Intel 5140 2.33 GHz dual core	2 Intel 5140 2.33 GHz dual core
Memory (RAM)	2 GB DDR 2/DDR 3	4 GB DDR 2/DDR 3
System Storage	40 GB HDD	40 GB HDD
Cisco MCS or Equivalent	7835	7835

Table 11. Workforce Management server capacities (cont'd)

	Server Configuration	
Max Number Configured Users	450	900
Max No. Concurrent Users	150	300

Before You Install WFM

4

Overview

This chapter describes how to configure the WFM server before you install WFM. This process consists of the following tasks.

- [Installing Microsoft SQL Server 2005 \(page 28\)](#)
- [Creating a SQL Server Login for WFM \(page 30\)](#)
- [Configuring Firewall Port Exceptions \(page 31\)](#)
- [Configuring Regional Settings \(page 33\)](#)
- [Verifying Prerequisites \(page 35\)](#)

Installing Microsoft SQL Server 2005

You must install Microsoft SQL Server 2005 on the WFM server.

An abbreviated installation procedure is provided below. For detailed information about how to install Microsoft SQL Server 2005, see the Microsoft SQL Server 2005 installation documentation.

Complete the Microsoft SQL Server 2005 Setup utility windows as shown in [Table 12](#):

Table 12. Microsoft SQL Server 2005 Setup utility entries

Window	Complete as follows:
Registration Information	Enter your name, company, and product key.
Components to Install	Select check boxes for: <ul style="list-style-type: none"> • SQL Server Database Services • Workstation Components • Any other desired components
Instance Name	Select one of the following options: <ul style="list-style-type: none"> • Default Instance. If you are upgrading from WFM 8.0, you must select the Default instance. WFM 8.0 required a default instance, and you cannot upgrade from WFM 8.0 to a SQL environment using a named instance. • Named Instance. If you select this option, specify the named instance.
Service Account	Select Use the Built-In System Account, then select Local System from the drop-down list. Under Start Services at the End of Setup, highlight SQL Server, SQL Server Agent, and SQL Browser.
Authentication Mode	Select Mixed Mode. Enter a password for the SQL Server System Administrator (sa) logon.

Table 12. Microsoft SQL Server 2005 Setup utility entries (cont'd)

Window	Complete as follows:
Collation Settings	<p data-bbox="703 369 1378 436">Under Collation Designator and Sort Order, select Latin1_General from the drop-down list.</p> <p data-bbox="703 453 1378 520">Select the Accent-sensitive check box. Do not select any of the other check boxes.</p> <p data-bbox="703 537 1378 697">NOTE: The SQL collation name is SQL_Latin1_General_CP1_CI_AS. See http://msdn2.microsoft.com/en-us/library/ms180175.aspx for more information about SQL Server collation settings.</p>

Creating a SQL Server Login for WFM

NOTE: If you are using an historical database (HDS) and an administrative workstation (AW) database instead of a single database, make sure the SQL Server login has access to both databases.

NOTE: Store the WFM SQL Server login name and password in a safe place. You will need this information for the WFM Configuration Setup utility, which runs automatically after you install WFM.

To create a SQL Server login for WFM:

1. On the SQL Server computer, start Microsoft SQL Server Management Studio and log in.
2. In the Object Explorer pane, expand the SQL Server instance. Choose Security > Logins.
3. Right-click Logins and choose New Login.
4. The Login–New window appears.
5. On the General page, enter the login you want WFM services to use to connect to SQL Server. Select SQL Server Authentication, enter a password, and clear the Enforce password policy check box so that the WFM user account does not expire.
6. On the Server Roles page, select dbcreator and sysadmin from the list of server roles.

NOTE: The WFM SQL Server login must be able to create databases and run the WFM administrative scripts.

7. Click OK. The new login is added to the list of logins in the right pane.

IMPORTANT: If this database user is modified (for example, name or password are changed) after WFM is installed and configured to use it, WFM must be reinstalled.

Configuring Firewall Port Exceptions

If Microsoft Windows Firewall is enabled when WFM is installed, the installation process opens the firewall ports listed in [Table 13](#).

If another firewall is used, or if you turn on the Windows Firewall after WFM is installed, these ports must be opened manually. See your firewall documentation for instructions.

Table 13. Microsoft Windows Firewall port exceptions

Server Application Protocol	Listening Port	Client Application Protocol
WFM RTE Service *	TCP 30001 (configurable)	ACMI Service (GED-188)
	TCP 42027 (configurable)	Unified CCX instance of SQL Server
	TCP 42027 (configurable)	Unified CCE instance of SQL Server
	RTA port configured when the BCSI WFM REAL TIME IMPLEMENTATION package was installed	Avaya CMS
	TCP 5000, 3000, or 10000 Default = 5000	Nortel Contact Center
Apache Tomcat	TCP 8087 TCP 8017 TCP 8007	HTTP AJP 1.3 Shutdown port

* Open the ports listed here on the server where the WFM RTE service is installed.

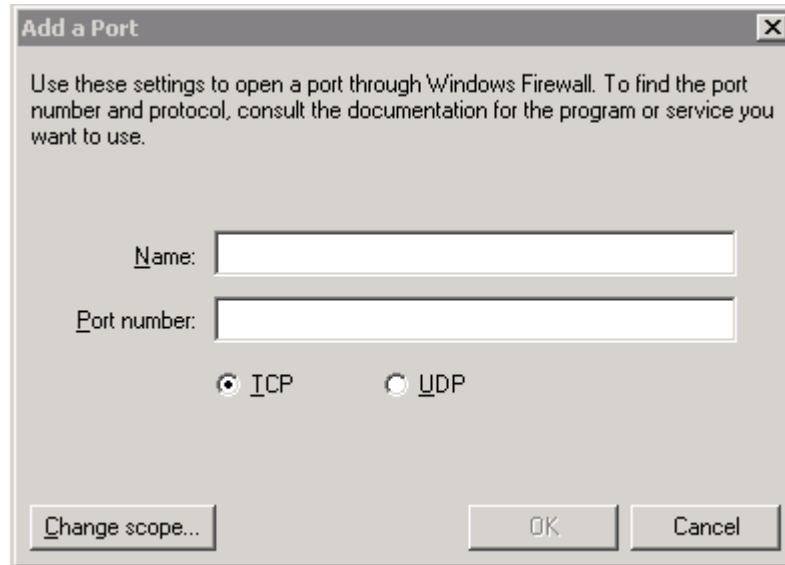
NOTE: For a complete list of ports used in a WFM environment, see [Port Usage \(page 13\)](#).

To add a port to the Microsoft Windows Firewall exceptions list:

1. On the WFM server where the applicable WFM service is installed, choose Start > Settings > Control Panel > Windows Firewall.

2. On the Exceptions tab, click Add Port. The Add a Port window appears (Figure 2).

Figure 2. Add a Port window



3. Enter a name that describes the port, and then enter the port number. Select the appropriate connection type (TCP or UDP), and then click OK.
4. Repeat steps 2 and 3 to add another port to the exceptions list.
5. When you are finished adding ports, click OK to close Microsoft Windows Firewall.

Configuring Regional Settings

The OOC Service must use US English regional settings. If you are installing the Capture Service on a server running a Windows operating system where US English is not the default setting, you must change the default regional settings to US English in the Windows registry.

To change the regional settings in the Windows registry:

1. Open the Windows registry on the Capture service server.
2. Navigate to the following registry key:
HKEY_USERS\DEFAULT\Control Panel\International\
3. Ensure that the registry settings under the International key are as listed in [Table 14](#).

Table 14. Regional settings

Value	Type	Data
iCalendarType	string	1
iCountry	string	1
iCurrDigits	string	2
iCurrency	string	0
iDate	string	0
iDigits	string	2
iFirstDayOfWeek	string	6
iFirstWeekOfYear	string	0
iLZero	string	1
iMeasure	string	1
iNegCurr	string	0
iNegNumber	string	1
iTime	string	0
iTimePrefix	string	0
iTLZero	string	0
Locale	string	00000409
NumShape	string	1

Table 14. Regional settings (cont'd)

Value	Type	Data
s1159	string	AM
s2359	string	PM
sCountry	string	United States
sCurrency	string	\$
sDate	string	/
sDecimal	string	.
sGrouping	string	3;0
sLanguage	string	ENU
sList	string	,
sLongDate	string	dddd, MMMM dd, yyyy
sMonDecimalSep	string	.
sMonGrouping	string	3;0
sMonThousandSep	string	,
sNativeDigits	string	0123456789
sNegativeSign	string	-
sPositiveSign	string	
sShortDate	string	mm-dd-yyyy
sThousand	string	,
sTime	string	;
sTimeFormat	string	h:mm:ss tt

Verifying Prerequisites

Active Directory Prerequisites

If you are using Active Directory, the WFM server must be part of the Active Directory domain.

You also need the following information:

- Active Directory distinguished names and ports (if you are not using the default port)
- Active Directory paths to the users
- Common names (CN) from the Active Directory account and password

Unified CCX Prerequisites

If you plan to use Unified CCX , you must install and configure the following systems before you install WFM.

- Cisco Unified Contact Center Express (Unified CCX)
- Cisco Unified Communications Manager (Unified CM) or Unified Communications Manager Express (Unified CME)
- Cisco Unity server (if you use Cisco Unity)
- Unified CM IP address and port number
- CTI server IP address and port number (see ["Port Usage" on page 13](#))
- Quality Management (QM) server IP address (if you use QM)
- Unified CCX server IP address:
 - Single node environment: use the primary server IP address
 - High Availability (two node) environment: use the secondary server IP address

WFM Prerequisites

To install WFM, you need the following information.

- WFM server IP address
- WFM SQL Server database username and password you used in ["Creating a SQL Server Login for WFM" on page 30](#)
- SQL Server instance name you used in ["Installing Microsoft SQL Server 2005" on page 28](#) (if you did not use the default instance)

Installing and Configuring WFM

5

Overview

This chapter describes how to install and configure WFM. This process consists of the following tasks.

- [Upgrading WFM \(page 38\)](#)
- [Installing WFM \(page 40\)](#)
- [Configuring WFM \(page 45\)](#)

Upgrading WFM

You can upgrade WFM 8.0(n) and 8.2(n) to WFM 8.3(3).

To upgrade from WFM 8.0(n) or 8.2(n) to WFM 8.3(3):

1. Schedule a maintenance period for installation.

NOTE: Because upgrading WFM requires temporarily stopping all WFM services and processes on your WFM server, WFM is not available to users and agents during an upgrade. Therefore, to limit impact to a live WFM system, schedule upgrades after business hours or during a maintenance period when your WFM system is out of production.

2. Log into the WFM server as the local machine administrator.

NOTE: You can log into the WFM server remotely using Virtual Network Computing (VNC) software. See the documentation that came with your VNC software for instructions on establishing a remote connection to another machine.

3. Run the old WFM version of WFM Configuration Setup and note the settings you used when you installed WFM. Not all WFM settings are maintained during the upgrade process. You must enter them again after you install the upgrade.
4. Back up the old SQL Server WFM database using SQL Server backup tools.

NOTE: Do not remove the old SQL Server WFM database. The old SQL Server WFM database is required during the upgrade process. Backing up your database is recommended in case a problem occurs during the upgrade.

5. Uninstall any service releases (SRs) applied to the old version of WFM. For instructions, see ["Removing a WFM Service Release" on page 60](#). Removing an SR takes approximately 10 minutes, followed by a server reboot.
6. Uninstall the old version of WFM. For instructions, see ["Removing WFM Services" on page 61](#). Removing a WFM base release takes approximately 10 minutes. The system does not reboot.

NOTE: When you uninstall WFM, the WFM SQL Server database instance remains.

7. Install WFM 8.3(3). For instructions, see ["Installing WFM" on page 40](#).

NOTE: Installing the release, including the configuration setup, takes approximately 30–40 minutes.

8. Configure WFM 8.3(3). For instructions, see ["Configuring WFM" on page 45](#).
9. After installation and configuration, log into WFM as an administrator and test your WFM system to ensure that it is working properly.
10. From the WFM interface, choose Agents > Agents. If the right pane displays a list of agents, the synchronization was successful.
11. Log into the WFM server as the local machine administrator and navigate to C:\Program Files\Cisco\WFO_WFM\log. Open the OOC Service log file (<yyyymmdd>-ooCollector.log, where <yyyymmdd> is the date). Verify that the log file does not contain any error messages.

Installing WFM

Install the WFM services according to the supported system configuration as described in "[Server Configurations](#)" on page 21.

WFM Configuration Setup runs automatically after you install WFM.

IMPORTANT! Any time WFM Configuration Setup starts after an installation, it must be run to completion in order for the system to function.

To install WFM:

1. On the WFM server, log in as the local machine administrator.

NOTE: You can log into the WFM server remotely using Virtual Network Computing (VNC) software. See the documentation that came with your VNC software for instructions on establishing a remote connection to another machine.

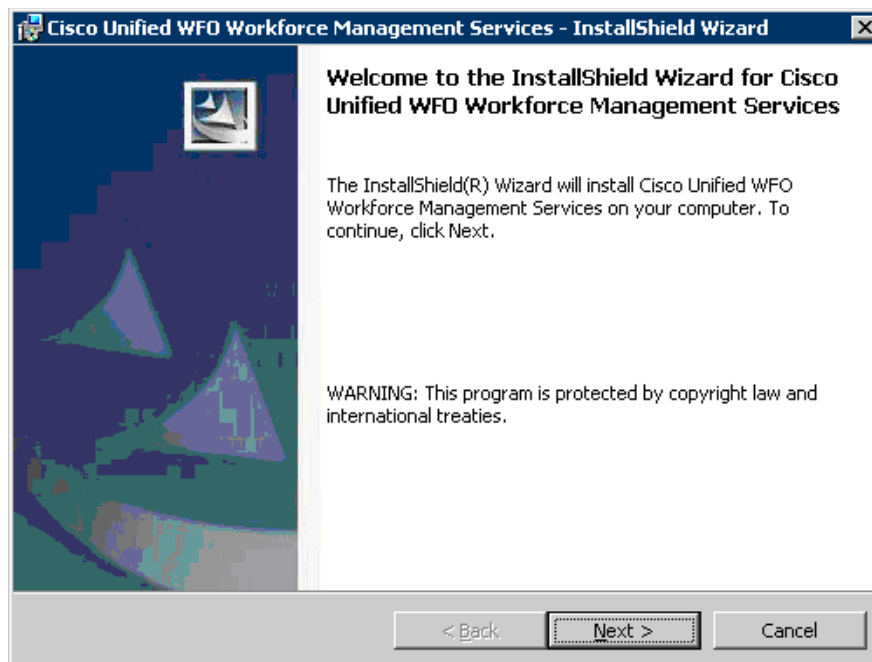
2. If Cisco Security Agent (CSA) is running on your WFM server, shut CSA down before you begin the installation process.

NOTE: If CSA is running while you install WFM, the installation might fail.

3. Load the installation CD in the server computer, and then navigate to the CD in My Computer or Windows Explorer.

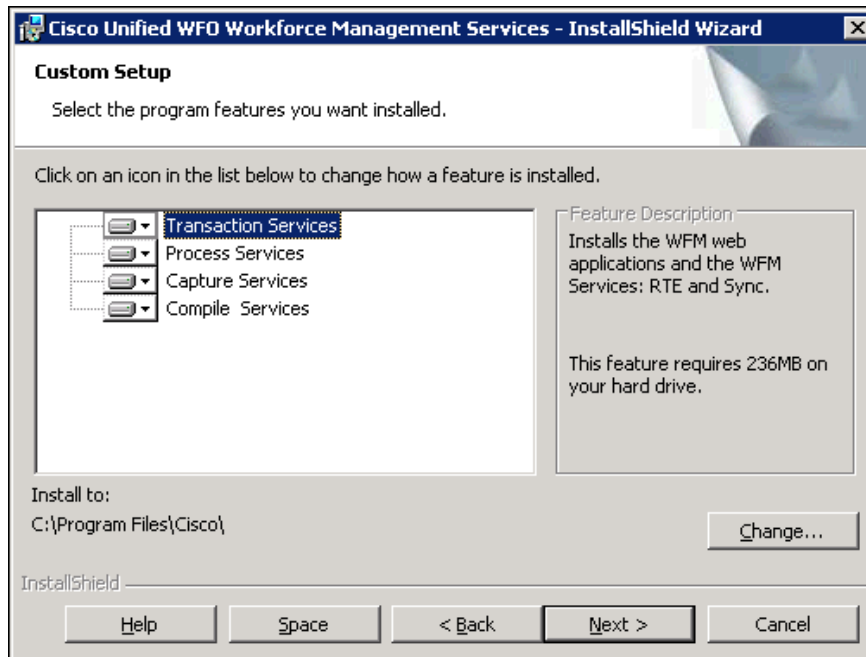
4. Double-click setup_WFM_<Version>.exe, where <Version> is the version number associated with this release (for example, setup_WFM_833.exe), to start the installation wizard. The Cisco Unified WFO Workforce Management Services—InstallShield Wizard Welcome window appears (Figure 3).

Figure 3. InstallShield Wizard Welcome window



5. Click Next to continue. The Custom Setup window appears (Figure 4).

Figure 4. Custom Setup window

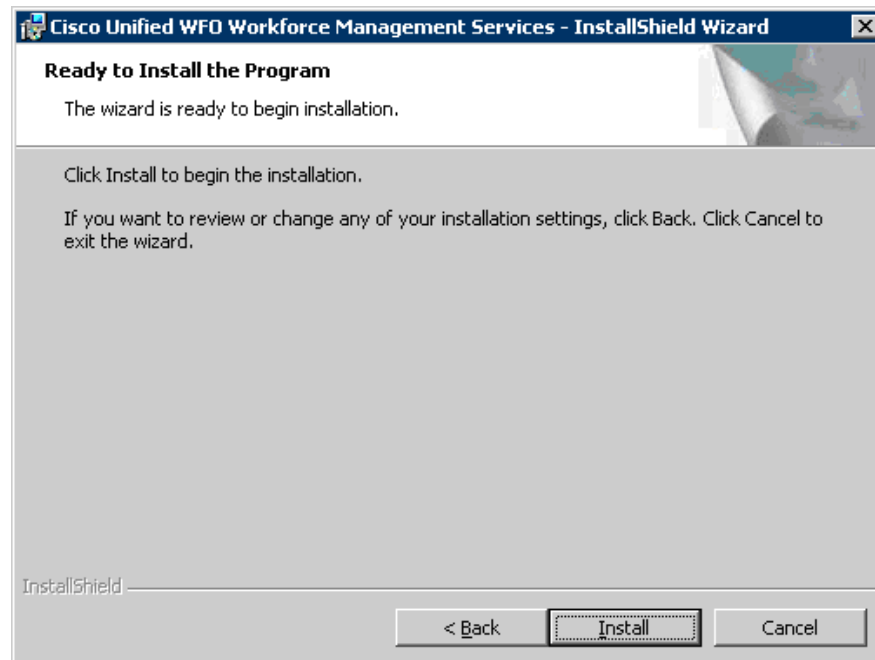


6. The default installation folder is C:\Program Files\Cisco. If you want to change the default folder, click Change and follow the prompts.

NOTE: If you are upgrading from WFM 8.0, use the folder path specified when WFM 8.0 was installed. WFM needs this folder path when upgrading the SQL Server WFM 8.0 database.

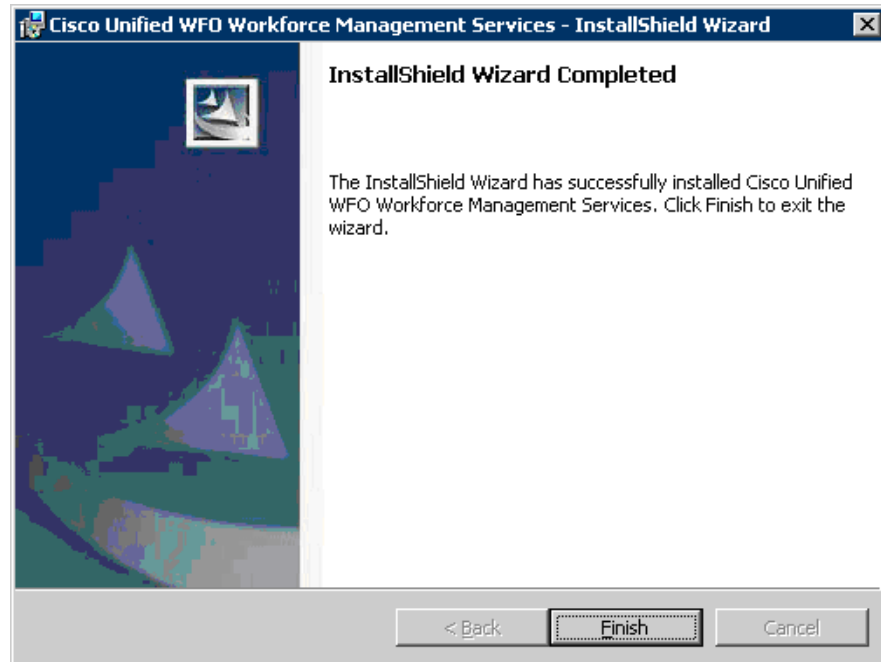
7. Click Next to continue. The Ready to Install the Program window appears (Figure 5).

Figure 5. Ready to Install the Program window



8. Click Install to continue. When the installation completes, the InstallShield Wizard Completed window appears (Figure 6).

Figure 6. InstallShield Wizard Complete window



9. Click Finish to close the InstallShield window. WFM Configuration Setup is launched automatically. See "[Configuring WFM](#)" on page 45 for more information on WFM Configuration Setup.

NOTE: If a dialog appears asking you to restart your server, Click No to dismiss the dialog box. Complete the WFM Configuration Setup utility and then restart the server.

10. If present on the server, restart Cisco Security Agent.

Configuring WFM

After you have installed the WFM server, WFM Configuration Setup is used to configure the WFM environment. WFM Configuration Setup has two modes:

- Initial mode—WFM Configuration Setup is launched automatically in initial mode after the WFM installation finishes. After you configure all of the required parameters and exit WFM Configuration Setup, the WFM services are started automatically and the system is ready for use.
- Update mode—WFM Configuration Setup can be launched manually when you want to change configuration settings in an existing system. See [Launching WFM Configuration Setup Manually on page 51](#) for instructions. In update mode you cannot modify the WFM database hostname/IP address or instance name or enable/disable Active Directory. To change those settings, you must reinstall WFM.

The following is a list of all possible steps that can appear when you run WFM Configuration Setup in either initial or update mode.

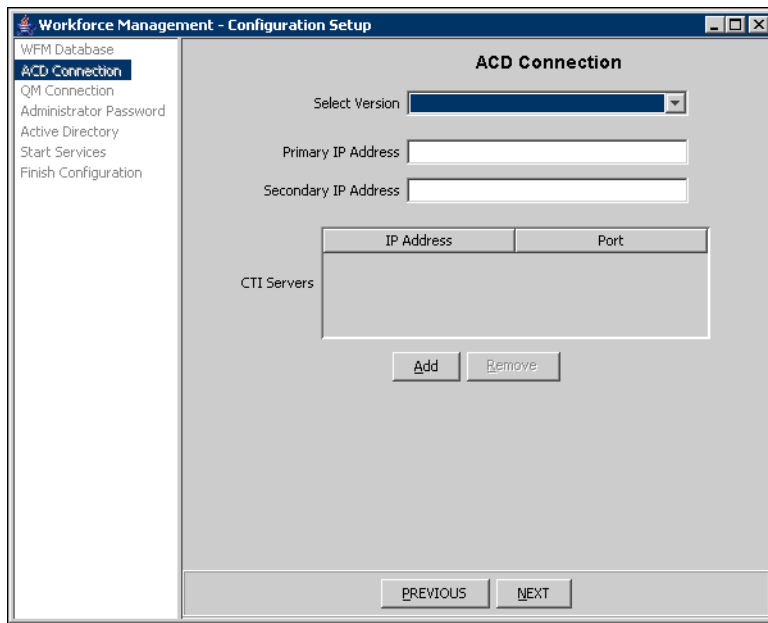
NOTE: Some steps trigger actions and do not display windows that contain fields to be completed.

- [WFM Database Step \(page 50\)](#)
- Create WFM DB—action only. This step creates the WFM database.
- [WFM Server Step \(page 51\)](#)
- [ACD Connection Step \(page 46\)](#)
- [QM Connection Step \(page 49\)](#)
- [Administrator Password Step \(page 48\)](#)
- [Active Directory Step \(page 47\)](#)
- Start Services—action only. This step starts all the WFM service.
- Finish Configuration—action only. This step configures the WFM Windows registry settings

ACD Connection Step

The ACD Connection step (Figure 7) configures which ACD is used with your WFM system.

Figure 7. ACD Connection step



Complete the fields as follows:

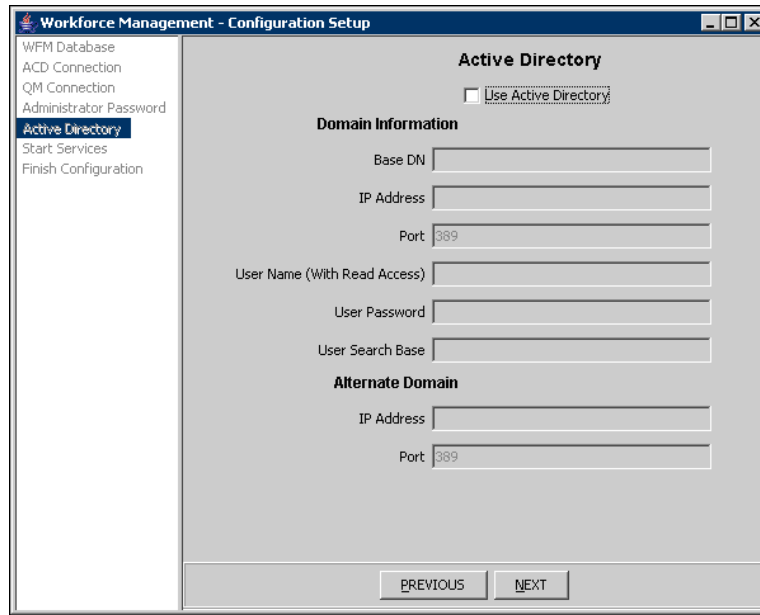
Table 15.

Field	Description
Select ACD	Select the version of Unified CCX used at your site.
Primary IP Address	Enter the primary IP address of the ACD.
Secondary IP Address	Enter the secondary IP address of the ACD, if this is a redundant system.
CTI Server	The CTI server(s) and port(s) associated with your system. to add a CTI server to the list, click Add and enter the CTI server IP address and port, then click OK.

Active Directory Step

The Active Directory step configures access to your Windows Active Directory.

Figure 8. Active Directory step



Complete the fields as follows:

Table 16. Active Directory step fields

Field	Description
Use Active Directory	Select the check box to use Active Directory. Note: If you are upgrading from a previous version of WFM, you cannot change using or not using Active Directory. You must configure the upgrade to the same settings as defined in the previous version of WFM.
Domain Information	
Base DN	The location in the directory server tree under which all active directory users are located.
IP Address	The IP address of the Active Directory server.
Port	The port number of the Active Directory server.
User Name (with Read Access)	The display name as configured in Active Directory of a user with read access to the Active Directory database.

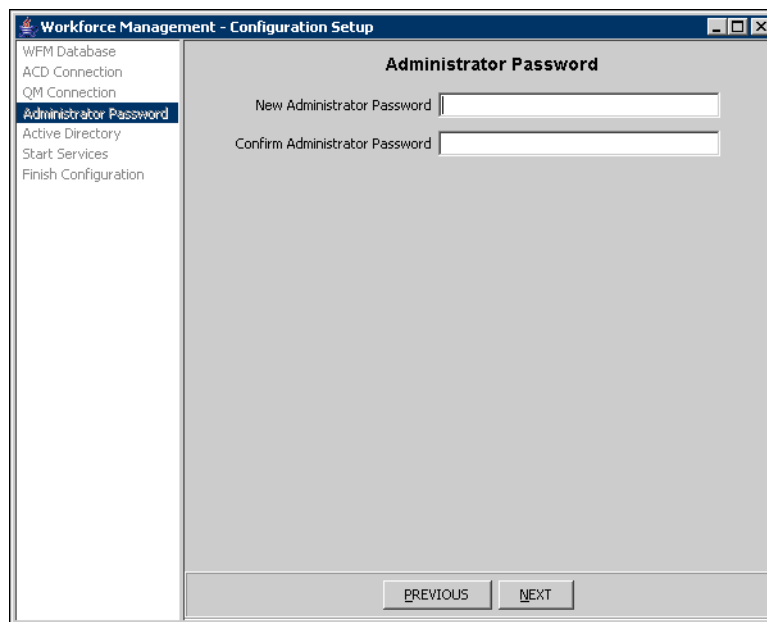
Table 16. Active Directory step fields (cont'd)

Field	Description
User Password	The user's password.
User Search Base	The path to organizational units (OU) for user records. The path must be specified from the most specific to the least specific (from left to right in the path statement). For example: ou=Users,ou=Minneapolis,ou=Minnesota,ou=US
Alternate Domain	
IP Address	The redundant Active Directory server's IP address, if there is one.
Port	The redundant Active Directory server's port.

Administrator Password Step

The Administrator Password step creates the password used by the WFM administrator to access the application. This step appears only in Initial Mode.

Figure 9. Administrator Password step



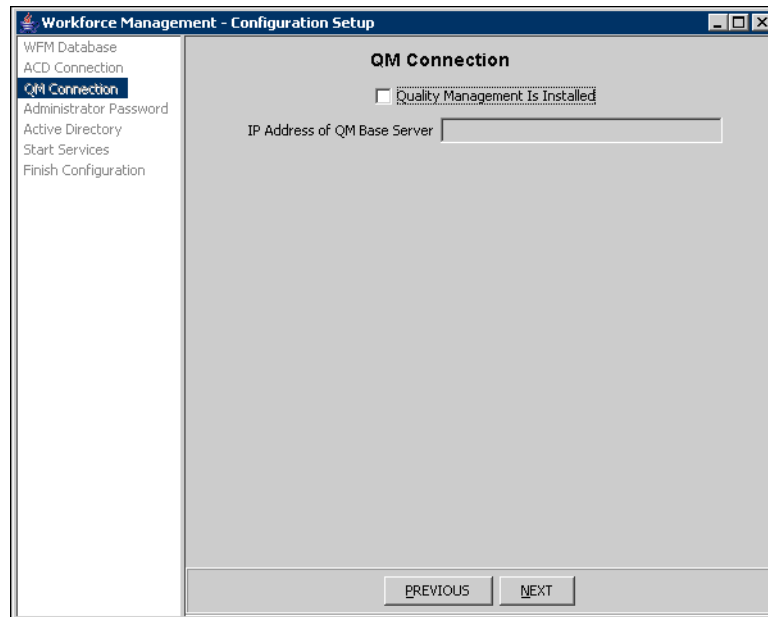
Enter the WFM administrator password in the New Administrator Password and Confirm New Administrator Password fields.

NOTE: Store this password in a safe place. You will need it to log into WFM as an administrator. The password can be changed using WFM Administrator.

QM Connection Step

The QM Connection step is used if you are using the Cisco Quality Management part

Figure 10. QM Connection step



of the Cisco Workforce Optimization suite.

Select the Quality Management is Installed check box if you are using QM, and then enter the IP address of the QM Base server.

WFM Database Step

The WFM Database step configures access to the WFM database.

Figure 11. WFM Database step

Complete the fields as follows:

Table 17. WFM Database step fields

Field	Description
Host Name or IP Address	Select if you are entering a host name or IP address of the machine that hosts the WFM database.
Host Name or IP	The host name or IP address of the machine that hosts the WFM database.
DB Instance Name	<p>The WFM database instance name.</p> <p>If this is a new installation of WFM, this field is prepopulated with the text “<default instance>”. Use the default value, the named instance, or leave the field blank. Leaving the field blank is the same as using the default instance.</p> <p>NOTE: If you are upgrading from a previous version of WFM, do not enter a named instance in this field. Use the prepopulated text “<default instance>.”</p>

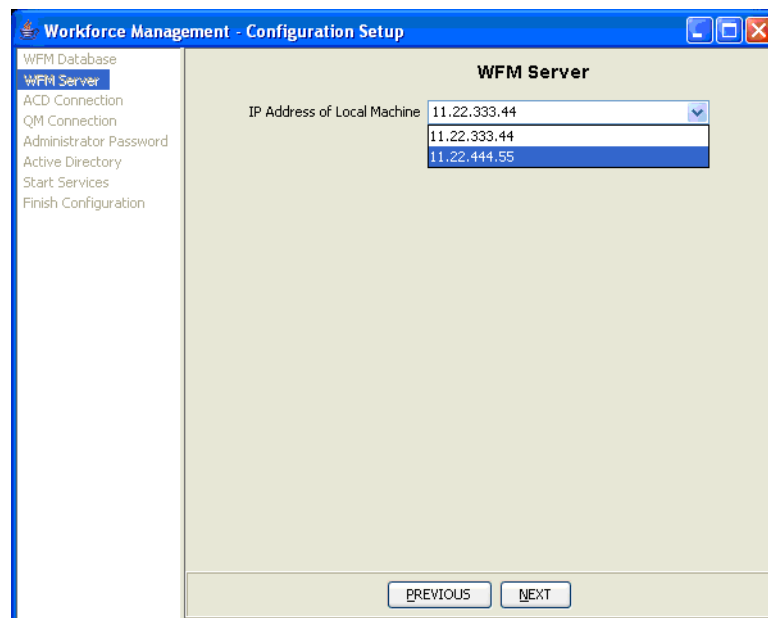
Table 17. WFM Database step fields (cont'd)

Field	Description
User Name	User name with access to SQL Server. The user is the one created when installing Microsoft SQL Server 2005. See "Creating a SQL Server Login for WFM" on page 30.
Password	User's password.

WFM Server Step

The WFM Server step configures the IP address of the server where WFM is installed. It appears only if Configuration Setup detects that there is more than one network interface card (NIC) on the server. Select the appropriate IP address from the drop-down list.

Figure 12. WFM Server step



Launching WFM Configuration Setup Manually

To launch WFM Configuration Setup manually:

1. Navigate to C:\Program Files\Cisco\WFO_WFM\bin. This is the default location. Your system might use a different location.
2. Run the executable file, postinstall.exe.

Capturing Historical Call Data

6

Overview

The WFM forecasting feature uses your contact center's historical contact data to estimate future call volume and scheduling requirements. The OOC Service retrieves data automatically every 30 minutes, starting from the time you installed WFM.

If you want to use historical contact data from the time before you installed WFM, you must complete the procedures in this chapter to capture the data manually.

For more information about the forecasting feature, see *Workforce Management Administrator User Guide for Cisco Unified Workforce Optimization*.

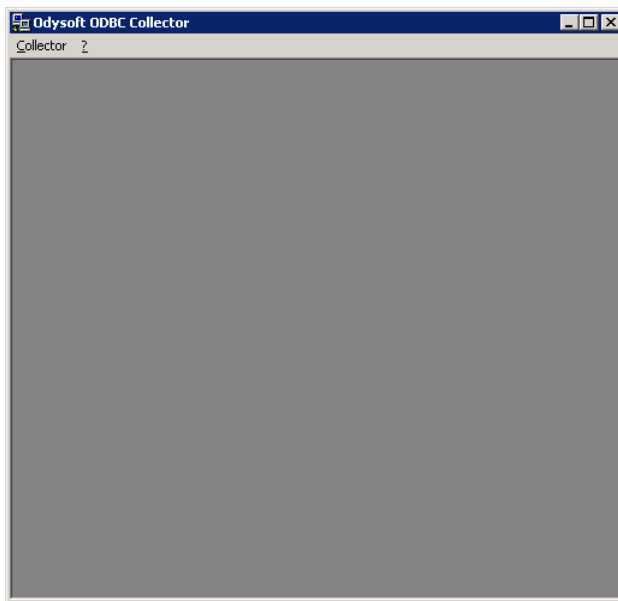
NOTE: You must complete the procedures described in this chapter immediately after you install WFM.

Capturing CSQ Historical Call Data for Unified CCX

To capture CSQ historical call data for Unified CCX:

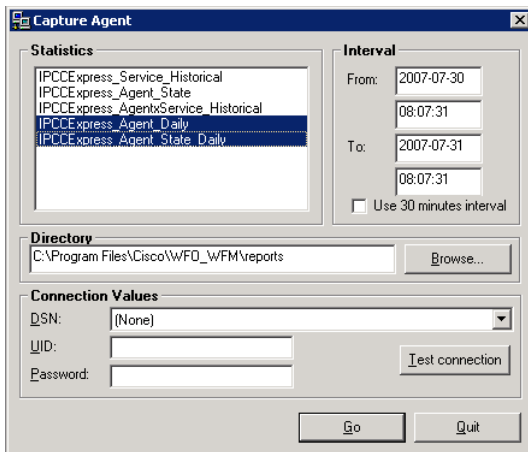
1. From the WFM server, choose Start > Programs > **Cisco**> WFO > WFM > OOC. The Odyssoft ODBC Collector window appears (Figure 13).

Figure 13. Odyssoft ODBC Collector



2. Choose Collector > Capture. The Capture Agent window appears (Figure 14).

Figure 14. Capture Agent - Historical CSQ data



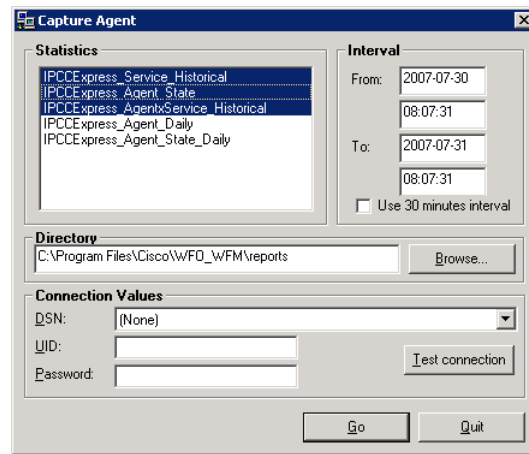
3. In the From fields in the Interval pane on the right, enter the beginning date and time for the historical call reference period. The date must be in the YYYY-MM-DD format, and the time in the 24-hour HH:MM:SS format.
4. In the To fields, enter the ending date and time for the historical call reference period.
5. Highlight the last two statistics queries in the Statistics pane as shown in [Figure 14](#).
6. Clear the Use 30 minutes interval check box.
7. Enter the following directory path in the Directory field:
`C:\Program Files\Cisco\WFO_WFM\reports`
8. Select the desired database instance name from the DSN field.
9. In the UID and Password fields, enter the user ID and password of a user with read/write access to the selected database.
10. Click Test connection to verify the connection is working.
11. Click Go to capture the historical call data. The reports are created and saved to the folder C:\Program Files\Cisco\WFO_WFM\reports.
12. When the hourglass disappears, click Quit to exit the Capture Agent window.
13. Choose Collector > Quit to exit Odysoft ODBC Collector.

Capturing Agent Historical Call Data for Unified CCX

To capture agent historical call data:

1. From the Odysoft ODBC Collector window, choose Collector > Capture. The Capture Agent window appears (Figure 15).

Figure 15. Capture Agent - Historical Agent data



2. In the From fields in the Interval pane on the right, enter the beginning date and time for the historical call reference period.
3. In the To fields, enter the ending date and time for the historical call reference period.
4. Highlight the first three statistics queries in the Statistics pane as shown in Figure 15.
5. Select the Use 30 Minutes Interval check box.
6. Enter the following directory path in the Directory field:
C:\Program Files\Cisco\WFO_WFM\reports
7. Select the Unified CCX DSN from the DSN field.
8. Enter the Unified CCX user ID and password.
9. Click Test Connection to verify the connection is working.
10. Click Go to capture the historical call data. The reports are created and saved to the folder C:\Program Files\Cisco\WFO_WFM\reports.
11. When the hourglass disappears, click Quit to exit the Capture Agent dialog.
12. Choose Collector > Quit to exit Odysoft ODBC Collector.

Verifying Historical Call Data Capture

When you finish capturing the historical call data for Unified CCX , the capture module processes the reports in the folder C:\Program Files\Cisco\WFO_WFM\reports and moves them to the folder C:\Program Files\Cisco\WFO_WFM\archives.

The historical contact data capture is complete when there are no more reports in the folder C:\Program Files\Cisco\WFO_WFM\reports.

Removing WFM

7

Overview

To remove WFM, you must proceed in the following order:

1. Remove all service releases (see ["Removing a WFM Service Release" on page 60](#)).
2. Remove WFM (see ["Removing WFM Services" on page 61](#))

Removing a WFM Service Release

Follow these steps to remove a Cisco Unified Workforce Management service release from a WFM server.

NOTE: If you cancel the removal process while it is running, the service release might continue to be listed in the Add or Remove Programs window, and you will not be able to remove or repair the service release, or reinstall it. Contact Cisco TAC for assistance. See the monthly *What's New in Cisco Product Documentation* for contact information:

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

To remove a Cisco Unified WFO Workforce Management service release:

1. Log into the WFM server as the local machine administrator.

NOTE: You can log into the WFM server remotely using Virtual Network Computing (VNC) software. See the documentation that came with your VNC software for instructions on establishing a remote connection to another machine.

2. Choose Start > Settings > Control Panel > Add or Remove Programs.
3. Select Cisco Unified WFO Workforce Management Service Release, click Remove, and follow the prompts.

During the removal process, a DOS window named srRollbackRepair.exe appears. Do not close this window. The srRollbackRepair.exe DOS window closes automatically.

4. Your computer automatically reboots. After the computer restarts, the system will be back to its base level software state.

Removing WFM Services

NOTE: When you remove WFO Workforce Management Services, the WFM database is not removed.

NOTE: If there is a service release installed on the Workforce Management server and you want to install WFM, you must remove the service release before you can remove WFM. See ["Removing a WFM Service Release" on page 60](#) for more information.

To remove Cisco Unified WFO Workforce Management Services:

1. Log into the WFM server as the local machine administrator.

NOTE: You can log into the WFM server remotely using Virtual Network Computing (VNC) software. See the documentation that came with your VNC software for instructions on establishing a remote connection to another machine.

2. From the Start menu, choose Settings > Control Panel.
3. Double-click Add or Remove Programs.
4. Select Cisco Unified WFO Workforce Management Services, click Remove, and follow the prompts.

The following table lists the programs you will find on the server.

Table 18. Applications on the server

Server	Applications to Remove
Cisco Unified WFO Workforce Management Server	Cisco Unified WFO Workforce Management Services*

* JRE and Tomcat are automatically removed when you remove Cisco Unified WFO Workforce Management Services.

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