Cisco Unified Workforce Optimization

Workforce Management Workforce Management Troubleshooting Guide Release 11.5

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Contents

Introduction

This document provides basic troubleshooting information for Cisco Workforce Management (WFM).

The troubleshooting information in this document includes:

- How to locate each service's configuration, log, and debug files.

- How to implement logging, which you can use to monitor your Workforce Management environment and troubleshoot issues.

- How to recognize and resolve some of the most common error conditions.

WFM Services

A WFM system contains the following services:

Installation Group	Components
Capture Services	WFM Capture service
Compile Services	WFM Compile service
iCalendar Services	WFM iCalendar service
Process Services	WFM Forecast service WFM Request service WFM Schedule service
Transaction Services	WFM Real Time Engine (RTE) service WFM Adherence Conformance Calculator (ACC) service WFM Jetty service WFM MANA service WFM Product Adapter service WFM Sync service

See the *Workforce Management Installation Guide* for information on configuration, hardware, and third-party software requirements.

Service Failure Effects

The following table describes the primary symptoms that appear when a WFM service fails to start.

> **Note:** The effects listed do not identify what happens when a service crashes.

Service	Effect of Failure
ACC service	Historical adherence and conformance data does not appear in reports.
Capture service	Historical data cannot be retrieved from synchronized ACDs and GIS files.

Service	Effect of Failure
Compile service	Historical data cannot be compiled by day, week, month, or year.
iCalendar service	Schedule data cannot be retrieved.
Forecast service	Distribution/forecast requests cannot be run.
Request service	Shift budget analysis requests cannot be run.
RTE service	Adherence module cannot receive agent state changes.
Schedule service	Schedule requests cannot be run.
Sync service	Agent, team, and service queue information is not automatically synchronized with the Unified CCE or Unified CCX ACD.
Jetty service	Users are unable to log in to WFM.
Product Adapter service	Data is not rendered to Unified Workforce Optimization.
Mana service	Failure notifications are not received.

WFM Database

WFM Application Failover

There is no solution-level automated failover or autorecovery for the WFM database in the WFM application.

> **Best Practices**: It is recommended that you back up the WFM database daily using the SQL Server backup utility.

ACD Failover

WFM automatically connects to a secondary Cisco Unified CCE/CCX database (if a secondary ACD exists and is configured in Postinstall) when the primary ACD fails.

Failover in non-Unified CCE/CCX environments is handled at the ACD's end. Since in these environments, ACD information is sent to WFM as text files at regular intervals, either the primary or secondary ACD can generate those files.

SQL Server Maintenance Recommendations

SQL Server requires regular maintenance to ensure peak performance. You can automate the maintenance task and schedule it for once a week during off-peak hours.

The common database maintenance tasks include:

- Checking data integrity. This task checks the structural integrity of the data and verifies the database is not corrupt.

- Reorganizing/rebuilding indexes. This task defragments the database indexes. Index fragmentation can cause performance issues. Indexes should be rebuilt using the Offline option in a non-Enterprise version of SQL Server.

- Updating statistics. This task performs sampling of the data in the database to optimize tables and indexes so they can be used more efficiently, thus increasing performance for the distribution of data in the tables.

- Backing up and managing log files. Regular database and transaction log backups are recommended along with truncating/shrinking the transaction logs to free up disk space and gain efficiency.

Backing Up and Restoring the WFM Database

This section describes how to back up and restore the WFM database using Microsoft SQL Server management tools.

Note: WFM supports the backup and restore only of the current version, not from one version to the next.

Note: If Cisco Security Agent (CSA) is running on your WFM server, shut CSA down before you back up the WFM database. The backup might fail if CSA is running while you use the SQL Server backup utilities.

Use the Backup and Restore features available in the Microsoft SQL Server Management Studio to back up and restore WFM databases.

Note: After you back up the WFM database, it is advisable to copy the backup files to another location for safekeeping.

Backing Up the WFM Database

Follow these steps to back up the WFM database.

To back up the WFM database:

1. On the server that hosts the WFM database, launch and log in to Microsoft SQL Server Management Studio.

2. Right-click the database name (CWFM) under the Databases node. A menu appears.

3. Choose Tasks > Back Up. The Back Up Database-CWFM window appears.

4. Complete the fields and click OK.

Restoring the WFM Database

Follow these steps to restore the WFM database.

To restore the WFM database:

1. Close Unified Workforce Optimization.

2. In the Windows Services utility, stop all the WFM services.

3. On the server that hosts the WFM database, launch and log in to Microsoft SQL Server Management Studio.

4. Right-click the database name (CWFM) under the Databases node. A menu appears.

5. Choose Tasks > Restore > Database. The Restore Database - CWFM window appears.

6. Complete the fields and click OK.

7. Restart all the WFM services.

Defragmenting the System Hard Disk and the WFM Database

When WFM starts responding slowly and tasks take longer than normal to perform, it is time to defragment the WFM system hard disk and the WFM database.

Defragmenting the WFM Database Server

Use the administrative tools on the database server to defragment the server. Consult the OS documentation for details on defragmenting the disk.

Defragmenting the WFM Database Indexes

The data in the WFM database can often become highly fragmented after prolonged use. Rebuilding the database indexes will reorganize the data into a more efficient structure and can improve the performance of the system.

To defragment the indices of WFM database:

1. Log on to the WFM system as an administrator.

2. On the SQL Server computer, start Microsoft SQL Server Management Studio and log in. The Microsoft SQL Server Management Studio window appears.

3. In the navigation pane, under the Databases node, right-click the database name (CWFM) and select Reports > Standard Reports > Index Physical Statistics from the menu.

4. The Index Physical Statistics report will tell you which indexes need to be rebuilt or reorganized. Consult the SQL Server Management Studio documentation for instructions on how to do this.

5. You can also run a query to find out how much each index is fragmented and use that as a guide for rebuilding/reorganizing indexes. The query is as follows:

    SELECT sn.name as schemaName, so.name as TableName, si.name As IndexName,

    si.type_desc, index_depth, index_level,

    avg_fragmentation_in_percent, fragment_count,

    avg_fragment_size_in_pages, page_count,

    avg_page_space_used_in_percent

    FROM sys.dm_db_index_physical_stats(DB_ID(), NULL, NULL, NULL, 'LIMITED') As phystat

JOIN sys.objects so ON phystat.object_id = so.object_id

JOIN sys.indexes si ON so.object_id = si.object_id

JOIN sys.schemas sn on so.schema_id = sn.schema_id

    AND phystat.index_id = si.index_id

WHERE so.type = 'U'

ORDER BY avg_fragmentation_in_percent desc, TableName, IndexName

The fragmentation should ideally be 0 for all tables. High levels of fragmentation will cause an extreme amount of delay when data from the table is requested. Another key indicator for WFM performance is the fragmentation level plus the page count. A table can have significant fragmentation, but if it has a low page count, then the effects of fragmentation might or might not be noticed.

Logs and Debugging

Applications and services use logging to report status and problems. Each application and service creates two files:

- **Log files** (files with the LOG file extension) contain status messages and, if problems occur, warning and other error messages. All messages in log files are identified by an error code. See for more information on error codes.

- **Debugging files** (files with the DBG file extension) are empty when debugging is not enabled. When debugging is enabled (the default setting), the files contain diagnostic information that can help resolve issues.

Log and debugging files are located in the C:\Program Files (x86)\Cisco\WFO_WFM\log folder on the client or server computer.

By default, logging is enabled.

The default configuration settings limit each debugging file to a maximum of 10 MB and 20 rolling files for WFM services and 5 MB and 5 rolling files for applications. Configuration files are located in the C:\Program Files (x86)\Cisco\WFO_WFM\config folder on the client or server computer.

> **Example:** When a service's debug file reaches 10 MB, it is closed and renamed, and a new file is started.

Configuration files with the CFG extension produce logs using this numbering scheme:

> <name>0001.log is created and filled.
> <name>0002.log is created when the first file is full.
> <name>0001.log is cleared and reused when <name>0002.log is full.
> <name>0002.log is cleared and reused when <name>0001.log is full.
> And so on.

Files with the PROPERTIES extension produce logs using this numbering scheme:

> <name>.log is always the file currently being filled.
> <name>.log.1 is the most recent filled file.

Debugging logs follow these same numbering schemes, but use the DBG file extension instead of the LOG file extension.

Log Message Formats

The following are the formats used by the various log and debug file messages and an example of that format.

Message Type	Format / Example
C++ and Java log files	<timestamp> <level> <error code> <error text> 2015-2-10 12:44:17,703 INFO WMP10000 Starting WFM Post Install
C++ debug files	<timestamp> [<thread ID>] <level> <text> 2015-02-12 10:10:21:015 DEBUG [0xfac] corbaInitialize:: Server port is <59011>
Java debug files	<timestamp> <level> [<thread name>] <class:line> <text> 2015-04-07 15:40:31.954 STACK [Th2] Init#:run:113 ClaimException...
Java log4j log files	<timestamp> [<thread name>] <level> [LINE-<number>] [<class:method>] <text> 2015-04-07 14:54:00,067 [Th2] INFO [LINE-1534] [Init:un] Started.

Configuration Files

Each application and service has an associated configuration file that controls logging and debugging (among other things). These files can be edited in a text editor to change the logging and debugging parameters.

Configuration files are located in the ...\Cisco\WFO_WFM\config folder on the client or server computer.

Log and debug files are located in the ...\Cisco\WFO_WFM\log folder on the client or server computer.

> **Caution:** Edit configuration files only as described in this section. Improper changes can result in logging and/or program failure, including the possible loss of data. You might want to make a safety backup of any file you edit before you make changes to it.

The WFM configuration and log files are listed in the following table.

Application	Configuration File	Log/Debug File
ACC service	wfm_acc_log-ger.properties	WFM_ACCnnnn.log WFM_ACCnnnn.dbg

Application	Configuration File	Log/Debug File
Capture service	wfmcapture.properties	wfmcapturennnn.log wfmcapturennnn.dbg These files include product, version, and build information in the header.
Configuration service	postinstall.properties	postinstall.log postinstall.dbg
Forecast service	wfmforecast.properties	wfmforecastnnnn.log wfmforecastnnnn.dbg
GIS API tool	P$CAPTURE.CAL	
iCalendar service	C1Calendar.properties	C1Calendarnnnn.log
Jetty service	jetty.properties C1Surrogate.properties	jetty.dbg jetty-request-YYYY_MM_DD.log C1Surrogatennnn.dbg C1Surrogatennnn.log
Mana service	manaservice.properties	manannnn.dbg manannnn.log
Product Adapter service	wfmadapter.properties wfm.properties	wfmadapternnnn.dbg wfmadapternnnn.log These files include product, version, and build information in the header.
Request service	wfm_request_log-ger.properties	wfmrequestnnnn.dbg wfmrequestnnnn.log
RTE service	service4j-wfmrte.cfg wfmrte.properties	service4j-wfmrtennnn.dbg service4j-wfmrtennnn.dbg
Sync service	SyncServer.cfg	SyncServernnnn.log

Enabling Debugging

By default, debugging is enabled. When debugging is enabled, keep in mind that the more detail the debugging threshold provides, the slower the performance of your PC and the bigger the size of the debug file (the maximum size of the file is determined by the configured limit). High debugging thresholds might also affect the performance of other applications running on your PC.

There are four types of configuration files, each with a different extension:

- CFG files

- PROPERTIES filesl

- log4j files

- CAL files

Each type of file uses a different syntax to enable debugging. The procedures below describe the steps that must be followed for each type of file.

> **Important:** Disable debugging when it is no longer needed.

The available debugging thresholds are displayed in the following table.

> **Note:** Not all thresholds can be used in all configuration files. See the procedures below for which thresholds can be used in particular files.

Threshold	Description
Info	Tracks significant events during the normal life cycle of the application. Information messages are not errors and require no corrective action. This information can be useful when troubleshooting. It also can be used as historical status information.
Debug	Usually sufficient for diagnosing a problem. Will not affect system performance.
Call	Tracks function entry and exit.
Trace	Provides a large amount of diagnostic information. May affect system performance.
Stack	Provides only stack traces, which give more debugging information when errors and warnings occur.
Dump	Provides a very large amount of detailed diagnostic information. Likely to affect system performance.
Off	Turns off debugging.

Enabling Debugging in CFG Files

1. In a text editor, open the desired configuration file.

2. Under the section headed [Debug Log], locate the line that starts with:

   Threshold=<threshold>

3. Replace <threshold> with DEBUG, CALL, TRACE, DUMP, or OFF. The line might already exist or you might have to add a new line.

4. Save the configuration file.

   The change takes effect immediately. You do not have to restart the application or service.

Enabling Debugging in PROPERTIES Files

1. In a text editor, open the desired configuration file.

2. Locate the line that starts with:

   log4j.rootLogger=<threshold>#com.cisco ...

3. Replace <threshold> with DEBUG, TRACE, STACK, or DUMP.

4. Locate the line that starts with:

   log4j.appender.DBG.Threshold=<threshold>#com.cisco ...

5. Replace <threshold> with the same value you used in Step 2.

6. Save the configuration file.

   The change takes effect according to the splk4j.watch.check setting (by default, within 90 seconds). You do not have to restart the application or service.

Enabling Debugging in log4j Files

1. In a text editor, open the desired configuration file.

2. Locate the line that starts with:

   log4j.rootLogger=<threshold>

3. Replace <threshold> with DEBUG or TRACE.

4. Save the configuration file.

   Restart the application or service for the new setting to go into effect.

Enabling Debugging in CAL Files

1. In a text editor, open the desired configuration file.

2. Ensure that the following lines are set as follows:

   LogMessage=ON
   DebugMessages=<threshold>

   Replace <threshold> with DEBUG, TRACE, or DUMP.

3. Save the configuration file.

4. Restart the application or service for the new setting to go into effect.

Disabling Debugging

It is important to disable debugging when it is no longer needed for diagnostic purposes. Debugging can affect the performance of your PC if it is left enabled.

Disabling Debugging in CFG Files

1. In a text editor, open the desired configuration file.

2. Under the section headed [Debug Log], set the debugging threshold to OFF as follows:

   Threshold=OFF

3. Save the configuration file.

   The change takes effect immediately. You do not have to restart the application or service.

Disabling Debugging in PROPERTIES Files

1. In a text editor, open the desired configuration file.

2. Locate the line that starts with:

   log4j.rootLogger=<threshold> ...

3. Replace <threshold> with STACK.

4. Locate the line that starts with:

   log4j.appender.DBG.Threshold=<threshold> ...

5. Replace <threshold> with OFF.

6. Save the configuration file.

The change takes effect according to the splk4j.watch.check setting (by default, within 90 seconds). You do not have to restart the application or service.

Disabling Debugging in log4j Files

1. In a text editor, open the desired configuration file.

2. Locate the line that starts with:

   log4j.rootLogger=<threshold>

3. Replace <threshold> with OFF.

4. Locate the line that starts with:

   log4j.appender.DBG.Threshold=<threshold>

5. Replace <threshold> with OFF.

6. Save the configuration file.

   Restart the application or service for the new setting to go into effect.

Disabling Logging and Debugging in CAL Files

1. In a text editor, open the desired configuration file.

2. Ensure that the following lines are set as follows:

   LogMessage=OFF
   DebugMessages=OFF

3. Save the configuration file.

4. Restart the application or service for the new setting to go into effect.

Error Messages

See the *Workforce Optimization Error Code Dictionary* for a complete list of error messages.

Troubleshooting

Diagnostic Procedures

The following procedures will help you diagnose problems with WFM.

Basic Checks

When WFM is having problems, check the following:

- The components of your WFM system are running. This includes:

ACD	Component
Cisco Unified CCE	Cisco Unified Communications Manager Cisco Unified Intelligent Contact Manager
All	Servers that host the WFM services

- The hard drives of the servers that host the WFM services and the optional offboard SQL Server are not full

- The registry is correct (see Registry Check)

- The network is set up correctly (see Network Check)

- The SQL Server is set up correctly and running (see SQL Server Check)

- The WFM services are running

- The WFM Configuration Setup utility has run correctly (see the *WFM Installation Guide*)

Blocked Ports Check

To check whether a port is blocked:

1. Ensure that the blocked service is running and active.

2. On the server that hosts the WFM services or any client desktop, open a command window and enter the following command:

   telnet <service computer host name/IP address> <service computer port>

   See the *WFM Installation Guide* for a list of the ports used by each WFM service.

   If the telnet operation is successful, the command window will clear. If the telnet operation fails, a connection failure message will appear.

3. Enter the following command to retrieve a list of all processes that are listening for connections and the ports used to listen:

    netstat -abo

    If you cannot find the service in the output of this command, then the service is not running, something is preventing the service from listening on the port, or there is something wrong with the service.

4. Check firewall settings on the client and server computers.

5. Check firewall logs.

6. If security software is running on the computer, check its reports and logs to see if it is blocking any communication or ports.

CPU Check

Ensure that the computer's processor is at least the minimum required for WFM and other installed software. If the processor is below the recommended level, it could be the cause of the problem.

Use Task Manager to sort processes and applications by CPU usage. Check which process seems to be using the CPU most of the time.

Use the Microsoft Performance Monitor utility (perfmon.exe, available in the Microsoft Download Center) for additional CPU checking.

- Add the % Processor Time counter for Processor > _Total and each CPU as well as Process >_Total and process of interest.

- Check which process seems to be using the CPU most of the time.

If the counter values for a process are a significant part of the total CPU use, it might be of concern. Short spikes are acceptable but a significant time with high CPU usage is of concern.

Try rebooting the computer to see if it fixes the problem.

Keystore Check

- Verify that C:\Program Files (x86)\Common Files\WFM\config\.keystore exists.

- Verify the self-signed WFM certificate.

- Verify the CA-signed WFM certificate.

- Verify the root and intermediate CA certificates.

Verify the Self-signed WFM Certificate

In a command window, run the following command:

"C:\Program Files (x86)\cisco\WFO_WFM\Java\bin\keytool.exe" -keystore "C:\Program Files (x86)\Common Files\WFM\config\.keystore" -storepass Sp@nl1nk -list -v

The WFM certificate has the Alias name "wfm_webserver". It should look something like the following, where 10.192.246.12 is the IP address of the WFM Transaction services server:

Alias name: wfm_webserver

Creation date: Jan 31, 2014

Entry type: PrivateKeyEntry

Certificate chain length: 1

Certificate[1]:

Owner: C=US, ST=MN, L=Minneapolis, O=ciscoInc, OU=Workforce Management, CN=1

0.192.246.12:443

Issuer: C=US, ST=MN, L=Minneapolis, O=ciscoInc, OU=Workforce Management, CN=

10.192.246.12:443

Serial number: 2a250ca462

Valid from: Thu Jan 30 07:30:40 CST 2014 until: Tue Jan 30 07:30:40 CST 2114

Certificate fingerprints:

      MD5: 3A:7F:A7:C3:E0:7A:58:1D:3A:44:F4:9F:F0:0A:C4:9E

      SHA1: 21:58:DF:26:1F:BA:A1:58:A7:A0:85:4D:44:73:B2:54:51:AA:75:FF

      SHA256: 58:27:8C:BA:3D:07:3F:E0:20:F0:23:11:E1:51:7B:6E:20:96:57:40:4C:

      D0:F3:CC:5E:76:6E:0B:32:A6:74:4C

      Signature algorithm name: SHA1withRSA

      Version: 1

Note that a self-signed WFM certificate will show both the issuer and owner as "C=US, ST=MN, L=Minneapolis, O=ciscoInc, OU=Workforce Management, CN=10.192.246.12:443".

Rebuild the WFM Keystore

Use the following steps on the WFM Transaction services server to rebuild the WFM keystore if it becomes corrupted. This procedure assumes you already have CA certificates in the keystore.

1. Using the Windows Services utility in the Control Panel, stop the WFM Jetty service.

2. Enter the following command on the command line:

"C:\Program Files (x86)\cisco\WFO_WFM\Java\bin\keytool.exe" -keystore "C:\Program Files (x86)\Common Files\WFM\config\.keystore" -storepass Sp@nl1nk -exportcert -rfc -alias rddc01 -file rddc01_root_x509.cer

replacing "rddc01" with the CA authority and "rddc01_root_x509.cer" with the name of the output file.

3. Repeat Step 2 for every CA certificate you want to preserve.

4. Delete the WFM keystore located on this path:

    C:\Program Files (x86)\Common Files\WFM\config\.keystore

5. Run WFM Configuration Setup to completion. This results in the self-signed WFM certificate to be recreated in the WFM keystore.

6. Sign the WFM certificate.

Memory Check

Ensure that the amount of memory on the computer is at least the minimum required for WFM and other installed software. If the amount of memory is below the recommended level, it could be the source of the problem.

Use the Microsoft Performance Monitor utility (perfmon.exe, available in the Microsoft Download Center) to perform most memory checking. Add the following counters for _Total and process of interest:

- Private Bytes

- Virtual Bytes

- Handle Count

- Thread Count

If the values for those counters keep growing without leveling out or decreasing, it is likely the process has a memory leak.

If the values for those counters for a process are a significant part of the total memory used, it might be of concern. Note that certain processes will normally use more memory than others.

Try rebooting the computer and see if it fixes the problem. Check how much and how fast processes increase their memory usage.

Network Check

On the servers that host the WFM services, verify that the IP address in the registry value

    HKEY_LOCAL_MACHINE\SOFTWARE\cisco\WFM\Site Setup\IOR HOSTNAME (32-bit machines)

HKEY_LOCAL_MACHINE\ SOFTWARE\Wow6432Node\cisco\WFM\Site Setup\IOR
HOSTNAME (64-bit machines)

is the correct IP address of the public NIC.

To view information about the NICs on the computer:

1. Open a command window and enter ipconfig /all.

2. Verify that the host name and IP address are as expected.

3. Verify that the subnet mask is correct. It is probably 255.255.255.0.

If there are multiple NICs enabled, verify that the public NIC comes before the private NIC:

1. In the Control Panel, select Network and Sharing Center.

2. In the left-hand column, select Change adapter settings.

3. In the New Connections window, select Alt to show the menu bar, then choose Advanced >
   Advanced Settings.

4. On the Adapters and Bindings tab, verify that the NICs are in the correct order in the Con-
   nections pane.

Check the network connectivity by pinging from the WFM services server to others in the
configuration, for example, the server that hosts the Cisco Unified CM.

Then reverse it by pinging from the other servers to the WFM services server. Do this using both host
names and IP addresses and ensure that the ping results match.

If host names are used, verify that the DNS, WINS, and hosts files are correct.

If there is a problem connecting to a particular service, one the servers hosting the WFM services or
any client machine, try entering telnet <service IP address/host name> <service port> in a command
window. (see the *WFM Installation Guide* for a list of the ports used by each WFM service).

Use a network protocol analyzer like Wireshark to analyze network communications.

If security or firewall software is running on the computer, check its reports and logs to see if it is
blocking any communication or ports. Exceptions or rules should be configured to allow connections
between WFM services and ports.

Verify that dynamic IP is not being used on the WFM services server. Otherwise, the IP address can
change and no longer match what is configured in the registry and the WFM database.

For additional information about troubleshooting basic TCP/IP problems, see "How to Troubleshoot
Basic TCP/IP Problems" on the Microsoft Support website.

SQL Server Check

If not using an offboard SQL Server, ensure a supported version of SQL Server is installed on the
server that hosts the WFM Transaction services.

If using an offboard SQL Server, ensure that SQL Native Client is installed on all WFM servers where SQL Server is not installed.

If using a historical database (HDS) and an administrative workstation (AW) database, ensure that the SQL Server login has access to both databases.

Ensure the SQL Server login entered in WFM Configuration Setup is configured as follows:

- Uses SQL Server Authentication

- Is assigned the dbcreator and sysadmin server roles

- Does not enforce password policy

> **Note:** If the SQL Server login user name or password is modified after WFM is installed, WFM must be reinstalled.

Make sure that the SQL Server Browser is started:

1. Start the Windows Services utility.

2. Verify that SQL Server Browser is started and has a Startup Type of Automatic

Ensure that the SQL instance specified in Postinstall is correct:

1. On the computer where SQL Server is installed, start the Windows Services utility.

2. The SQL instance name should be inside parentheses after SQL Server.

> **Example:** `SQL Server (SQLExpress)`

It is possible that the SQL Server is using the default instance. To determine if it is:

1. Start SQL Server Management Studio.

2. In the Connect to Server dialog, select SQL Server Authentication in the Authentication field. Enter the IP address of the computer where SQL Server is installed in the Server name field.

   If the login is successful, SQL Server is using the default instance.

Ensure that the password entered in WFM Configuration Setup is correct by re-entering it and letting Configuration Setup restart the WFM services.

If using an offboard SQL Server, perform a to verify that the WFM servers can communicate with the offboard SQL Server.

Run WFM Configuration Setup to apply any necessary DB schema changes. Use the Next button to navigate from step to step instead of using the navigation pane on the left, which can cause you to skip some necessary steps (especially after an upgrade or installing a patch).

Try connecting to the WFM database manually from the same computer as the application using the information specified in WFM Configuration Setup.

Make sure that the SQL Server database is not full and SQL transaction logs have not filled up the hard disk.

Ensure that the SQL Server database is not highly fragmented.

Version Check

DLL and EXE Files

1. Select the DLL or EXE.

2. Right-click and select Properties.

3. On the Details tab, verify that the file version and production version property fields display the expected version.

JAR and WAR Files

1. Open the JAR or WAR using WinZip or 7Zip.

2. Open the META-INF > MANIFEST.MF file in Notepad.

3. Check that the Specification-Version and Implementation-Version fields display the expected version.

LOG and DBG Files

The version information for the JAR, DLL, and EXE used by the application is listed at the top of the application's log and debug files.

Administration Problems and Solutions

Agents who do not exist in the WFM database appear in reports

Problem	Agents who do not exist in the WFM database appear in reports. The following message appears in the log: Failed to add the skill. An unexpected exception occurred.
Cause	A failure occurred when the Sync Service tried to add agents to the database. Unified CCX is case sensitive and WFM is not case sensitive. **Example:** Agent John Doe's user ID in Unified CCX is johndoe. The Sync Service adds johndoe to the WFM database. Agent John Doe is then deleted from Unified CCX and the Sync Service deactivates johndoe in the WFM database. Agent John Doe is then entered again in Unified CCX with the user ID, JohnDoe. The Sync Service generates an error due to the unique ID constraint—it considers johndoe and JohnDoe to be the same user ID, while Unified CCX does not.
Solution	Use unique user IDs for each user in Unified CCX. Do not enter identical user IDs in Unified CCX where the only difference between the two user IDs is case.

A user modifies the ID or name of a team

Problem	A user modified the ID or name of a team.
Cause	A user modifies the ID or name of a team that is administered in the ACD, and that are synced with WFM. Examples of such ACDs are Cisco Unified Contact Center Enterprise or Cisco Unified Contact Center Express.
Solution	Restart the Sync service to synchronize the ACD database with the WFM database.

A user mistakenly deletes a service queue or a team

Problem	A user mistakenly deletes a service queue or a team.

Cause	The service queue or team is administered in the ACD, and are synced with WFM. Examples of such ACDs are Cisco Unified Contact Center Enterprise or Cisco Unified Contact Center Express.
Solution	Restart the Sync service to synchronize the ACD database with the WFM database.

Some or all historical information is missing

Problem	Some or all historical data is missing when it is imported from the Cisco Unified CCE ACD.
Cause	Check to see if your ACD compiles historical data at 15-minute intervals. If it does, and if you have configured WFM to capture historical data at 30-minute intervals (the default setting), then half the historical data is not captured.
Solution	1. Start WFM Configuration Setup (postinstall.exe). 2. On the ACD Connection step, select 15 minutes as the historical reporting interval. 3. Restart the Capture service.

Pop-up windows do not appear

Problem	Popup windows do not appear after clicking their corresponding links in WFM.
Cause	Popups are being blocked by the browser.
Solution	Turn off the browser's popup blocking options.

Credentials are not correct

Problem	The following message appears when the user logs into Unified Workforce Optimization. Credentials are not correct. Try again.
Cause	• The user did not enter the credentials correctly. • The user is not assigned a role.

Solution	• Reenter the login information and try again. • Assign a role to the user in WFM.

Stop running this script

Problem	When viewing a Planning page, the error message, "Stop running this script" appears.
Cause	This problem is due to a Microsoft Internet Explorer issue.
Solution	For information on correcting this issue, see Microsoft Support Article ID 175500, available at http://support.microsoft.com/kb/175500

Capture Service Problems and Solutions

All ACDs

Captured data does not match what is reported on the ACD

Problem	ACD data and the corresponding WFM captured data do not match. The contact data reported by WFM is too low.
Cause	The Capture service pulls ACD statistics 15 minutes after an interval ends. If the contact center has calls in progress for longer than 15 minutes at this time, then those calls are not included in that data capture.
Solution	The capture delay and optional daily recapture of data is configured in Postinstall in the ACD Connection step. Set the capture delay to a value greater than the default 15 minutes, and if necessary, enable daily data recapture. See the *WFM Installation Guide* for more information on configuring capture settings.

WFM uninstaller can't stop Capture service

Problem	The WFM uninstaller can't stop the Capture service.
Cause	When uninstalling WFM software via the Control Panel Programs and Features utility, the WFM uninstaller can't stop the Capture service, and eventually times out. The Capture service is left in a stopping state.
Solution	Reinstall WFM, manually, stop the Capture service, and then use the Programs and Features utility to uninstall WFM.

Capture rejects .agent files with 15-minute timespans

Problem	The Capture service rejects .agent files with 15-minute timespans.
Cause	All six files (.agent, .vdn, and .skill files for each 15-mnute timespan that makes up a 30-minute interval) need to be present in the Reports folder in order for the Capture service to process them. WFM combines the data in the files into data for a single 30-minute interval.
Solution	Ensure that all required files are present in the Reports folder.

Cisco Unified Contact Center Express ACD

Historical data is not captured

Problem	Historical data is not captured.
Cause	Applies to WFM 9.2(1) SR3 and newer. In WFM Configuration Setup, on the ACD Connection step, the "Use GIS to capture ACD historical data manually" check box is selected.
Solution	If you want WFM to capture data automatically by querying the ACD database, make sure this check box is cleared. Select the check box only if you intend to use GIS to capture historical data.

Compile Service Problems and Solutions

Nearly everything needed to diagnose WFM Compile service problems can be found in the default log files at the DEBUG level and up. Enabling TRACE or DUMP is necessary only if you need to see the queries being executed.

Failed queries are logged at the DEBUG level or higher.

Forecast Service Problems and Solutions

Distributions

Distribution request fails: no historical data exists for the service queue/named distribution for the selected days of the week/reference period

Problem	Distribution request fails: no historical data exists for the service queue/named distribution for the selected days of the week/reference period
Cause	One or more of the following can result in no reference data for at least one of the selected distribution days of the week, causing the distribution request to fail: ■ There is no or bad data for the reference date. ■ The reference dates include closed days for the service queue. ■ The reference dates include special events for the service queue.
Solution	**Note**: WFM 9.2(1) SR1 ES1 contained a fix that allows a distribution request to succeed if at least one of the selected distribution days of the week have reference data. For earlier releases, use the following workaround. Try the following to allow the distribution request to succeed: ■ Use the View and Edit Historical Data page to check the data on reference dates. ■ Select additional or different distribution days of the week. ■ Change the reference dates. ■ Change or delete closed days and special events for the service queue. ■ Run Capture Historical Data if there was an earlier problem in capturing the data.

Distribution has no data for a day of the week

Problem	The distribution has no data for a day of the week.

Cause	Possible causes are:
	■ The day of the week was not specified in the distribution request.
	■ The reference days have no data for that day of the week.
	■ There are closed days or special events for that day of the week in the reference period.
Solution	Solutions include:
	■ No day of the week specified: Make sure the day of the week is selected when making the distribution request.
	■ No reference dates data: This is expected behavior. Use the View and Edit Historical Data page to check the data on the references dates chosen. If that day of the week normally has calls, change the reference dates to include dates with data. Run Capture Historical Data if there was an earlier capture problem.
	■ For closed days/special events: This is expected behavior. Change or delete the closed days and special events for the service queue, or change the reference dates to a period with no closed days/special events.

Forecasts

The forecast does not have correct data for firm dates

Problem	The forecast does not have correct data for firm dates.
Cause	Possible causes are:
	■ There is no or bad data for firm date reference dates
	■ Firm date reference dates configured have the wrong year (WFM defaults to the previous year)
	■ The firm date was configured with the wrong reference and target date
Solution	Solutions include:
	■ Use the View and Edit Historical Data page to check the data for Firm DAte reference dates
	■ Change firm dates to have the correct reference and target dates

The forecast has no data for a date specified in the forecast date range

Problem	The forecast has no data for a date range specified in the forecast date range.
Cause	These causes apply to versions before WFM 9.3(1) SR2: ■ There is no data on that day of the week in the distribution ■ There is no historical data for the day of the week
Solution	Solutions include: ■ Use a distribution that has data on that day of the week. ■ Create historical data for the day of the week.

The forecast has only zeroes for a date specified in the forecast date range

Problem	The forecast has only zeroes for a date specified in the forecast date range.
Cause	Possible causes include: ■ The date is a closed day configued for the service queue ■ The distribution has no data for the day of the week (applies to WFM 9.3(1) SR2 and newer) ■ There is no historical data for the day of the week (applies to WFM 9.3(1) SR2 and newer)
Solution	Solutions include: ■ Change or delete the closed days for the service queue. ■ Create or use a distribution with data for the day of the week. ■ Create historical data for the day of the week.

iCalendar Problems and Solutions

Agent cannot connect with iCalendar service

Problem	The agent cannot connect with the iCalendar service.
Cause	The host or port in the URL is incorrect.
Solution	Check that the host and port in the URL are correct. The port should be 4430 for a secure URL (https) and 8086 for an unsecure URL (http). These ports should be accessible from the iCalendar client device.

The agent receives an HTTP 401 error (Unauthorized)

Problem	The agent receives an HTTP 401 error (Unauthorized).
Cause	The agent is not using the correct credentials, or the agent is not an agent in WFM.
Solution	Ensure that the agent is using the correct username and password. Note that the user must be an agent: only agents can use the iCalendar service.

The agent receives an HTTP 403 error (Forbidden)

Problem	The agent receives an HTTP 403 error (Forbidden).
Cause	This error might occur if the calendar client application used by the agent polls the iCalendar service too often.
Solution	Reduce the polling period of the calendar client application. If it appears that too many agents have this error, consider increasing the rate of allowed connections in the C1Calendar.properties file.

The agent receives an HTTP 400 or 500

Problem	An agent receives an HTTP 400 or 500 error (or any other error code not mentioned here).
Cause	Various.
Solution	This is an unexpected error. Check the iCalendar log files for more information on what is happening.

Retrieved calendar displays wrong time zone

Problem	The retrieved calendar displays the wrong time zone.
Cause	The time zone is not configured correctly in the iCalendar client application.
Solution	Configure the time zone the iCalendar client application. It is possible that some client applications do not allow you to specify the time zone. In that case, the calendar time zone will be either the ciscoserver time zone or the time zone of the iCalendar client device.

Language in the iCalendar is not correct

Problem	The language in the iCalendar is not correct.
Cause	The locale set in the iCalendar client device is not correct.
Solution	Check the locale set on the iCalendar client device.

The calendar is never updated on the client device

Problem	The calendar is never updated on the client device, even if the agent schedule has changed.
Cause	The iCalendar client device is not communicating properly with the iCalendar service.
Solution	Check iCalendar service log files to see that the iCalendar client sends requests and that the requests are correctly handled by the iCalendar service. The logs should include lines such as: Received request for user NNN Request successfully processed for user Check that the schedule data is inside within the viewable range (the "Number of Weeks Visible in Agent Schedules" setting on the Application Management > Global Settings page in Unified Workforce Optimization).

Installation Problems and Solutions

WFM database cannot be created or updated

Problem	The WFM database cannot be created or updated.
Cause	Postinstall displays the following error message when the WFM database cannot be created or updated because permission was denied or a database already exists. Could not execute data for step Create WFM DB: Could not create Reports database. Could not update database. CREATE DATABASE permission denied in database 'master'.
Solution	1. Verify the SQL Server Login name is configured correctly. The dbcreator and sysadmin roles must be assigned to the SQL Server Login name. The instructions for creating the SQL Server Login for WFM can be found in the *WFM Installation Guide*. 2. Remove the Hibernate database if it exists. 3. Run WFM Configuration Setup (postinstall.exe) again.

MANA Service Problems and Solutions

Unable to send email notifications via TLS/SSL.

Problem	Unable to send email notifications via TLS/SSL. The MANA debug file shows something like the following: 2014-01-31 11:29:45,992 STACK MANA2017 [pool-3-thread-1|SmtpNotifier#notify:100] javax.mail.MessagingException: Could not connect to SMTP host: smtp.gmail.com, port: 465, response: -1 at com.sun.mail.smtp.SMTPTransport.openServer (SMTPTransport.java:1694) at com.sun.mail.smtp.SMTPTransport.protocolConnect (SMTPTransport.java:525) at javax.mail.Service.connect(Service.java:313) at javax.mail.Service.connect(Service.java:172) at javax.mail.Service.connect(Service.java:121) at javax.mail.Transport.send0(Transport.java:190) at javax.mail.Transport.send(Transport.java:120) at com.cisco.mana.notification.SmtpNotifier.sendMessage (SmtpNotifier.java:169) at com.cisco.mana.notification.SmtpNotifier.notify (SmtpNotifier.java:98) at com.cisco.mana.notification.ConfiguredNotifierList.notify (ConfiguredNotifierList.java:22) at com.cisco.mana.AbstractDiagnosticManager.notify (AbstractDiagnosticManager.java:61) at com.cisco.mana.AbstractDiagnosticManager$1.actualWork (AbstractDiagnosticManager.java:168) at com.cisco.mana.AbstractDiagnosticManager$1.run (AbstractDiagnosticManager.java:138) at java.util.concurrent.Executors$RunnableAdapter.call(Unknown Source) at java.util.concurrent.FutureTask$Sync.innerRun(Unknown Source) at java.util.concurrent.FutureTask.run(Unknown Source) at java.util.concurrent.ScheduledThreadPoolExecutor $ScheduledFutureTask.access$201(Unknown Source) at java.util.concurrent.ScheduledThreadPoolExecutor $ScheduledFutureTask.run(Unknown Source) at java.util.concurrent.ThreadPoolExecutor.runWorker(Unknown Source) at java.util.concurrent.ThreadPoolExecutor$Worker.run(Unknown Source) at java.lang.Thread.run(Unknown Source)
Cause	The wrong host or port was specified for the authorization type.

Solution	Specify the correct SMTP host, port, or authorization type in WFM Configuration Setup (Postinstall) and restart the MANA service. For example, Gmail uses port 465 for SSL authoritzation and 587 for TLS authorization.

Unable to send email notification - SMTP user is not the same as from address

Problem	Unable to send email notifications. The MANA debug file shows something like the following:
	2014-01-31 12:26:14,897 STACK MANA2017 [pool-3-thread-1|SmtpNotifier#notify:100] com.sun.mail.smtp.SMTPSendFailedException: 550 5.7.1 Client does
	not have permissions to send as this sender
	at com.sun.mail.smtp.SMTPTransport.issueSendCommand (SMTPTransport.java:1829)
	at com.sun.mail.smtp.SMTPTransport.finishData(SMTPTransport.java:1634)
	at com.sun.mail.smtp.SMTPTransport.sendMessage (SMTPTransport.java:889)
	at javax.mail.Transport.send0(Transport.java:191)
	at javax.mail.Transport.send(Transport.java:120)
	at com.cisco.mana.notification.SmtpNotifier.sendMessage (SmtpNotifier.java:169)
	at com.cisco.mana.notification.SmtpNotifier.notify(SmtpNotifier.java:98)
	at com.cisco.mana.notification.ConfiguredNotifierList.notify (ConfiguredNotifierList.java:22)
	at com.cisco.mana.AbstractDiagnosticManager.notify (AbstractDiagnosticManager.java:61)
	at com.cisco.mana.AbstractDiagnosticManager$1.actualWork (AbstractDiagnosticManager.java:168)
	at com.cisco.mana.AbstractDiagnosticManager$1.run (AbstractDiagnosticManager.java:138)
	at java.util.concurrent.Executors$RunnableAdapter.call(Unknown Source)
	at java.util.concurrent.FutureTask$Sync.innerRun(Unknown Source)
	at java.util.concurrent.FutureTask.run(Unknown Source)
	at java.util.concurrent.ScheduledThreadPoolExecutor $ScheduledFutureTask.access$201(Unknown Source)
	at java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.run (Unknown Source)
	at java.util.concurrent.ThreadPoolExecutor.runWorker(Unknown Source)
	at java.util.concurrent.ThreadPoolExecutor$Worker.run(Unknown Source)
	at java.lang.Thread.run(Unknown Source)
Cause	The From address and SMTP user specified in WFM Configuration Setup (Postinstall) on the Email Distribution step are incorrect.
Solution	Change the From address and/or the SMTP user on the Email Distribution step so both match and are for a valid SMTP user.

Optimize Lunches and Breaks

Optimize Lunches and Breaks option does not show in Agent Schedules Actions menu

Problem	Optimize Lunches and Breaks option does not show in Agent Schedules Actions menu.
Cause	• A Service queue group or team is selected. • A past date is selected. • There are no agents scheduled for the date.
Solution	• Select a service queue. • Select the current or future date. • Select a service queue or date in which agents are scheduled.

Optimize Lunches and Breaks option does not move specific agents lunches and breaks

Problem	Optimize Lunches and Breaks option does not move specific agents lunches and breaks.

Cause	- The agent is not active, employed on the date, or not in the user's view (the agent does not belong to the any teams in the user's main view). - The current date is selected and current time is after 10:50 p.m. server time. - The agent schedule was generated before WFM 9.5(1) SR3. Schedules generated before this version do not have information needed to locate the work condition activities constraints. - The agent's lunches and breaks were inserted via Insert Activity in Agent Schedules. These will never be moved by the optimizer. - The shift length does not match the shift length work condition for the lunches and breaks - The paid hours for the shift does not match the paid hours work condition for the lunches and breaks - The work condition for the lunches and breaks was deleted. This prevents the optimizer from knowing the constraints on the work condition activities. - The work condition activities used to create the lunches and breaks was deleted. This prevents the optimizer from knowing the constraints on the work condition activities. - Lunches and breaks are currently located earlier than an hour from the current time. The optimizer will only move work condition activities at least 1 hour from the current time. - The work condition activities constraints for the lunches and breaks prevents them from being moved such as if they would need to be move to earlier than 1 hour from current time or outside the work shift . - The valid locations for the work condition activities are on a different date for cross midnight shift. - There are other activities such as exceptions, projects, breaks, or lunches in the location where the lunches and breaks could be move.

	• The "Maximum optimization adjustment" for the work condition is zero, or too small for where the lunches and breaks can be moved.
Solution	• Activate the agent, change the department start date, company end date, or add the agent to a team in the user's main view.
	• Regenerate schedules that were generated before WFM 9.5(1) SR3.
	• If the agent's shift might be resize in Agent Schedules, range work conditions should be used instead of specific length work conditions or the optimizer will not move the lunches and breaks.
	• Move the other activities out of the way.
	• Change the Maximum optimization adjustment for the work condition.

Postinstall Problems and Solutions

WFM Database

Unable to connect to the database

Problem	Unable to connect to the database.
Cause	SQL Server is down. The Postinstall debug files contains the following: 2014-01-29 10:06:23,770 ERROR [AWT-EventQueue-0|MainPanel#displayError: 338] WMPI2001 Could not access the database, registry or a file for Create WFM D
Solution	In Services, start the SQL Server instance for WFM. You might also have to start the SQL Server Browser.

Database instance does not exist - wrong instance name

Problem	The specified database instance does not exist on the specified server. Postinstall displays an error message like "Server 10.192.246.12 has no instance named SQLExpress".
Cause	The wrong instance name was specified. The database instance name is not case sensitive.
Solution	In Services, you'll see a service named SQL Server (<instance name>) for each database instances where <instance name> is a database instance name. Check whether the database instance name entered exists. Try logging in using SQL Server Management Studio with <IP address>\<instance name>

Database instance does not exist - network protocol not enabled

Problem	The specified database instance does not exist on the specified server. Postinstall displays an error message like "Server 10.192.246.12 has no instance named SQLExpress". When attempting to connect to the database instance via SQL Server Management Studio, using <IP address>\<instance name>, it displays a "SQL Network Interfaces, error: 28 - Server doesn't support requested protocol)" error.
Cause	The TCP/IP protocol was not enabled for the specified database instance.

Solution	1. In Sql Server Configuration Manager > SQL Server Network Configuration, select the item named "Protocols for <database instance name>".
	2. Enable both Named Pipes and TCP/IP protocols.
	3. In Services, restart SQL Server (<instance name>) and SQL Server Browser.

Unable to create database

Problem	Unable to create database.
Cause	WFM SQL Server login does not have the dbcreator role.
Solution	In Microsoft SQL Server Management Studio, modify the WFM SQL Server login to have the dbcreator role.

Unable to read/write to database

Problem	Unable to read/write to the WFM database.
Cause	WFM SQL Server login does not have db_datareader and dbB_datawriter roles.
Solution	In Microsoft SQL Server Management Studio, modify the WFM SQL Server login to have the db_datareader and db_datawriter roles.

WFM Keystore

Missing server certificate

Problem	WFM JKS keystore, C:\Program Files (x86)\Common Files\WFM\config\.keystore, is missing the self-signed Tomcat certificate used by Jetty to support C1 HTTPS requests.
Cause	During the switch from Tomcat to Jetty in the 9.2(1) base release, the certificate was not added automatically on a fresh install.
Solution	This is fixed in the WFM 9.2(1)SR2 release and newer, where running Postinstall will add the Tomcat certificate if it is not in the keystore. A workaround is to copy the keystore from a WFM pre-9.2 server to the new server.

ACD Connection

Failed to make TCP/IP connection while validating a Cisco Unified CCE ACD connection

Problem	Failed to make a TCP/IP connection for one or more of the Cisco Unified CCE ACD databases being validated.
	A warning message popup will appear with a message similar to the following:
	Failed to connect to the AWDB Secondary. Host: 10.192.246.188. Message: The TCP/IP connection to the host 10.192.246.188, port 1433 has failed. Error: "connect timed out. Verify the connection properties, check that an instance of SQL Server is running on the host and accepting TCP/IP connections at the port, and that no firewall is blocking TCP connections to the port."
Cause	• The IP address or host name entered in Postinstall is incorrect.
	• SQL Server is not running at the specified address.
	• SQL Server is not accepting TCP/IP connections at the specified address.
	• The system firewall is blocking connections at this port at the specified address
Solution	• Check that the IP address or host name value entered on the ACD Connection step is correct
	• Check that SQL Server is running at the specified address
	• Check that SQL Server is accepting TCP/IP connections at the specified address
	• Check that the system firewall is not blocking connections at this port at the specified address

Cannot open database while validating the Cisco Unified CCE ACD connection

Problem	Cannot open the database for one or more of Cisco Unified CCE ACD databases being validated.
	A warning message popup will appear with a message similar to the following:
	Failed to connect to the HDS Primary. Host: 10.192.246.18. Message: Cannot open database "wfm185_hds" requested by the login. The login failed.
Cause	The Unified CCE instance name entered in Postinstall is incorrect.

Solution	Check that the Unified CCE instance name entered on the ACD Connection step is correct.

Login failed while validating the Cisco Unified CCE ACD connection

Problem	The login failed for all of Cisco Unified CCE ACD databases being validated. This is for when SQL Authentication is used. A warning message popup will appear with a message similar to the following: Failed to connect to the HDS Primary. Host: 10.192.246.18. Message: Login failed for user 'wfmacduserr'.
Cause	• The SQL user entered into Postinstall is incorrect. • The password entered in Postinstall is incorrect.
Solution	• Check that the value entered in the SQL User field on the ACD Connection step is correct. • Check that the value entered in the Password field on the ACD Connection step is correct.

Failed to make TCP/IP connection while validating Cisco Unified CCX ACD connection

Problem	Failed to make a TCP/IP connection for one or more of Cisco Unified CCX ACD databases being validated. A warning message popup will appear with a message similar to the following: The following errors occurred for Primary. Host: 10.192.246.160. Root Error: [Informix][Informix ODBC Driver][Informix]System error occurred in network function.
Cause	• The IP address or host name entered in Postinstall is incorrect • Informix is not running at the specified address • Informix is not accepting TCP/IP connections at the specified address • The system firewall is blocking connections at this port at the specified address

Solution	• Check that the IP address or host name value entered on the ACD Connection step is correct
	• Check that Informix is running at the specified address
	• Check that Informix is accepting TCP/IP connections at the specified address
	• Check that the system firewall is not blocking connections at this port at the specified address

Cannot open database while validating the Cisco Unified CCX ACD connection

Problem	Cannot connect to the Cisco Unified CCX ACD databases being validated. A warning message popup will appear with a message similar to the following: The following errors occurred for Primary. IP/Host: 10.192.246.16. Root Error: [Informix][Informix ODBC Driver][Informix]INFORMIXSERVER does not match either DBSERVERNAME or DBSERVERALIASES.
Cause	The instance is not valid.
Solution	Check that the instance name entered into the Instance Name field on the ACD Connection step is correct.

Login failed while validating Cisco Unified CCX ACD connection

Problem	The login failed for all of Cisco Unified CCX ACD databases being validated. This is for when SQL authentication is used. A warning message popup will appear with a message similar to the following: The following errors occurred for Primary. IP/Host: 10.192.246.16. Root Error: [Informix][Informix ODBC Driver][Informix]Incorrect password or user uccxhruserBAD@10.192.246.4 is not known on the database server
Cause	• The SQL user entered in Postinstall is incorrect. • The password entered in Postinstall is incorrect.

Solution	• Check that the value entered in the SQL User field on the ACD Connection step is correct.
	• Check that the value entered in the Password field on the ACD Connection step is correct.

Cisco Unified CCX ACD connection secondary IP/host is the same as Primary IP/host

Problem	The secondary IP/host has changed from the value entered to be the same value as the primary IP/host.
Cause	If UCCX primary and secondary instances are the same, Postinstall uses the value from the Primary IP/host for the secondary IP/host.
Solution	Make sure that both instances entered in Postinstall are not the same.

WFM Authentication

Failed to make TCP/IP connection while validating Active Directory credentials

Problem	Failed to make a TCP/IP connection for an Active Directory instance entered into the WFM Authentication step while being validated. A warning message popup will appear with a message similar to the following: Failed to connect to server. IP Address or Host Name: 10.192.252.11 Port: 6360 Root Error: Connection refused: connect
Cause	• The IP address or host name entered in the WFM Authentication step is incorrect. • The system firewall is blocking connections at this port at the specified address.
Solution	• Check that the IP address or host name value entered on the WFM Authentication step is correct. • Check that the system firewall is not blocking connections at this port at the specified address.

Failed to authenticate the user while validating Active Directory credentials

Problem	WFM failed to authenticate the user while validating Active Directory credentials for an Active Directory instance entered into the WFM Authentication step.
	A warning message popup will appear with a message similar to the following:
	Failed to authenticate because of invalid credentials. User Display Name: rd ldap0 Base DN: dc=p2,dc=rd,dc=ld User Search Base: ou=Service Accounts,ou=User Accounts Root Error: [LDAP: error code 49 - 80090308: LdapErr: DSID-0C090334, comment: AcceptSecurityContext error, data 525, vece
Cause	One or more of the following values on the WFM Authentication step are incorrect: - User Display Name - Base DN - User Search Base
Solution	Ensure that the following values are entered correctly on the WFM Authentication step: - User Display Name - Base DN - User Search Base

The SSL certificate file name is found blank while validating Active Directory credentials

Problem	The SSL certificate file name is found blank while validating Active Directory credentials for an Active Directory instance entered into the WFM Authentication step.
	A warning message popup will appear with a message similar to the following:
	The SSL Certificate File Name can not be Empty for Domain: p1.rd.ld
Cause	The Use SSL check box is checked and the Certificate File Names field is blank on the WFM Authentication step.
Solution	If using SSL is desired, check that the Use SSL check box is selected and that the Certificate File Names field has the correct certificate names on the WFM Authentication step.

The SSL certificate file listed is not found while validating Active Directory credentials

Problem	The SSL certificate file listed is not found while validating Active Directory credentials for an Active Directory instance entered on the WFM Authentication step.
	A warning message popup will appear with a message similar to the following:
	The SSL Certificate File Name (C:\temp\certs\acert2.cer) does not exist in the path for Domain: p1.rd.ld
Cause	The certificate is not located at the absolute path of the certificate as entered in the Certificate File Name field on the WFM Authentication step.
Solution	Check that the certificate is located at the absolute path of the certificate entered in the Certificate File Names field on the WFM Authentication step.

The encoding of the SSL certificate file listed is not supported

Problem	The encoding of the SSL certificate file listed is found to be not supported while validating Active Directory credentials for an Active Directory instance entered on the WFM Authentication step.
	A warning message popup will appear with a message similar to the following:
	The SSL Certificate File Name (C:\temp\certs\binarycert2.cer) is not Base-64 Encoded or is corrupt.
Cause	The SSL certificate file is not base-64 encoded or is corrupt.
Solution	Check that the SSL certificate file is base-64 encoded and is not corrupt.

Failed to configure SSL from the certificate file while validating Active Directory credentials

Problem	Failed to configure SSL from the certificate file while validating Active Directory credentials for an Active Directory instance entered into the WFM Authentication step.
	A warning message popup will appear with a message similar to the following:
	Could not configure SSL. Error Loading an X.509 certificates (C:\temp\certs\badcert2.cer) from an InputStream. Root Error: extra data given to DerValue constructor
Cause	The data in the certificate is corrupted, possibly from a bad copy.

Solution	Recopy or regenerate the certificate so that the data is configurable.

Product Adapter Service Problems and Solutions

Service

Product Adapter service is using lots of memory and throwing OutOfMemoryError - Server is low on disk space

Problem	Product adapter service is using lots of memory and throwing OutOfMemoryError - Server is low on disk space
Cause	The server is low on disk space.
Solution	Check the amount of disk space on the WFM server. C:\Windows\Downloaded Installations contains folders for installations, both current and those already uninstalled. The ones that have been uninstalled can be deleted. The backup folder for the SQL Server could contain huge backups that are no longer needed and can be deleted.

Product Adapter service is using lots of memory and throwing OutOfMemoryError—Bad data in the database

Problem	Product Adapter service is using lots of memory and throwing OutOfMemoryError—Bad data in the database
Cause	Bad data in the database. The user might have entered bad data in the UI that was not caught and rejected or there could be bad data from captured data.
Solution	• Install the release/SR/ES that has fixes. • Remove bad data from the database. • Check the wfmadapter*.dbg files for information used to isolate the root cause. • Use heap dump analyzer to analyze the heap dump that is generated automatically to C:\Program Files (x86)\Cisco\WFO_WFM\log\WfmProductAdapter_HeapDumps folder.

Product Adapter service has high CPU usage (50+%) forever—bad data

Problem	Product Adapter service has high CPU usage (50+%) forever—bad data

Cause	Large (like 1234567890) value entered in exception assignment (Application Management > Exceptions > Assign an exception to one or more agents) Daily Occurrence Every N Days field caused the Product Adapter service to go into an infinite loop.
Solution	Install 9.2(1) SR2 which has the fix. Restart WFM Product Adapter service. Do not enter a large value in the Daily Occurrence Every N Days field.

Product Adapter service has no logging on system where requests should be going

Problem	Product Adapter service has no logging on system where requests should be going
Cause	Multiple systems pointing to the same IP address. Example: Cloning a VM and starting up services without making changes in Postinstall. Check C1Surrogate logs for "Client connected from" - should only have the correct client IP address listed.
Solution	Ensure only one system has the appropriate IP address pointed to. Shut off or update other systems.

Authentication and Authorization

WFM login is slow while using Active Directory

Problem	WFM AD authentication is slow, and takes 30 seconds to a minute to log in.
Cause	As of 9.3(1), WFM does not use a user search base like Quality Management does. Because of this, WFM might receive referrals from child Domain Controllers (DC) in the forest and will spend time responding to them before letting the user log in. This log message is usually indicative of the problem: DEBUG [MessageHandler-thread-69|ActiveDirectory#userInGroup:376] caught a partial result, however that is okay in this case.
Solution	On the WFM Authentication step in Postinstall, add another OU to the Base DN field in order to limit the search scope to where the users are located.

HRMS

Time Off Request shows the wrong hours (HRMS is enabled)

Problem	Time Off Request shows the wrong hours (HRMS is enabled)
Cause	This is caused by one of the following when HRMS has been enabled in Postinstall: • The mechanism used to copy the HRMS import file from the customer's HRMS system to the WFM Capture services server is not working or was not placed into the vacationreports folder • HRMS import files is in the wrong format or contains incorrect information • The HRMS import files have no value for TotalEarnedHours fields, such as personalDaysTotalEarnedHours, which causes the agent's Hours Earned to be set to zero. • The Capture service is not running
Solution	• Verify that the HRMS import files are copied to the vacationreports folder (...\WFO_WFM\vacationreports for WFM 9.2 and earlier, or C:\Program Files (x86)\Common Files\WFM\vacationreports for WFM 9.3.1 and later). • Verify that the HRMS import files are in the correct format and contain the correct information. • Verify that the HRMS import files have the correct value for TotalEarnedHours fields. • Verify that the Capture service is running. • Verify that the Capture service is importing the files. Once an HRMS file has been imported successfully, it will be moved to the archive sub-folder. Verify that the file was moved. If not, check the Capture service debug file for an error.

Reporting Problems and Solutions

Total In Service Time and Total Login Time in Agent and Team Productivity report is too low for the agent.

Problem	**Total In Service Time and Total Login Time in Agent and Team Productivity report is too low for the agent.**
Cause	The agent has their default skill group set to <System-defined> and has call activity on a second line while handling an ACD call. An example of this is using the Join or Direct Transfer buttons on a Cisco phone (although it might happen for other conference or transfer cases as well). In this situation, the second call time is attributed to the default skill group (5000), which is filtered out by WFM. This results in a too-low In Service time and Login time.
Solution	For Unified CCE v9, in Agent Explorer, select the agent, select the Skill group membership tab, change the Default Skill Group from <System-defined> to a regular skill group, and save. It is recommended that the default is set to the queue that the agent primarily works so that the time on these types of calls shows up there. Note that the time might not be correctly attributed to the appropriate queue if the call was for a different queue than the one specified as the default.

For newer versions of Unified CCE via the web interface, select the agent, and on the skill group panel that shows the agent's skill groups, ensure one of them has the Default check box checked, and save. |

Wait of up to 30 seconds to open the Reporting application

Problem	A user might have to wait up to 30 seconds to open the Reporting application after the server is booted.
Cause	This only happens to the first user who accesses a report after the server is booted.
Solution	No action required. Some time is required when the first user accesses the Reporting application. The Reporting application connects to the database, establishes privileges, and displays a menu based on the user's role. After the connection is established, you can quickly access reports.

Agent productivity report shows no data

Problem	The Agent Productivity Report shows no data for a period when agents have been continuously taking calls.
Cause	Agent sessions lasting more than 24 hours are not supported.
Solution	Agents have to log out once every 24 hours to ensure productivity reports show correct data.

Report is not created when CSV option is selected

Problem	WFM or Unified Workforce Optimization fails to create a report when the CSV option is selected in the Format field. The following message appears when you try to generate a report with the CSV format. To access CSV/PDF files, enable Internet Explorer Security Setting: Automatic prompting for file downloads
Cause	The Automatic Prompting for File Downloads option in Internet Explorer is not enabled.
Solution	Perform the following steps to resolve the problem. 1. In Internet Explorer, choose Tools > Internet Options. The Internet Options window appears. 2. Click the Security tab and then click Custom Level. 3. Scroll down to Automatic Prompting for File Downloads under Downloads, choose Enable, and click OK. 4. Click Yes to dismiss the warning dialog and click OK to dismiss the Internet Options window. 5. Resubmit the CSV report. The File Download dialog appears. 6. Click Open to display the report.

RTE Service Problems and Solutions

General Problems

In general, symptoms of WFM RTE service problesm are seen in the real-time adherence displays in Unified Workforce Optimization. In these displays, the agent state information might not be available at all or it might be out of date.

Typically, the root cause for issues is one of the following:

- RteCisco.dll is unable to connect to the Unified CCX CTI server via ACMI (Cisco ACDs only).

- The service is unable to connect to the WFM database.

The first step in troubleshooting is to verify the configuration in WFM Configuration Setup (Postinstall) on the ACD Connection step. If problems continue to occur after the configuration is verified, then you should inspect the log and configuration files.

Database Problems

RTE service is unable to write to WFM database

Problem	The RTE service is unable to write to the WFM database.
Cause	SQL Server is down or not reachable (if it is offboard). You will see something like "ERROR WMNC2001 [Thread-1|A-gentStateChangeQueueRunnable#processAgentStateChangeRequest:119] An exception occurred while trying to save agent state information. acdAgentId: 1002, stateIdentifier: 256, reasonCode: null, reason: Unable to get information from SQL Server: 10.192.246.27.." in wfmrte debug files.
Solution	Start SQL Server and SQL Server Browser if they are not running. For an off-board SQL Server, check the connection between the WFM server with Trans-action Services component installed and the SQL Server computer.

Agent adherence data is wrong or missing data - DB connection

Problem	The agent adherence data is wrong or missing data.
Cause	SQL Server is down or not reachable (if it is offboard). You will see something like "ERROR WMNC2001 [Thread-1|A-gentStateChangeQueueRunnable#processAgentStateChangeRequest:119] An exception occurred while trying to save agent state information. acdAgentId: 1002, stateIdentifier: 256, reasonCode: null, reason: Unable to get information from SQL Server: 10.192.246.27.." in wfmrte debug files.
Solution	If the RTE service is unable to write agent adherence data to WFM database, that data is discarded.

Configuration Problems

No agent statistics - Use GIS to capture ACD real-time agent state data

Problem	There is no agent statistics data for one or more agents.
Cause	The "Use GIS to capture ACD real-time agent state data " check box is selected in WFM Configuration Setup and the data was not provided via GIS.
Solution	Provide the data via GIS o clear the "Use GIS to capture ACD real-time agent state data" in WFM Configuration Setup.

Cisco Unified CCE and Unified CCX Problems

RTE service could not connect to the CTI service—wrong CTI service IP address

Problem	The RTE service could not connect to the CTI service.
Cause	The wrong IP address was specified on the ACD Connection step in WFM Configuration Setup.
Solution	Run WFM Configuration Setup and enter the correct CTI service IP address in the IP Address or Host Name field on the ACD Connection step and then restart all WFM services.

RTE service could not connect to the CTI service—wrong CTI service port

Problem	The RTE service could not connect to the CTI service.
Cause	The wrong port was specified on the ACD Connection step in WFM Configuration Setup. It is typically 42027 for Side A and 43027 for Side B for Unified CCE, and 12028 for Unified CCX.
Solution	Run WFM Configuration Setup and enter the correct CTI service port in the Port field on the ACD Connection step and then restart all WFM services.

RTE service could not connect to the CTI service—wrong peripheral ID

Problem	The RTE service could not connect to the CTI service.
Cause	The wrong peripheral ID was specified on the ACD Connection step in WFM Configuration Setup. It is typically 5000 for Unified CCE.
Solution	Run WFM Configuration Setup and enter the correct peripheral ID in the Peripheral ID field on the ACD Connection step and then restart all WFM services.

No agent statistics—no corresponding WFM agent

Problem	There is no agent statistics data for one or more agents.
Cause	There is not a corresponding agent or user in WFM fofr the Unified CCE/Unified CCX agent.
Solution	Verify that the Sync servic is running and does not have issues connecting to and synchronizing the data from the ACD to the WFM database.
	Verify that the agent and user exist in WFM.
	Unified CCE: Verify the WFM agent ACD iID is the same as the SkillTargetID column value in Agent view in ICM's awdb for the agent.
	Unified CCX: Verify that the WFM agent ACD ID is the same as the Resource ID field value in Unified CCX Administration > Subsystems > RmCm > Resources > Resource Configuration for the agent.
	The WFM agent/user must have the Activate this agent/user check box selected.

Schedule Service Problems and Solutions

Schedule Requests

Schedule request fails because the schedule start date is not on the configured starting day of week

Problem	Schedule request fails because the schedule start date is not on the configured starting day of week.
Cause	The first day of the week configured in WFM Global Settings was changed after the schedule request was submitted but before it was processed by the Schedule service so that the schedule start date is not the same as the first day of the week. Note that if the first day of the week configured in WFM Global Settings is changed, agent work shift assignments will need to be reassigned and dynamic scheduling for the agents will need to be redone.
Solution	Change the first day of the week configured in WFM Global Settings back to the previous value if it was mistakenly changed. Resubmit the schedule request.

Schedule request fails because the multiskill group is not found or is not in the user's view

Problem	Schedule request fails because the multiskill group is not found or is not in the user's view.
Cause	One or more of the following occurred after the schedule request was submitted but before it was processed by the Schedule service: • The multiskill group was deleted • The multiskill group was unassigned from the user's view, the user's view was deleted, or the user's view was changed
Solution	• Resubmit the schedule request without the deleted multiskill group. • Assign the multiskill group to the user's current view.

Schedule request fails because the service queue is not found, is not in the user's view, or has "Do not generate forecasts or schedules for this service queue" selected

Problem	Schedule request fails because the service queue is not found, is not in the user's view, or has "Do not generate forecasts or schedules for this service queue" selected
Cause	One or more of the following occurred after the schedule request was submitted but before it was processed by the Schedule service: • The service queue was deleted • The service queue was unassigned from the user's view, the user's view was deleted, or the user's view was changed • The "Do not generate forecasts or schedules for this service queue" was checked in the service queue
Solution	• Resubmit the schedule request without the deleted service queue. • Assign the service queue to the user's current view. • Clear the "Do not generate forecasts or schedules for this service queue" check box in the service queue.

Schedule request fails because configuration data could not be read from the database

Problem	Schedule request fails because configuration data could not be read from the database.
Cause	The Schedule service could not read the specified configuration data from the WFM database. The Schedule service log and debug files will contain additional details.
Solution	• Verify the specified configuration data exists in the WFM database via the Cisco interface or direct SQL queries. • Run a network check and SQL Server check to verify the WFM database is up and accessible by the Schedule service. • Restart the Schedule service. • If this issue persists, contact technical support.

Schedule request fails because there are no valid active work shifts or approved dynamic availability selection

Problem	Schedule request fails because there are no valid active work shifts or approved dynamic availability selection.

Cause	There are no active and valid work shifts or approved dynamic availability selection.
Solution	Add valid work shifts, fix invalid work shifts, and activate the work shifts. Approve valid agent dynamic availability selection with valid min max hours condition assigned

Schedule request fails because there are no valid active agents

Problem	Schedule request fails because there are no valid active agents.
Cause	There are no active and valid agents.
Solution	• Assign skill mappings to the service queues and agents if scheduling by selecting individual service queues. • Assign agents to the multiskill groups if scheduling by selecting multiskill groups. • Add or change the agents so that they are active, have valid active work shifts assigned, and can work during the schedule week.

Schedule request fails because forecast data is missing for the service queue

Problem	Schedule request fails because forecast data is missing for the service queue.
Cause	The production forecast for the specified service queue and date range is missing the specified intervals. Note that the production forecast for the service queue must contain data for every interval in the schedule weeks in the schedule request. If the service queue has agents with work shifts where the last day of the last schedule week is configured, an extra 2 days of forecast data after the end of the schedule weeks is also needed to handle a potential cross-midnight shift that is extended by unpaid work condition activities.
Solution	• Verify the production forecast contains data for every intervals in the specified date range. • If not, generate a new production forecast. • Run a new schedule request after fixing the production forecast.

Schedule request fails because no schedule activity could be produced

Problem	Schedule request fails because no schedule activity could be produced.

Cause	There is some configuration issue that prevents schedules from being pro-duced.
Solution	- Verify the service queues exist, are in the user's view, have "Do not generate forecasts or schedules for this service queue" unchecked, and have skill mappings. - Verify the skill mappings are associated with agents if scheduling using selected service queues. - Verify agents are assigned to the multiskill groups if scheduling using selected multiskill groups. - Verify the agents are active, department start date is on or before the agent work shift dates in the week, the termination date (if specified) is after the agent work shift dates in the week, and have work shifts assigned with dates that match the configured first day of the week in WFM Global Settings. - Verify that the agents have work shifts assigned for the specified week if rotate work shifts was not checked in the schedule request. - Verify the work shifts are active and valid. - Verify the agents have valid dynamic scheduling work shifts for the specified weeks if using dynamic scheduling.

Schedule request fails but schedules were created for previous weeks

Problem	Schedule request fails but schedules were created for previous weeks.
Cause	The Schedule service will save the schedule after creating it for the week before moving to the next week. If an issue occurred for a week, the saved schedule for the previous weeks will not be reverted.
Solution	This is expected behavior.

Schedule request fails because schedules could not be saved

Problem	Schedule request fails because schedules could not be saved.
Cause	There is errors in the Schedule service debug file with "Caused by: java.sql.SQLException: There is insufficient system memory in resource pool 'internal' to run this query." which indicates SQL Server ran out of memory while saving the schedules. .

Solution	Move the SQL Server database used by WFM to its own machine.
	Contact your SQL Server DBA to tune the SQL Server's memory.

Multiskill Groups

No agents were scheduled using the multiskill group

Problem	No agents were scheduled using the multiskill group.
Cause	• The specified multiskill group has no associated service queues. • The specified multiskill group has no associated agents. • A selected higher priority service queue with block scheduling unchecked took all the agents (no longer valid starting with 9.3.1 SR1).
Solution	• No action is needed if it is intentional. • Associate service queues that are in the user's view and have "Do not generate forecasts or schedules for this service queue" unchecked to the multiskill group. • Associate agents to the multiskill group. • Verify the agents are active, the department start date is on or before the agent work shift dates in the week and the termination date (if specified) is after the agent work shift dates in the week. • Verify the agents have valid active work shifts assigned with dates that match configured first day of the week in WFM Global Settings or have valid dynamic scheduling work shifts for the week. • Select the block scheduling check box in the higher priority service queue or change the priorities of the service queues in the multiskill group to be higher (no longer valid starting with 9.3.1 SR1).

Agent scheduled using the multiskill group shows as In service when the service queue is closed

Problem	Agent scheduled using the multiskill group shows as in service when the service queue is closed.
Cause	At least one of the service queues in the multiskill group is open during that period.

Solution	No action is needed as this is expected behavior.

Service Queues

No agents were scheduled using the service queue

Problem	No agents were scheduled using the service queue.
Cause	• The specified service queue has no skill mappings that have active valid agents. • A selected higher priority service queue with block scheduling unchecked took all the agents (no longer valid starting with 9.3.1 SR1).
Solution	• No action is needed if it is intentional. • Assign skill mappings to the service queue. • Associate agents to the service queue. • Verify the agents are active, department start date on or before agent work shift dates in the week and termination date (if specified) after agent work shift dates in the week. • Verify the agents have valid active work shifts assigned with dates that match configured first day of the week in WFM Global Settings or have valid dynamic scheduling work shifts for the week. • Select the block scheduling check box in the higher priority service queue or change the priorities of the service queue to be higher (no longer valid starting with 9.3.1 SR1).

Agent was scheduled for the multiskill group instead of the service queue

Problem	Agent was scheduled for the multiskill group instead of the service queue.
Cause	The service queue is assigned to the multiskill group and both the multiskill group and the service queue were selected in the schedule request. If an agent is assigned to a service queue's skill mapping and a multiskill group where the service queue is assigned to the multiskill group and both the multiskill group and the service queue were selected in the schedule request, the agent will be scheduled for the multiskill group.

Solution	No action is needed if the behavior is acceptable.
	If you want the agent to only be scheduled for the service queue, do one of the following:
	• Remove the agent from the multiskill group.
	• Remove the service queue from the multiskill group.
	• Do not select the multiskill group when making the schedule request.
	• Assign the agent to a different multiskill group that does not contain the service queue.

Agent was scheduled for the wrong service queue

Problem	Agent was scheduled for the wrong service queue.
Cause	• The agent was assigned to the wrong skill mapping.
	• The skill mapping was assigned to the wrong service queue.
Solution	• Verify the agent is assigned to the correct skill mapping.
	• Verify the skill mapping is assigned to the correct service queue.

Agent was scheduled for a different service queue than expected (when using the Default scheduling method)

Problem	Agent was scheduled for a different service queue than expected (when using the Default scheduling method).

Cause	The Schedule service schedules agents for the service queues in the following order when using the Default scheduling method:
	• Service queue priority where zero is the highest priority
	• Service level percent (interactive before non interactive, for interactive, higher percent before lower)
	• Service level seconds (smaller before larger)
	Service queues that are scheduled first will take agents if they are needed or if the service queue has block scheduling unchecked. Note that service queues that are associated with a selected multiskill group are treated as if block scheduling is not selected when the agents are scheduled for the multiskill group.
	Starting with WFM 9.3(1) SR1, the block scheduling check box is removed and all service queues are treated as if block scheduling is selected.
Solution	• Change the service queue priority, the service level percent, or the service level seconds.
	• Change the block scheduling option for the service queue (no longer valid starting with 9.3.1 SR1).

Agent was scheduled for a different service queue than expected (when using the Balanced scheduling method)

Problem	An agent was scheduled for a different service queue than expected (when using the Balanced scheduling method)
Cause	When using the Balanced scheduling method, the Schedule service will consider both the service queues' priorities as well as their forecasted number of agents needed (possibly adjusted for shrinkage) when scheduling agents. In general, it will schedule:
	• Higher priority service queues before lower priority service queues, where zero is the highest priority
	• Understaffed before fully staffed before overstaffed
	• Open service queue before closed service queue
	The service queue forecast, shrinkage, and other configuration used by the Schedule service is what is current at the time the schedule request is processed by the Schedule service, not when the request is made.

Solution	- No action is needed if it is intentional. - Change the service queue priority. - Change the service queue open hours. - Removed the closed day for the service queue. - Change the shrinkage values used or do not apply shrinkage when making the schedule request.

Agent scheduled using the service queue shows as Closed service when the service queue is open

Problem	Agent scheduled using the service queue shows as closed service when the service queue is open.
Cause	The service queue has a closed day assigned for that date.
Solution	- No action is needed if this is intentional. - Remove the closed day for the service queue

More agents are scheduled for the service queue than needed while another service queue is understaffed

Problem	More agents are scheduled for the service queue than are needed while another service queue is understaffed.
Cause	- The overstaffed service queue has higher priority and has block scheduling unchecked, which causes it to take more agents than needed (no longer valid starting with 9.3.1 SR1). - The overstaffed service queue is associated with a multiskill group and another higher priority service queue in the multiskill group has lower weighting than its proportion of forecasted agents. As a result, when the Schedule service schedules agents for that service queue, it can cause other service queues in the multiskill group to be overstaffed. - The overstaffed service queue has higher priority and shrinkage was applied, which causes it to take more agents than forecasted.

Solution	• No action is needed if it is intentional.
	• Change the service queue priority.
	• Select the block scheduling check box in the service queue (no longer valid starting with 9.3.1 SR1).
	• Change the service queue's weighting in the multiskill group.
	• Change the shrinkage values used or don't apply shrinkage when making the schedule request.

Agent is scheduled for a lower priority service queue that is understaffed instead of a higher priority service queue that is understaffed.

Problem	An agent is scheduled for a lower priority service queue that is understaffed instead of a higher priority service queue that is understaffed.
Cause	The balanced scheduling method was used in the schedule request.
	• The Schedule service will attempt to balance the service queue needs so that when the higher priority service queue has a certain amount of its forecasted agents scheduled, the Schedule service will schedule some agents for the lower priority service queue.
	• The higher priority service queue is associated with a multiskill group and one or more service queues in the multiskill group do not need more agents , either because of overstaffing or being closed. As a result, the relative need of the multiskill group is lower than that of the lower priority service queue.
Solution	• No action is needed if it is intentional.
	• Change the service queue priority.
	• Change the service queue's weighting in the multiskill group.
	• Use the Default scheduling method.

Agents

Agent does not get scheduled - Wrong work shift assignment date

Problem	Agent does not get scheduled—there is a wrong work shift assignment date.

Cause	• The work shift assignment date has a different first day of the week than the first day of the week configured in WFM Global Settings. • The dynamic scheduling work shift for the agent has a different first day of the week than the first day of the week configured in WFM Global Settings. This can occur if the first day of the week configured in WFM Global Settings was changed after the work shift was assigned to the agent and the agent completed the dynamic scheduling.
Solution	• In the Agent page, remove the bad work shift assignment and add it again with the correct date. • Redo the dynamic scheduling for the agent.

Agent does not get scheduled - No assigned work shift for week and rotate work shifts is not checked

Problem	Agent does not get scheduled—there are no assigned work shift for the week and Rotate work shifts is not selected.
Cause	The agent does not have any work shifts assigned for the specified week and rotate work shifts was not selected in the schedule request.
Solution	• Assign a work shift to the agent for the specified week if Rotate work shifts was not selected in the schedule request. • Select Rotate work shifts in the schedule request.

Agent does not get scheduled - Bad work shift for week

Problem	Agent does not get scheduled—there is a bad work shift for the week.
Cause	• The assigned work shift for the week is inactive or invalid. • Rotate work shifts was checked and an inactive or invalid work shift that was between valid active work shifts was rotated to the week.
Solution	On the Work Shifts page, ensure the work shift is active and fix any bad configuration.

Agent does not get scheduled - Cannot work during week

Problem	The agent does not get scheduled—cannot work during that week.

Cause	The agent is not active, the department start date is after the work shift dates, or the termination date is before the work shift dates.
Solution	Verify the agent is active, the department start date is on or before the agent work shift dates, and the termination date (if specified) is after the agent work shift dates.

Agent does not get scheduled - Dynamic availability selection too short

Problem	Agent does not get scheduled - Dynamic availability selection too short.
Cause	Agent's dynamic availability selection is shorter than the minimum shift length or minimum hours for day plus unpaid work condition activities. DST spring ahead resulted in shorter dynamic availability selection.
Solution	• Modify the minimum minutes per day or week or maximum minutes per day or week in the min max hours condition. • Use a different min max hours condition. • Change the agent's work shifts.

Agent does not get scheduled - Below minimum per day or per week or above maximum per day or per week

Problem	Agent does not get scheduled - Below minimum per day or per week or above maximum per day or per week.
Cause	The agent's work shifts for the day is below minimum per day or week or above maximum per day or week of the min max hours condition.
Solution	• Modify the minimum minutes per day or week or maximum minutes per day or week in the min max hours condition. • Use a different min max hours condition. • Change the agent's work shifts.

Agent does not get scheduled - Minimum interval violations

Problem	Agent does not get scheduled - Minimum interval violations.
Cause	The agent cannot be schedule due to minimum interval violations in combination with the minimum/maximum minutes per day or week. The minimum interval from the min max hours condition is used for cross day work shifts. The minimum interval from the dynamic availability and variable work shifts are used for within the same day split shifts.

Solution	- Modify the minimum interval in the Min Max hours condition. - Modify the minimum interval in the dynamic availability. - Modify the minimum interval in the variable work shifts. - Modify the agent's work shifts, dynamic availability minimum shift length, or dynamic availability selection. - Modify the minimum/maximum minutes per day or week in the Min Max hours condition.

Agent is scheduled with the wrong work shift

Problem	The agent is scheduled with the wrong work shift.
Cause	- The work shift was assigned to the wrong week for the agent. - Rotate work shifts was checked and a different work shift was rotated to the week. - The agent has a dynamic schedule work shift for the week that is used instead of the assigned/rotated work shift.
Solution	- Assign the work shift to the correct week for the agent. - Move the assigned work shifts up or down to change the rotation dates. - Use "Clear All" on the dynamic scheduling event to remove the dynamic scheduling work shifts for all the agents using that dynamic scheduling event.

Agents are not scheduled in the desired order

Problem	Agents are not scheduled in the desired order.

Cause	Skill mapping priority, multiskill group priority, service queue scheduling order, work shift, and/or rank are not configured correctly. For a specific date, the Schedule service orders agents for a specific service queue by:
	1. Multiskill group priority for the selected multiskill group for the service queue or skill mapping priority for the individually selected service queue (if the service queue is not a member of a selected multiskill group). Agents assigned to multiskill group/skill mapping with higher multiskill group priority/skill mapping priority are scheduled first.
	2. Service queue scheduling order. Note that agents whose rank is blank are treated as if they had a rank of 99999 by the Schedule service.
Solution	• Change the multiskill group priority and/or skill mapping priority. • Change the service queue scheduling order. • Change the agent's rank. • Change the work shift hours.

Work Conditions

Work condition was not applied to the agent's work shift

Problem	The work condition was not applied to the agent's work shift.
Cause	• The work condition's scheduled shift length does not match the agent's work shift length. • The work condition's earliest shift arrival time is after the start of the agent's work shift. • The work condition is a general condition and there is another non-general work condition assigned to the agent's work shift that matches the shift length and arrival time. General work conditions assigned to an agent's work shift are still treated like other non-assigned general work conditions. • The work condition does not include that day of week. • The work condition is invalid.

Solution	• Change the work condition shift length.
	• Change the work condition's earliest shift arrival time to an earlier time or check Apply work condition to work shifts with any arrival time.
	• Clear the general condition check box and assign it to the agent's work shift or unassign the non-generic work condition assigned to the agent's work shift.
	• Include that day of week in the work condition.
	• Correct errors in the work condition configuration. The Schedule service log and debug files contain specific information about why the work condition is invalid.

Unexpected work condition was applied to the agent's work shift

Problem	An unexpected work condition was applied to the agent's work shift.
Cause	• A non-general work condition assigned to the agent's work shift is used instead of a general work condition.
	• More than one work condition assigned to the agent's work shift matches the agent's work shift length and arrival time.
	• More than one general work condition matches the agent's work shift length and arrival time.
	• The desired work condition does not include that day of the week.
	• The desired work condition is invalid.
	When more than one work condition matches the agent's work shift length and arrival time, the work condition is selected in the following order:
	1. Assigned non-general work condition assigned to the agent's work shift before general work condition
	2. Earliest start time

Solution	• Clear the general condition check box and assign it to the agent's work shift or unassign the non-general work condition assigned to the agent's work shift.
	• Remove the work condition with the same shift length assigned to the work shift.
	• Remove the general work condition with the same shift length.
	• Change the work condition's earliest shift arrival time to a different time or select Apply work condition to work shifts with any arrival time.
	• Include/exclude that day of the week in the work condition.
	• Correct errors in the work condition configuration. The Schedule service log and debug files contain specific information about why the work condition is invalid.

Work condition activity was not applied to the agent's work shift

Problem	The work condition activity was not applied to the agent's work shift.
Cause	The work condition activity has zero duration or is invalid.
Solution	• Change the work condition activity duration.
	• Correct errors in the work condition activity configuration. The Schedule service log and debug files contain specific information about why the work condition activity is invalid.

Work condition activity does not show up or only part of it shows up in the schedule

Problem	The work condition activity does not show up or only part of it shows up in the schedule.
Cause	There is another scheduled activity such as an exception or cross-mid-night work condition activity from the previous day in the only location where this work condition activity can be scheduled. The Schedule service will attempt to schedule as much of the activity as possible to be visible given the work condition activity configuration.
Solution	• Remove or change the assigned exception start/end time.
	• Change the work condition activity minimum/maximum delay and minimum interval, or both.

Exceptions

Exception was not applied to the agent's work shift

Problem	The exception was not applied to the agent's work shift.
Cause	- The exception assignment is invalid. - The assigned exception duration is zero after start/end time/DST adjustments, that is, the entire assigned exception occurred within the spring ahead hold. - The assigned exception is outside the agent's work shift available periods.
Solution	- Correct the errors in the exception assignment. The Schedule service log and debug files contain specific information about why the exception assignment is invalid. - Remove the assigned exception and reassign it with start/end time that takes into account DST and the agent's work shift hours.

Exception was truncated

Problem	The exception was truncated.
Cause	Part of the assigned exception is outside the agent's work shift available periods.
Solution	Remove the assigned exception and reassign it with a start/end time that takes into account the agent's work shift hours.

Unexpected exception was applied to the agent's work shift

Problem	An unexpected exception was applied to the agent's work shift.

Cause	When there is overlap in when assigned exceptions can be applied to the agent's schedule, the exceptions are applied in the following order:
	
	1. Entire day exception before partial day exception
	
	2. If both are entire day exceptions:
	
	   a. Unpaid before paid
	
	   b. Exception name, in ascending order
	
	3. If both are partial day exceptions:
	
	   a. Start time, in ascending order
	
	   b. Duration, in descending order
	
	   c. Unpaid before paid
	
	   d. Exception name, in ascending order

Solution	Remove the assigned exceptions and reassign them to avoid overlap.

Projects

Project was not applied to the agent's work shift

Problem	The project was not applied to the agent's work shift.
Cause	• The project is invalid, inactive, or does not have the agent assigned to it. • The agent does not have assignment work shift, closed service periods, or in service periods where the agent is not needed that meets the project configuration.
Solution	• Correct errors in the project. The Schedule service log and debug files contain specific information about why the project is invalid. • Make the project active and assign the agent to it. • Assign an assignment work shift to the agent if you want to ensure the agent is scheduled for the project. • Change the project configuration that is limiting where the project can be applied.

Unexpected project was applied to the agent's work shift

Problem	An unexpected project was applied to the agent's work shift.
Cause	The project configuration that limits where the project can be applied can allow other projects to be applied instead. When an agent has multiple projects that can be applied, the projects are applied in the following order: 1. Project priority, where 0 is highest (ascending) 2. Projects where the agent can work one day per week before multiple days per week 3. Minimum duration (descending) 4. Duration unit (descending) 5. Number of selected days of the week within start and end date for the schedule week (ascending) 6. Maximum duration (ascending) 7. Maximum hours per week (ascending) 8. Start time (ascending) 9. End time (ascending)
Solution	• Change the project configuration that is limiting where the project can be applied. • Change the project priority.

Min Max Hours Condition

Min max hours condition was not applied to the agent's work shift

Problem	Min max hours condition was not applied to the agent's work shift.
Cause	• The min max hours condition is invalid. • The min max hours condition is not assigned to the agent or the agent's main service queue for the week or as default .

Solution	• Correct errors in the min max hours condition. The Schedule service log and debug files contains specific information about why the min max hours condition is invalid. • Assign the min max hours condition to the agent or the agent's main service queue for the week or as default .

Wrong min max hours condition was applied to the agent's work shift

Problem	Wrong min max hours condition was applied to the agent's work shift.

Cause	• The desired min max hours condition is invalid.
	
	• The desired min max hours condition assigned date has a different day of week than the first day of the week configured in WFM Global Settings.
	
	• The desired min max hours condition is not assigned to the agent or the agent's main service queue for the week or as default.
	
	• The min max hours condition used is selected in the following order:
	
	  1. Assigned to the agent for the week.
	
	  2. Default for the agent.
	
	  3. Assigned to the agent's main service queue for the week.
	
	  4. Default for the agent's main service queue.

Solution	• Correct errors in the min max hours condition. The Schedule service log and debug files contains specific information about why the min max hours condition is invalid. • Remove and reassign the desired min max hours condition. • Assign the desired min max hours condition to the agent or the agent's main service queue for the week or as default .

Dynamic Availability

Dynamic availability was not used for scheduling the agent

Problem	Dynamic availability was not used for scheduling the agent.

Cause	• Agent has no approved valid dynamic availability selection for the week.
	• Agent has dynamic scheduling for the week.
	• There is no valid min max hours condition assigned to the agent or the agent's main service queue for the week or as default .
Solution	• Agent needs to submit valid dynamic availability selection for the week and the supervisor needs to approve it.
	• Remove the dynamic scheduling for the week.
	• Correct errors in the min max hours condition. The Schedule service log and debug files contains specific information about why the min max hours condition is invalid.
	• Assign the min max hours condition to the agent or the agent's main service queue for the week or as default.

Dynamic availability used for scheduling the agent does not match the dynamic availability rule

Problem	Dynamic availability used for scheduling the agent does not match the dynamic availability rule.
Cause	• The dynamic availability rule was change between the time the agent submitted the selection and when the schedule was run.
	• Agent selected smaller maximum number of shifts or larger minimum interval between shifts than configured in the dynamic availability rule.
Solution	Have the agent re-submit the selection and approve the new selection.

Agent with dynamic availability selection for cross midnight is not scheduled for either before or after midnight even though there is need in the service queue

Problem	Agent with dynamic availability selection for cross midnight is not scheduled for either before or after midnight even though there is need in the service queue.

Cause	The dynamic availability rule used for the selection does not allow schedules that cross midnight. For example, dynamic availability rule with an earliest start time of 00:00, latest end time of 24:00 allows agent to select an availability that seems like it crosses midnight, such as from 9:00 p.m. to 12:00 a.m. and 12:00 a.m. to 6:00 a.m.
Solution	Create a dynamic availability rule that allows cross-midnight selection, where the earliest start time is the same as or after the latest end time and earliest start time is not 00:00, then assign the dynamic availability rule to the agents, for them to select their availability and have them approved.

Sync Service Problems and Solutions

In general, symptoms of Sync service problems are seen in Unified Workforce Optimization as agent, team, service queue, and skill mapping information that is incorrect or missing.

Typically, the root cause for issues is that SyncServer.exe is unable to connect to one of the following:

- Unified CTI server (Unified CCX only)

- WFM database

The first step in troubleshooting is to verify the configuration on the ACD Connection step in WFM Configuration Setup (Postinstall). If NT Authentication is used to connect to the Unified CCE database, additional manual steps might be required to configure the service to run as an authorized user account. See the *WFM Installation Guide* for more information.

If problems continue to occur after the configuration is verified, you might need to inspect the log and configuration files.

The first and last name of an agent are the same after being synced to WFM

Problem	The first and last name of an agent are the same after being synced to WFM.
Cause	Unified CCX systems allow an agent to be created without a first name. In WFM, agents must have a first and last name, so when an agent with no first name is synced to WFM, the Sync service copies the agent's last name and sets it to the agent's first name.
Solution	There is no workaround for this issue, this behavior is as designed. Otherwise, enter a first name for the agent in WFM.

User Interface Problems and Solutions

Users cannot connect to the WFM Transaction services server using https, although http works

Problem	Users can't connect to the WFM Transaction services server. An error is displayed as follows: ■ Internet Explorer: "This page can't be displayed" ■ Chrome: "SSL Connection Error"
Cause	The webserver certificate is missing from the keystore used by the Jetty webserver on the WFM Transaction services server.
Solution	This issue was fixed starting in WFM 9.2(1) SR2. WFM Configuration Setup adds the webserver certificate if it is not in the keystore. Verify that the WFM certificates exist in the WFM keystore (see Keystore Check), and follow the procedure to rebuild the WFM keystore (see Rebuild the WFM Keystore).

The browser displays a warning about a problem with the WFM website security certificate when using https

Problem	The browser displays a warning about a problem with the WFM website security certificate when using https.
Cause	The WFM webserver certificate was not signed by a trusted certificate authority or was not signed correctly. The certificate has been signed correctly if the error message is: ■ Internet Explorer: "There is a problem with this website's security certificate" ■ Chrome: "Cannot connect to the real <IP address>"
Solution	See Keystore Check.

The browser displays a warning about a problem with the WFM website security certificate when using https with the host name

Problem	The browser displays a warning about a problem with the WFM website security certificate when using https with the host name.

Cause	The WFM webserver certificate has the IP address in the Subject/Owner field and does not have the host name in the Subject Alternate Name field.
Solution	Use the server IP address to access WFM with https. Using the server host name is not supported when using https to access WFM

The browser displays a warning about problems with the WFM website security certificate when using https even though it used to work

Problem	The browser displays a warning about problems with the WFM website security certificate when using https even though it used to work.
Cause	The signed certificate has expired.
Solution	Clear the WFM keystore (see Rebuild the WFM Keystore and Keystore Check).

The browser displays an error and will not display the WFM login page when using https

Problem	The browser displays an error and will not display the WFM login page when using https. When attempting to log in using a secure connection (https) an error is displayed as follows: ■ Internet Explorer: "This page can't be displayed" ■ Chrome: "SSL Connection Error"
Cause	The WFM certificate and/or CA certificates in the WFM keystore are missing or wrong. For example, the WFM certificate was signed by a CA whose CA certificate was not added to the keystore.
Solution	Do the following: ■ Sign the certificate. ■ Verify that the root certificate is added to the keystore before the intermediate certificates. ■ Verify that the root, all intermediate, and signed WFM certificates are added to the keystore (see Keystore Check). ■ Rebuild the WFM keystore if necessary (see Rebuild the WFM Keystore).

Unified Workforce Optimization logo favicon does not appear on the Internet Explorer tab

Problem	The Internet Explorer tab displays the favicon of some other website.

Cause	The internet files cache can become corrupted over time. These "favicons" are temporary images stored in the cache.
Solution	Clear out your browser history and temporary internet files. The correct favicon will once again be displayed on the tab.

WFM administrators cannot log in even though other users can

Problem	The administrators are configured to authenticate using the AD Security Group.
Cause	The Active Directory domain information configured in Postinstall is incorrect.
Solution	Verify the Base DN, User Base, and Admin User Group configured are correct. They are usually case and whitespace sensitive.
	Use an LDAP client tool such as JXplorer to log into Active Directory and make the equivalent LDAP queries as WFM.

Unified Workforce Optimization "bounces" when navigating through the interface

Problem	When viewed in Internet Explorer, the Unified Workforce Optimization interface "bounces" or the screen moves when attempting to enter data.
Cause	The Internet Explorer smooth scrolling option is enabled.
Solution	Disable smooth scrolling. In Internet Explorer, open Internet Options. On the Advanced tab, locate Browsing > Use smooth scrolling, clear the check box, and click OK.