Inova Solutions

UCC Express Data Source Installation Guide

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Cisco UCC Express

Data Source Installation Guide

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Inova Solutions

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1. Introduction

Inova Solutions is a global provider of real-time performance management solutions that help contact centers improve their operations through the use of actionable, real-time metrics and consolidated reporting, allowing you to gain insight into the relationship between the call center and overall organizational performance.

Inova's contact center solutions are built on Inova LightLink®, a powerful middleware that extracts, calculates, and unifies data from multiple contact center and enterprise operating systems and prepares it for display to an array of output options. Visual output options include LCD and LED digital signage and wallboards, agent desktop applications, and web-based dashboards. LightLink also allows you to program KPI thresholds that trigger an alert, such as a message, text, email, color change, or audio notification, ensuring that you're instantly aware of changing conditions that need your attention. With these capabilities, LightLink-based solutions provide a foundation for contact center performance management by managing your center's data, unifying your reporting, and ensuring the right people receive the right information when and how they want to see it.

1.1. Executive Summary

The Inova LightLink interface to Cisco UCC Express (UCCX) enables LightLink to retrieve an extensive array of data from Cisco UCC Express for real-time processing and display. LightLink is the powerful middleware that provides a real-time infrastructure for capturing and communicating information throughout the enterprise. Interfaces are available for dozens of Automated Call Distributors (ACDs), telephony systems, databases, and management applications.

2. Data Fields

Refer to Appendices A and B for details about the data fields.

3. UCC Express Version 4.x -7.x

3.1. Prerequisites

3.1.1. What the Customer Provides

Inova Solutions requires the customer to provide the following information and software:

- Hostnames or IP Addresses for all CCX Servers.
- UCCX CRA Database Instance name/s if customization has occurred.
- IT Assistance in configuring the proper local user account on the LightLink Server in order to allow proper Windows Authentication to the Cisco UCC Database. Typically this is a local account on both the SQL Server and LightLink Server, and the LightLink Services must run using these credentials. This user will correlate to a default read only database account to access the CRA database real-time tables on the CCX server. The local user accounts should be set up as:
  - v4, 5: wallboardUser
  - v6, 7: CiscoWbUsr
- Username and Password for the Cisco UCC Database if the Cisco default CiscoWbUsr or wallboardUser local account is not in place.
- Activation of the Real-time wallboard tables in the UCCX Administration site. *Note that Inova Solutions highly recommends that the customer review the Cisco CRS/UCCX Administration Guide – Real-time Snapshot Configuration for Wallboards for specific instructions on the configuration process. Please see Appendix C for more information.*
- Appropriate SQL Server driver to read the UCC Express source tables. Many of the Microsoft® ODBC drivers, including SQL Server, are generally available with a typical Windows Server 2003 or Server 2008 installation. However, if the driver is not present, the customer must supply the necessary ODBC driver, which can usually be found on the Microsoft support site.
- IT Assistance creating the Data Source Name (DSN) on the LightLink Server computer that connects to the Cisco UCC Express database.
- IT Assistance dealing with any intervening firewalls or network connectivity problems.

3.1.3. Hardware and Software Requirements

The hardware and software requirements are the same as general LightLink server requirements.

3.2. Product Specifications

3.2.1. Capacity & Limitations

The UCCX maximum queue count of 150 is well within LightLink system capability. However, systems with more than 100 queues should be carefully reviewed to ensure optimal performance.

Configuration & Refresh Rate: The LightLink UCCX data source requires that an ODBC DSN be set up on the LightLink server. Versions 7 and prior require that this be completed manually. Additionally, the real-time wallboard snapshot function must be enabled and configured using the UCCX administration tool.

The data polling interval on the LightLink server should match that set up in the UCCX configuration, in order to provide timely data updates while minimizing network and server loading. The default interval is 15 seconds, but options are also available for 10, 15, 20, and 25 seconds.

3.2.2. Compatibility

Cisco Unified CCX versions 4.x-7x are compatible with LightLink versions 5.5+

3.2.3. Licensing

The LightLink License Key will require ODBC as a data source.

3.2.4. Firewall

Any system connecting via the network may be affected by firewalls and firewall applications. Please ensure the firewall team is available to address any potential port and connectivity issues that may be encountered.

3.3. Installation and Basic Configuration

1. Create a local admin account on both the UCCX and the Inova Server:
    a. Username: *CiscoWbUsr*
    b. Password: *CiscoWbUsr*

2. Make sure that the Real Time Snapshot Configuration has been configured by the Cisco Admin
3. Create an ODBC connection on the Inova Server that points to the UCCX server using the Microsoft SQL Server driver.

   You must be logged in as *CiscoWbUsr* when connecting the ODBC. You can also run ODBC with the Run As command. This option is available in Server 2008 when you hold shift and right click on the shortcut.

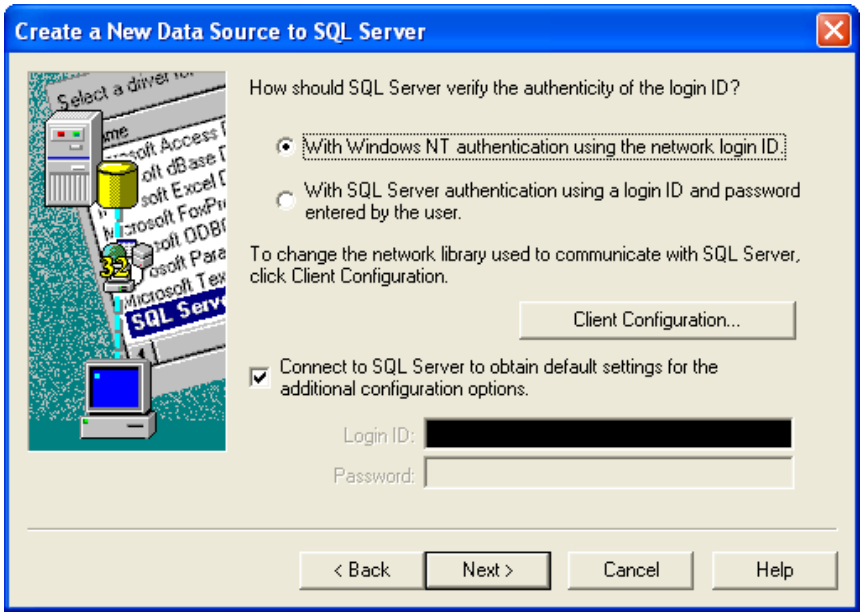

Figure 1

Complete the following steps from the Create a New Data Source to SQL Server Window (Figure 1):

a. Select the option to use Windows NT Authentication.

b. Click the Client Configuration button to set the SQL port (Figure 2). UCCX uses port 4433, which is different than the standard SQL port of 1433.

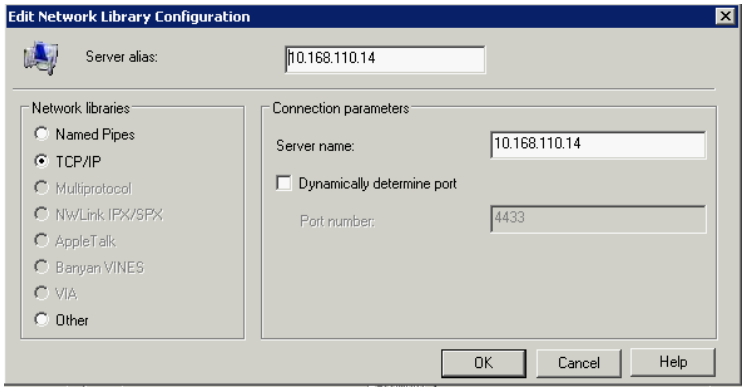

Figure 2

4. The third Create a New Data Source to SQL Server window opens (Figure 3). Change the default database to `db_cra` and click *Next*.

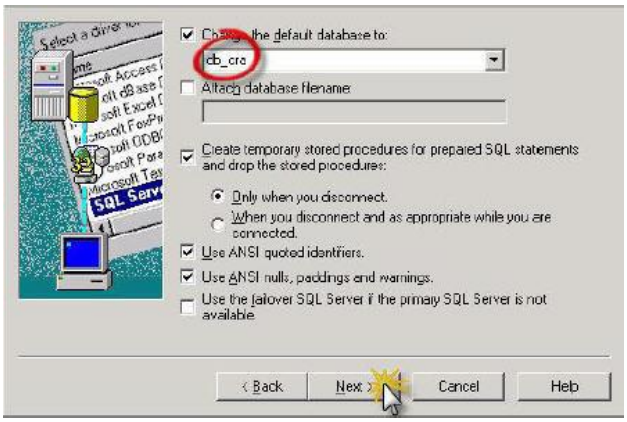

Figure 3

5. The fourth Create a New Data Source to SQL Server window opens (Figure 4). Click *Finish*.

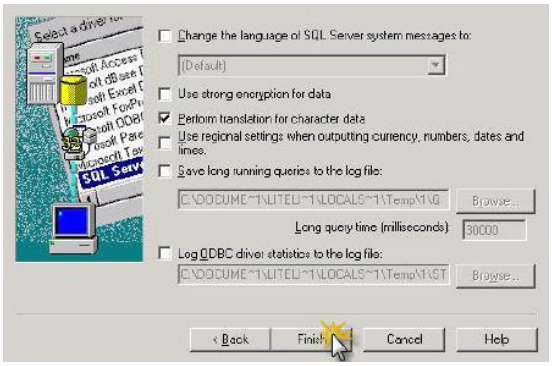

Figure 4

6. The ODBC Microsoft SQL Server window opens (Figure 5). *Click Test Data Source*.

   If the phrase "Test completed successfully" is returned, then click *OK*. If the test is unsuccessful, return to the configuration sequence and fix any errors.

Figure 5

7. Once the ODBC has been configured and connects successfully, create the new ODBC input in LightLink Administrator (Figure 6).

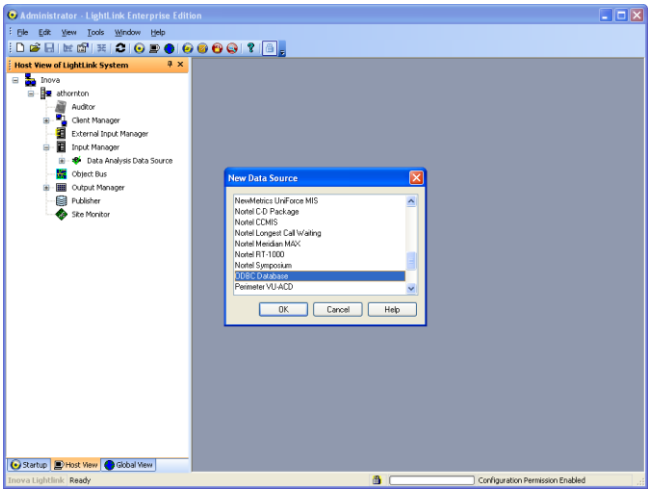

Figure 6

8. Navigate to the Database tab, and click *Browse*. Choose the ODBC connection that you just created; it should be listed under the Machine Data Sources tab. Select the "Use Trusted Connection" option. (Figure 7)
9. Enter the SQL Query, making sure to set a *where* clause, only bringing in the specific CSQs that the customer wants.
10. Click *OK* to save the new ODBC Database.

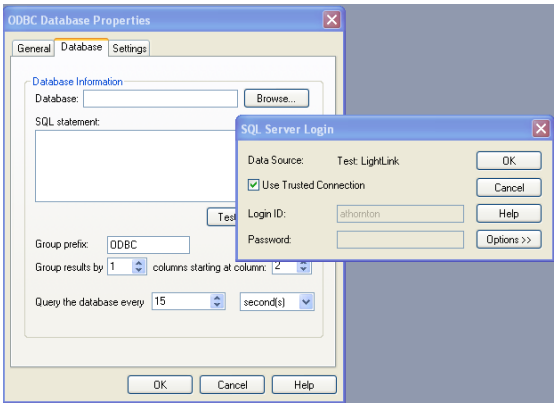

Figure 7

3.4. HA Configuration

UCCX v 4.x – 7.x systems update a host entry on the LightLink server, using login information entered in the Wallboard Snapshot section of the UCCX administration tool. To configure HA to work with your LightLink system, follow the steps below:

1. Edit the LightLink server host file (default location: \WINDOWS\system32\drivers\etc) and add the IP to `CRSSERVER`, which will establish a local alias for the UCCX master server hostname (Figure 8). `CRSSERVER` will be the hostname of your UCCCX server, and you will need to know the corresponding IP.

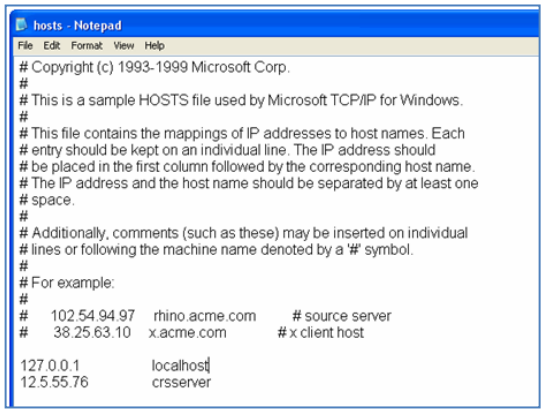

Figure 8

2. Create/Modify the ODBC DSN for UCCX on the LightLink Server, specifying the instance (Figure 9). Skip this step if already completed.

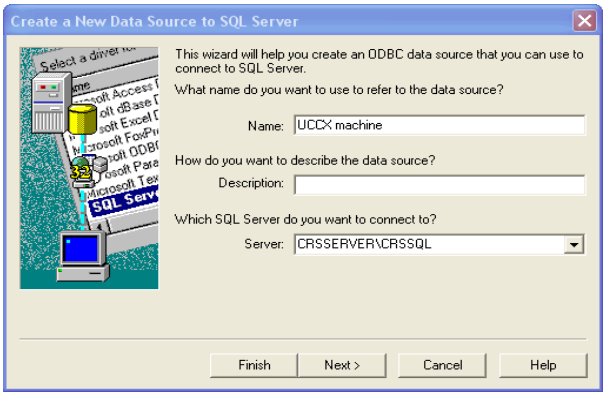

Figure 9

3. Set the [Wallboard System] section in the Cisco CRS Admin of the Real Time Snapshot Writing Config as follows (Figure 10):
    a. Server Name: LightLink Server hostname
    b. Administrator User ID: Admin user on the LightLink Server
    c. Password: Password for the above user.

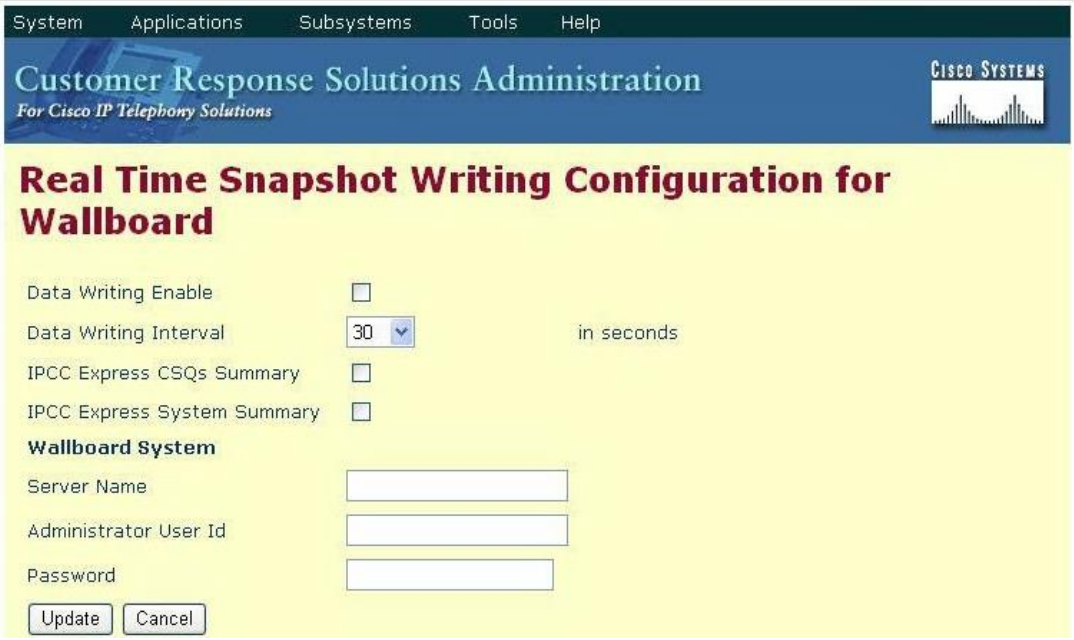

Figure 10

3.5. Known Configuration Issues

If you are unable to make a successful ODBC connection to the Cisco DB, you can start with the following:

1. Make sure that your CiscoWbUsr accounts have the same exact password. Also, remember that both username and password are case sensitive.
2. Make sure that the Cisco SQL Instance is using the default port (4433). You can check this by logging onto the UCCX server and navigating to and launching C:\Program Files\Microsoft SQL Server\80\Tools\Binn\SVRNETCN.exe.

   This is the SQL Server Network Utility Application. Once in, double click on TCP/IP option under the Enabled protocols. A new window will then show you the default port (Figure 11).

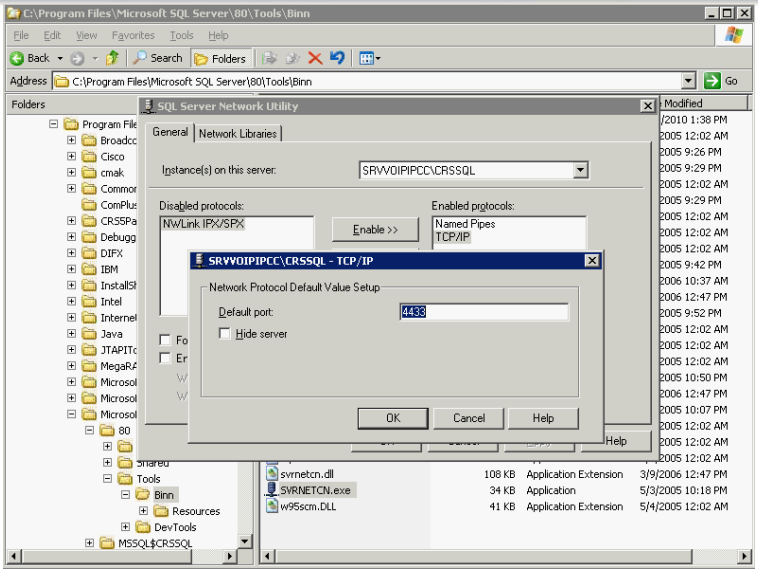

Figure 11

If you are experiencing an issue with HA on Server 2008, you can try the following:

1. UCCX 7 appears to not handle Windows Server 2008 User Account Control (UAC) properly by not embedding 'request elevation' in code. The current solution is to disable UAC notification as described in the Microsoft TechNet document found at:
    a. http://technet.microsoft.com/en-us/library/cc709691(WS.10).aspx (how to disable)
    b. http://technet.microsoft.com/en-us/library/dd446675(WS.10).aspx (explanation of levels)

4. UCC Express Version 8.x

4.1. Prerequisites

4.1.1. What the Customer Provides

Inova Solutions requires the customer to provide the following information and software:

- Working knowledge of SQL statements and of the Cisco UCC Express system, which can vary from site to site.

  Inova Solutions highly recommends that the customer review the Cisco CRS Admin Guide – Real Time Snapshot Writing Configuration for Wallboards for specific instructions on the ODBC creation process and available functionality for specific Express versions.

- The appropriate IBM Informix Database Driver for the Windows Operating System on the server that hosts the LightLink Middleware software.
- The information required by the Inova DSN Installer for Cisco UCCX 8.x installation package to create an ODBC connection to the Cisco UCC Express database, as listed below:
  - Primary UCC Express Server Hostname or IP Address
  - Primary UCC Express Server Database Instance Name (typically the host name with hyphens changed to underscores and appended with _uccx)
  - Secondary UCC Express Server Hostname or IP Address (If UCC Express is set up for High Availability)
  - Secondary UCC Express Server Database Instance Name (typically the host name with hyphens changed to underscores and appended with _uccx)
- IT Assistance dealing with any intervening firewalls or network connectivity problems.
- The password for the 'uccxwallboard' user account of the Cisco UCC database. *Cisco provides the read only 'uccxwallboard' account specifically for the use of partners such as Inova Solutions.*

4.1.2. Hardware and Software Requirements

The hardware and software requirements are the same as general LightLink server requirements.

4.2. Product Specifications

4.2.1. Capacity and Limitations

The LightLink system will be performing a database query which will return a known number of columns, but the number of records is determined by the complexity of the UCC Express system. The total number of data fields returned is the number of rows multiplied by the number of columns.

The two wallboard tables return approximately 25 columns per record. The LightLink UCC Express data source is limited to returning 80 records per data table query (approximately 2000 fields total). A system returning more than 80 records may require professional services as described in the next section.

Configuration & Refresh Rate: The LightLink UCCX data source requires that a 32-bit ODBC DSN be set up on the LightLink server; the LightLink system installers will handle this task for version 8 and beyond. Additionally, the real-time wallboard snapshot function must be enabled and configured using the UCCX administration tool.

The data polling interval on the LightLink server should match that set up in the UCCX configuration, in order to provide timely data updates while minimizing network and server loading. The default interval is 15 seconds, but options are also available for 10, 15, 20, and 25 seconds.

4.2.2. Compatibility

Cisco UCC Express v.8.x is compatible with LightLink version 5.5 or later, on both 32 and 64 bit servers using Windows XP, Server 2003, or Server 2008. Windows Server 2008 installs require LightLink version 5.7.327 or later.

Note that the HA mode is only supported with LightLink Middleware version 5.7.492 or later.

4.2.3. Licensing

The LightLink Middleware product requires that the ODBC Data Source Manager be licensed in order to connect to a UCCE data source.

4.2.4. Firewall

Any system connecting via the network may be affected by firewalls and firewall applications. Please ensure the firewall team is available to address any potential port and connectivity issues that may be encountered.

4.3. Installation and Basic Configuration

Prior to configuring the wallboard software, ensure that the 32-bit IBM Informix ODBC Driver associated with the version of Informix used by Express has been installed. Inova Solutions highly recommends that the customer review the *Cisco CRS Admin Guide – Real Time Snapshot Writing Configuration for Wallboards* for specific instructions on the ODBC creation process and available functionality for specific Express versions. Please see Appendix D for more information.

Follow the steps below to install and configure the Inova DSN for Cisco UCCX 8.0 to access the Cisco Unified CCX 8.0 database:

1. Open the Installation Wizard and click *Next.* (Figure 12)

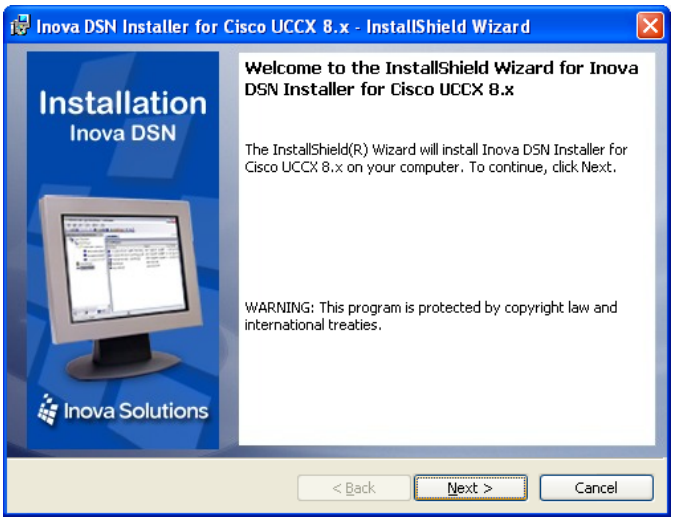

Figure 12

2. Read the Software License Agreement and select the button to accept the terms. Click *Next.* (Figure 13)

Figure 13

3. Accept the default destination folder, or click the *Change* button to modify the destination folder. Click *Next*. (Figure 14)

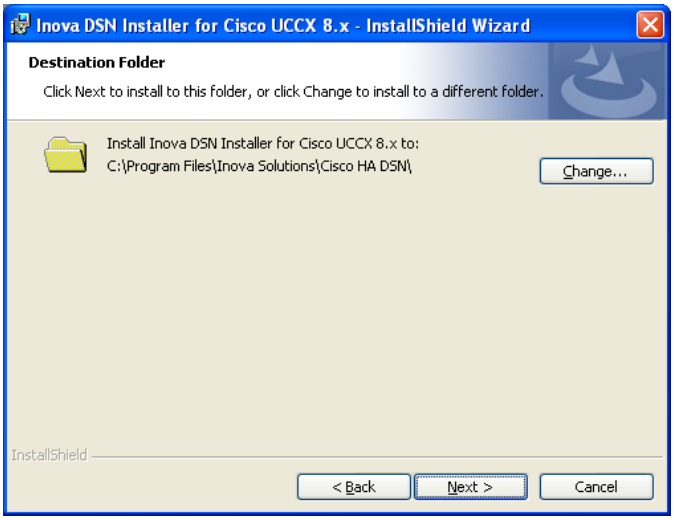

Figure 14

4. Enter the Hostname/IP Address and the Instance name for the primary server. If desired, also enter the Hostname/IP Address and the Instance name for a secondary server. Click *Next*. (Figure 15)

   The Instance name usually is the UCCX machine hostname with `_uccx` *at the end and all hyphens replaced with underscores.*

   When two Cisco UCCX servers are provided here, the installer will enable the standalone DSN Switcher service that edits the DSN configuration when the Cisco UCCX web services indicate the master has changed.

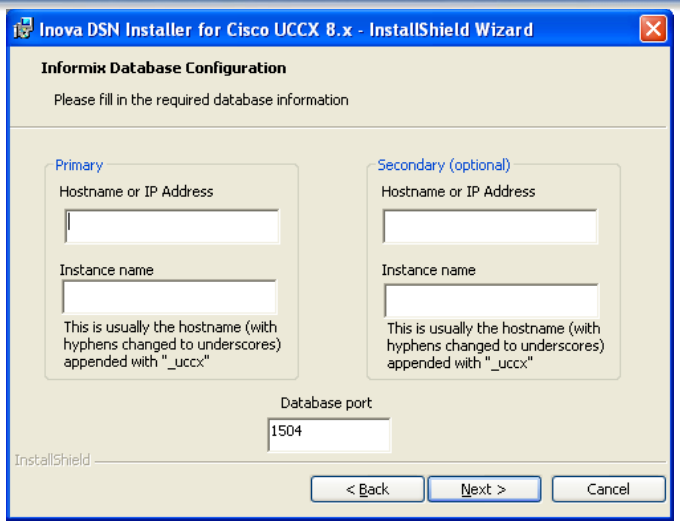

Figure 15

5. Click *Install* to complete the installation process. (Figure 16)

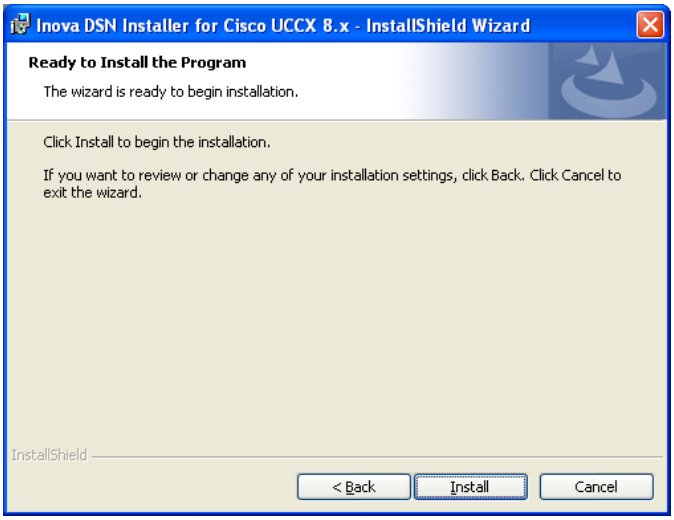

Figure 16

6. Open LightLink Administrator, obtain configuration privileges and create a New Data Source.
7. In the New Data Source dialog, select ODBC Database as the DSM type and click *OK*.
8. Assign a unique name for the ODBC Data Source.
9. Navigate to the Database tab and click Browse. Navigate to the Machine Data Source tab and select the UCCX 8.0 DSN, which will be named Inova DSN for Cisco UCCX 8.0 (Figure 17).

a. You will then need to enter the password for the "uccxwallboard" account in the space provided. This password is provided by the customer.

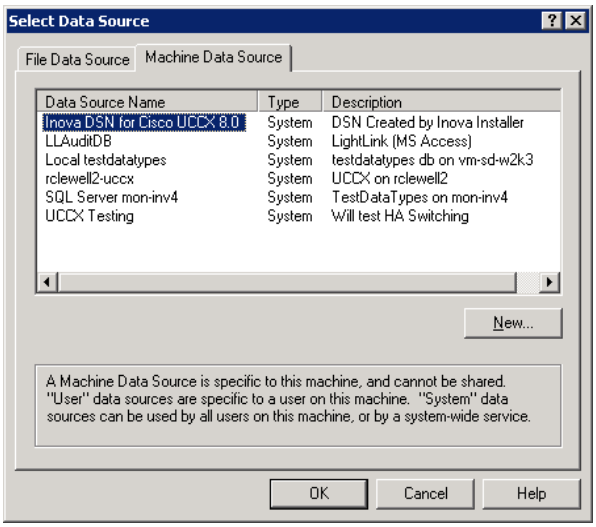

Figure 17

10. Enter the query, specify the query time and prefix.
11. Navigate to the Settings tab and select the *Automatically Reconnect* option.
12. Click *OK* to create the Data Source

4.4. HA Configuration

When two Cisco UCCX Servers are provided in the previously listed Installation process, the installer will enable the standalone DSN Switcher service that edits the DSN configuration when the Cisco UCCX web services indicated the master database has changed.

Please refer to *Section 5 - Troubleshooting* for more information.

5. Troubleshooting

5.1. HA Solution for UCCX 8.x

The following information may prove useful in troubleshooting the HA solution:

- **Service Name:** Inova HA DSN for Cisco
- **Supported:** While UCCX 8.0 is supported v5.5 or later, the HA option is only supported on v5.7.450 or later.
- **Ports:** Port 80 must be open for outbound traffic so the Inova HA Service can poll the Cisco Web Service.
- **Process Name:** Java.exe
- **Cisco Web Address URL:**
  http://UCCX Server IP Address/uccx/isDBMaster
  You must be able to reach this URL from the LightLink server.

Please refer to Table 1 for frequently asked questions and responses.

Question	Answer
What steps does the installer do?	The installer sets up the DSN and then installs and configures the Service.
What RegEdits are made?	HKey_Local_Machine\Software\Informix\SQLHosts holds the UCCX server configurations. HKey_Local_Machine\Software\ODBC\ODBC.INI\Inova DSN for Cisco UCCX 8.0\Server key holds the value changed by the switch service. On 64 Bit machines, HKey_Local_Machine\Software\wow6432node\ODBC\ODBC.INI\Inova DSN for Cisco UCCX 8.0\Server key holds the value changed by the switch service.
What does the service do on startup?	First, the service checks in with last server that was Master. Then it looks at web address, and checks the true/false status on each UCCX server. If none is listed then it checks in with Primary.
How do you restart the service?	You can do this either through the services.msc utility or through the stop/start batch files in the Cisco HA DSN folder.
What does the service do while running?	Polls the Web-Address every ~10 seconds. Sleeps between jobs.
Where are the logs located?	The Logs are located in C:\Program Files\Inova Solutions\Cisco HA DSN\logs

Is there any way to adjust the logging?	Yes, although you can only increase to see the debug logging. To increase it to debug logging: Open the log4j.xml file in the Cisco HA DSN folder and change to root\<level value = "debug" />. This will include all the previous logging levels, as well as show debug information.
What's the best way to install it on a working non-HA previous version Informix ODBC connection?	The service looks specifically for the "Inova DSN for Cisco UCCX 8.0" connection. This must exist for the HA functionality to work. You could either (a) rename the old ODBC connection or (b) delete that ODBC connection and let the installer recreate it during the install process.
Is there any way for us to test this without having Cisco failover?	There is no clean way to do this. Best way would be to work with the customer to test both sides of the failover, to ensure that they are working properly.
How Does the Service work? How does it switch servers?	It polls the Cisco Web Service to see if the Master DB has changed. If it has, the service switches the "server" key in the Registry (address listed above). Then, the Informix Driver polls the registry and sees the change. It handles the switch internally.

Table 1

Appendix A: UCCX 4.x – 7.x Data Fields

The complete field list is presented below. Note that the RtCSQsSummary table provides 24 real-time statistics for each configured queue, while an additional 23 metrics are provided as summary statistics for the UCCX system as a whole from the RtICDStatistics table.

Field	Description
CSQName	Name of the contact service queue
loggedInAgents	Number of logged-in agents
talkingAgents	Number of agents in talking state
workingAgents	Number of agents in work state
reservedAgents	Number of agents in the reserved state
availableAgents	Number of available (idle) agents
unavailableAgents	Number of unavailable agents
totalCalls	Total number of calls
callsWaiting	Number of calls waiting
callsHandled	Number of calls handled
callsAbandoned	Number of calls abandoned
startDateTime	Data collection starting time
endDateTime	Last time this table data was updated
convAvgTalkDuration	Average talk duration in HH:MM:SS format
convAvgWaitDuration	Average wait duration in HH:MM:SS format
convLongestTalkDuration	Longest talk duration in HH:MM:SS format
convLongestWaitDuration	Longest wait duration in HH:MM:SS format
convOldestContact	Oldest call in the queue in HH:MM:SS format
avgTalkDuration	Average talk duration in total milliseconds
avgWaitDuration	Average wait duration in total milliseconds
longestTalkDuration	Longest talk duration in total milliseconds
longestWaitDuration	Longest wait duration in total milliseconds
oldestContact	Oldest contact in the queue as an integer
callsDequeued	Number of calls dequeued

Table 2: RtCSQsSummary Table Fields

Field	Description
totalCSQs	Number of CSQs configured
loggedInAgents	Number of logged-in agents
talkingAgents	Number of agents in talking state
workingAgents	Number of agents in work state
reservedAgents	Number of agents in the reserved state
availableAgents	Number of available (idle) agents
unavailableAgents	Number of unavailable agents
totalCalls	Total number of calls
callsWaiting	Number of calls waiting
callsHandled	Number of calls handled
callsAbandoned	Number of calls abandoned
startDateTime	Data collection starting time
endDateTime	Last time this table data was updated
convAvgTalkDuration	Average talk duration in HH:MM:SS format
convAvgWaitDuration	Average wait duration in HH:MM:SS format
convLongestTalkDuration	Longest talk duration in HH:MM:SS format
convLongestWaitDuration	Longest wait duration in HH:MM:SS format
convOldestContact	Oldest call in the queue in HH:MM:SS format
avgTalkDuration	Average talk duration in total milliseconds
avgWaitDuration	Average wait duration in total milliseconds
longestTalkDuration	Longest talk duration in total milliseconds
longestWaitDuration	Longest wait duration in total milliseconds
oldestContact	Oldest contact in the queue in integer format

Table 3: RtICDStatistics Table Fields

Appendix B: UCCX 8.x Data Fields

The following configuration fields are available to the Cisco Administrator and may affect the fields identified in the RtCSQsSummary Table Fields and the RtUnified UCCXStatistics Table Fields, which are listed below.

Field	Description	Data Type	Keys and Null Option
CSQName	Name of the contact service queue	NVARCHAR(50)	NOT NULL
Logged In Agents	Number of logged-in agents	INT	NOT NULL
Talking Agents	Number of agents in talking state	INT	NOT NULL
Working Agents	Number of agents in work state	INT	NOT NULL
Reserved Agents	Number of agents in the reserved state	INT	NOT NULL
Available Agents	Number of available (idle) agents	INT	NOT NULL
Unavailable Agents	Number of unavailable agents	INT	NOT NULL
Total Calls	Total number of calls	INT	NOT NULL
Calls Waiting	Number of calls waiting	INT	NOT NULL
Calls Handled	Number of calls handled	INT	NOT NULL
Calls Abandoned	Number of calls abandoned	INT	NOT NULL
Start DateTime	Data collection starting time	DATETIME	NOT NULL
End DateTime	Last time this table data was updated	DATETIME	NOT NULL
ConvAvgTalk Duration	Average talk duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvAvgWait Duration	Average wait duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvLongest TalkDuration	Longest talk duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvLongestWait Duration	Longest wait duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvOldest Contact	Oldest call in the queue in HH:MM:SS format	NVARCHAR(25)	NOT NULL
Avg Talk Duration	Average talk duration in total milliseconds	INT	NOT NULL
Avg Wait Duration	Average wait duration in total milliseconds	INT	NOT NULL
Longest Talk Duration	Longest talk duration in total milliseconds	INT	NOT NULL
Longest Wait Duration	Longest wait duration in total milliseconds	INT	NOT NULL
Oldest Contact	Oldest contact in the queue as an integer	INT	NOT NULL
Calls Dequeued	Number of calls dequeued	INT	NOT NULL

Table 4 -RtCSQsSummary Table Fields

Field	Description	Data Type	Keys and Null Option
totalCSQs	Number of CSQs configured	INT	NOT NULL
Logged In Agents	Number of logged-in agents	INT	NOT NULL
Talking Agents	Number of agents in talking state	INT	NOT NULL
Working Agents	Number of agents in work state	INT	NOT NULL
Reserved Agents	Number of agents in the reserved state	INT	NOT NULL
Available Agents	Number of available (idle) agents	INT	NOT NULL
Unavailable Agents	Number of unavailable agents	INT	NOT NULL
Total Calls	Total number of calls	INT	NOT NULL
Calls Waiting	Number of calls waiting	INT	NOT NULL
Calls Handled	Number of calls handled	INT	NOT NULL
Calls Abandoned	Number of calls abandoned	INT	NOT NULL
Start DateTime	Data collection starting time	DATETIME	NOT NULL
End DateTime	Last time this table data was updated	DATETIME	NOT NULL
ConvAvgTalk Duration	Average talk duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
convAvgWait Duration	Average wait duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvLongest TalkDuration	Longest talk duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvLongest WaitDuration	Longest wait duration in HH:MM:SS format	NVARCHAR(25)	NOT NULL
ConvOldest Contact	Oldest call in the queue in HH:MM:SS format	NVARCHAR(25)	NOT NULL
Avg Talk Duration	Average talk duration in total milliseconds	INT	NOT NULL
Avg Wait Duration	Average wait duration in total milliseconds	INT	NOT NULL
Longest Talk Duration	Longest talk duration in total milliseconds	INT	NOT NULL
Longest Wait Duration	Longest wait duration in total milliseconds	INT	NOT NULL
Oldest Contact	Oldest contact in the queue in integer format	INT	NOT NULL

Table 5 -RtICDStatistics Table Fields

Appendix C: Excerpt from UCCX 7 Admin Guide

The Real-time Snapshot Config Menu Option

Many call centers use wallboards to display their real-time reporting status. Wallboards can display data such as available agents in CSQs, call volumes, talk times, wait times, and number of handled calls. You can enable the Cisco Unified CCX system to write Unified CCX real-time information to a database that can then be displayed on a wallboard.

Note You must purchase the wallboard separately, and configure and control it with its own wallboard software. Wallboard software and hardware are supported by the third-party wallboard vendors, not by Cisco.

You must install the wallboard software on a separate machine or desktop, not on the Cisco Unified CCX server. During installation of your wallboard software, you will need to configure your wallboard software to access the Cisco Unified CCX database. To do this, you need to assign a DSN, User ID, and password.

Use the Real-time Snapshot Writing Configuration for Wallboard web page to enable the system to write data to the wallboard system.

To access the Real-time Snapshot Writing Configuration for Wallboard web page, select **Tools > Real Time Snapshot Config** from the Cisco Unified CCX Administration menu bar.

The following fields are displayed on the Real-time Snapshot Writing Configuration for Wallboard web page.

Field	Description
Data Writing Enabled	If checked, the system writes the data to the database. If not checked, the system does not write the data to the database. The default is disabled.
Data Writing Interval	Sets the refresh interval for the wallboard data. Valid options: 5, 10, 15, 20, and 25.
Unified CCX CSQs Summary	If checked, writes information about each CSQ to the RtCSQsSummary table in the Cisco Unified CCX database.
Unified CCX System Summary	If checked, writes overall Unified CCX system summary to the RtUnifiedCCXStatistics table in the Cisco Unified CCX database.

Field	Description
Server Name	Host Name or IP address of the Server running the Wallboard software pointing to the HDS Database Server which contains the Wallboard Real-time Snapshot data
Administrator User ID	Unique identifier representing an administrator-level user of the Database Server.
Password	The password of the Administrator User of the Database Server.

Note Configuring these Wallboard settings enables the WallboardDataWriter to update the host file on the wallboard software system with the HDS master IP address whenever HDS mastership changes on the Cisco Unified CCX.

Note For details about the information written to the RtCSQsSummary and RtUnified CCXStatistics database tables, see the *Cisco Unified CCX Database Schema*.

The wallboard software must be installed on a separate machine or desktop, not on the Cisco Unified CCX server. During installation of your wallboard software, you will need to configure your wallboard software to access the Cisco Unified CCX database.

See the *Cisco Unified CCX Software and Hardware Compatibility Guide* for compatibility information.

To do this, you need to create a system Data Source Name (DSN) on your Windows server by performing the following procedure.

Procedure

Step 1 Go to **Start> Programs > Administrative Tools > Data Sources (ODBC)**.

The OBDC Data Source Administrator window opens.

Step 2 Click the System DSN tab and click **Add**.

The Create New Data Source window opens.

Step 3 In the Create New Data Source window, choose a SQL Server driver and click **Finish**.

The first Create a New Data Source to SQL Server window opens.

Step 4 In the first Create a New Data Source to SQL Server window, perform the following tasks:

- In the Name field, specify a name for this DSN (for example, Wallboard.)
- In the Description field, enter a descriptive name.
- In the Which SQL Server field, enter the Cisco Unified CCX server IP address or system name.

Step 5 Click **Finish**.

The second Create a New Data Source to SQL Server window opens.

Step 6 In the second Create a New Data Source to SQL Server window, perform the following tasks:

- Check the Windows NT server authentication button.
- Use *wallboardUser* as login ID and password.

Step 7 Click **Next**.

The third Create a New Data Source to SQL Server window opens.

Step 8 In the third Create a New Data Source to SQL Server window, change the default database to *db_cra* and click **Next**.

The fourth Create a New Data Source to SQL Server window opens.

Step 9 In the fourth Create a New Data Source to SQL Server window, click **Finish**.

The ODBC Microsoft SQL Server window opens.

Step 10 In the ODBC Microsoft SQL Server window, click **Test Data Source**.

If the phrase "Test completed successfully" is returned, then click **OK**.

If the test is unsuccessful, return to the configuration sequence and fix any errors.

Appendix D: Excerpt from UCCX 8 Admin Guide

Real-Time Snapshot Config Menu Option

Many call centers use wallboards to display their real-time reporting status. Wallboards can display data such as available agents in CSQs, call volumes, talk times, wait times, and number of handled calls. You can enable the Unified CCX system to write Unified CCX real-time information to a database that can then be displayed on a wallboard.

Note You must purchase the wallboard separately, and configure and control it with its own wallboard software. Wallboard software and hardware are supported by the third-party wallboard vendors, not by Cisco.

You must install the wallboard software on a separate machine or desktop, not on the Unified CCX server. During installation of your wallboard software, you will need to configure your wallboard software to access the Unified CCX database. To do this, you need to assign a DSN, User ID, and password.

Use the Real-Time Snapshot Writing Configuration for Wallboard web page to enable the system to write data to the wallboard system.

To access the Real-Time Snapshot Writing Configuration for Wallboard web page, choose **Tools > Real Time Snapshot Config** from the Unified CCX Administration menu bar.

The following fields are displayed on the Real-Time Snapshot Writing Configuration for Wallboard web page.

Field	Description
Data Writing Enable	If checked, the system writes the data to the database. If not checked, the system does not write the data to the database. The default is disabled.
Data Writing Interval	Sets the refresh interval for the wallboard data. Valid options: 5, 10, 15, 20, and 25.
Cisco Unified CCX CSQs Summary	If checked, writes information about each CSQ to the RtCSQsSummary table in the Unified CCX database.
Cisco Unified CCX System Summary	If checked, writes overall Unified CCX system summary to the RtICDStatistics table in the Unified CCX database.
Wallboard System	
Server Name	IP addresses of the Servers running the Wallboard software pointing to the HDS Database Server, which contains the Wallboard Real-Time Snapshot data. If you have multiple Wallboard servers, you can list their IP addresses in this field separated by commas.

Note For details about the information written to the RtCSQsSummary and RtUnified CCXStatistics database tables, see the *Cisco Unified CCX Database Schema Guide*.

See the *Cisco Unified CCX Software and Hardware Compatibility Guide* for compatibility information.

Creating a System DSN for Wallboard

You can create a system Data Source Name (DSN) on your Windows server by performing the following procedure.

Procedure

Step 1 Install the wallboard software and IBM Informix ODBC Driver (IDS version 3.0.0.13219 and above) on the wallboard client desktop.

Note You can download the Informix ODBC driver from the following URL: http://www14.software.ibm.com/webapp/download/search.jsp?rs=ifxdl. Download the IBM Informix Client Software Development Kit (CSDK) version 3.00 or higher for the operating system you are installing with the wallboard client. More information about the CSDK can be found at the following URL: http://www.ibm.com/software/data/informix/tools/csdk/.

Step 2 Select **Start > Settings > Control Panel**.

Step 3 From the Control Panel menu, select **Administrative Tools > Data Sources ODBC** to launch the OBDC Data Source Administrator.

Step 4 Click the **System DSN** tab. Then click **Add** to open the Create New Data Source dialog box.

Step 5 Scroll down to locate and select the IBM INFORMIX ODBC DRIVER.

Step 6 Click **Finish** to open the IBM Informix Setup dialog box.

Step 7 On the **General** tab, enter and apply a Data Source Name and Description.

Step 8 On the **Connection** tab, enter the values for the fields as shown in the table below:

Field	Description
Server Name	Enter the host name after replacing hyphens with underscore and appending the letters *uccx*. For example, *myserverhostname_uccx*.
Host Name	Enter the IP address of the primary Unified CCX server.
Service	Enter *1504*.
Protocol	Enter *onsoctcp*.
Options	Leave blank.
Database Name	Enter *db_cra*.

Field	Description
User ID	Enter *uccxwallboard*. This is the user id of the Unified CCX database created for wallboard.
Password	The password for the wallboard user that has been configured. You can change the password by going to **Tools > Password Management** submenu option from the Unified CCX Administration menu bar (see Password Management, page 20-17).

Step 9 Click **Apply**.

Step 10 Click the **Environment** tab and enter the values for the following fields:

Field	Description
Client Locale	Enter *en_US.UTF8*.
Database Locale	Enter *en_US.UTF8*.

Leave the values unchanged (keep blank or use defaults) for all other fields.

Step 11 Click **OK**.

Step 12 Return to the **Connection** tab and click **Apply and Test Connection**.

If the phrase "Test completed successfully" is returned, then click **OK**.

If the test is unsuccessful, return to the configuration sequence and fix any errors.

Using Wallboard Software in a High Availability (HA) Deployment

If you use wallboard software in a High Availability (HA) deployment of Unified CCX 8.0(1) and do not want any manual intervention in case of failover, you need to upgrade your Wallboard software.

Upgraded wallboard software should have a new service which periodically requests Unified CCX server for database mastership information using REST API (URL - *http://<Unified CCX server IP Address>/uccx/isDBMaster*). During failover, this new service in wallboard will update DSN registry to use new database master server.

This REST API can be requested only from those wallboard servers, which are configured through **Tools > Real Time Snapshot Config** web page from the Unified CCX Administration menu bar. See the following sub-sections for detailed information on different scenarios.

Using Upgraded Wallboard Software with New Service in a High Availability (HA) Deployment

If you use wallboard software in a High Availability (HA) deployment of Unified CCX 8.0(1), you will need to work with your wallboard vendor to use the new API exposed by Unified CCX 8.0(1).

Wallboard software with the new service ensures that the wallboard server always displays data from the master database server of Unified CCX and no manual intervention is required. Follow the steps mentioned below to complete the setup:

Procedure

Step 1 Create DSN using secondary server information and modify the same DSN using primary server information. This will create sqlhost entries for both the servers in a registry at *HKEY_LOCAL_MACHINE\SOFTWARE\Informix\SqlHosts*.

Step 2 Configure the wallboard software with new service as mentioned in the wallboard software documentation.

Step 3 Configure information of both the Unified CCX servers with new service of wallboard as mentioned in the wallboard software documentation.

Once you complete the steps mentioned above, no manual intervention is required in case of failover.

Using Existing Wallboard Software (without the New Service) in a HA Deployment

If you use the existing wallboard software without the new service in a High Availability (HA) deployment of Unified CCX 8.0(1), you will need to complete the following actions:

Procedure

Step 1 Create DSN using secondary server information and modify the same DSN using primary server information. This will create sqlhost entries for both the servers in a registry at *HKEY_LOCAL_MACHINE\SOFTWARE\Informix\SqlHosts*.

Step 2 Configure the wallboard software as mentioned in the wallboard software documentation.

Step 3 Whenever there is a failover, you need to manually change the DSN registry entry using the sub steps mentioned below:

a. Enter *http://<Unified CCX server IP Address>/uccx/isDBMaster* in a web browser from any wallboard client to know whether the requested Unified CCX IP address server has a database master or not.

b. On failover, change SERVER value to master DB instance name in registry of DSN under HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBC.INI

c. You can find the exact database instance name at *HKEY_LOCAL_MACHINE\SOFTWARE\Informix\SqlHosts*

Historical Reporting Menu Option

Caution While Unified CM supports Unicode characters in first and last names, those characters become corrupted in Unified CCX Administration web pages for RmCm configuration, Real Time Reporting, Cisco Agent/Supervisor Desktop, and Historical Reports., page 22-3

Use the areas of the Historical Reporting Configuration web page to perform a variety of tasks, including configuring users, installing client software, and purging your database.

To access the different Historical Reporting Configuration options, choose **Tools > Historical Reporting** and click any of the following submenu options from the Unified CCX Administration menu bar:

