UC Connector Deployment Guide

UC Connector 8.0.3

12/29/2021

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UC Connector 8.0.3 Deployment Guide

Welcome to the *UC Connector 8.0.3 Deployment Guide*. This document describes the deployment of the Unified Communications (UC) Connector into the Genesys contact center, as well as the integration of the UC Connector deployment with Microsoft Lync and Skype for Business, used as a Unified Communications platform in the Enterprise.

This document concentrates in particular on the features and configurations of UC Connector that implement the Genesys Smart Link use cases in the Enterprise. UC Connector can be used for this either standalone, or in integration with Microsoft Lync / Skype for Business. For an in depth description of the concepts and procedures needed for the UC Connector to integrate with Microsoft Lync or Skype for Business, please see the *UC Connector 8.0.3 Lync Integration Deployment Guide*.

Note: This document is valid for the 8.0.301 release(s) of UC Connector.

About UC Connector

Find out about UC Connector:

Deployment

Find out about the actions you must take to deploy UC Connector:

Other Topics

Find out about other important information for:

Presence Definition Document

About UC Connector

The UC Connector enables enterprise-wide customer service. It connects the Genesys contact center to the larger enterprise, allowing agents to consult the enterprise Knowledge Workers (off-site experts or product specialists) and take advantage of their special or expert skills. You can also use it independently from a Genesys contact center to enable Knowledge Workers to flexibly provide customer service in a more personal setting or when a contact center is not part of the company function.

In addition, the UC Connector is used as a component in other Genesys solutions to propagate presence information about agents or other users to and from the corporate presence function, either automatically when managed by Microsoft Lync 2010, Lync 2013, or Skype for Business, or manually through its user interface.

This section includes the following topics:

About the UC Connector

As a Genesys server application, you deploy UC Connector in the Genesys environment.

The UC Connector is used as an integral part of the Genesys integration with Microsoft Lync or Skype for Business, either in the contact center or the Enterprise. In this setting, UC Connector acts as a presence gateway with the Microsoft server, propagating presence information from Microsoft to Genesys and vice versa, and acting in concert with the Genesys SIP Server to provide call control services to users.

With UC Connector, Genesys routing capability and business rules, which normally govern the flow of communication within the contact center, are extended to control the flow of interactions into the back office or branch office, as well as to provide end-to-end reporting on these interactions. The UC Connector adds unique capabilities that make it easier to involve Knowledge Workers in customer interactions without impacting their normal workflow, providing enterprise-wide customer service.

In addition, the UC Connector is used as an integral part of the Genesys integration with Microsoft Lync Enterprise Voice, which is a contact center offering. In this setting, UC Connector acts as a presence gateway with Microsoft Lync server, propagating presence information from Lync to Genesys and vice versa, and acting in concert with the Genesys SIP Server to provide call control services to users.

New in This Release

8.0.301

The following new features were introduced in release 8.0.301.00 of UC Connector.

- UC Connector can be configured to map Genesys agent states to Microsoft presence states, and then push the Microsoft presence to Lync / Skype for Business. For more information, see Presence Connector Mode.
- UC Connector now supports Free Seating where Knowledge Workers are not tied to a particular Place in the configuration. For more information see Free Seating.

8.0.300

The following new features were introduced in release 8.0.300.00 of UC Connector.

- **Customized Knowledge Worker states.** UC Connector now allows you to customize the states available to Knowledge Workers in the UC Connector web client drop-down menu. The Knowledge Worker states and the corresponding text displayed in the menu can be customized by editing application resources. See Customized Knowledge Worker States.
- **External number redirect.** A user or an Administrator can now enable an external redirect number. Enabling this feature allows agents to accept preview calls at the specified number. See External Number Redirect.
- **Propagation of Genesys After Call Work state to Lync, in integration with Microsoft Lync Enterprise Voice.** When an agent enters the After Call Work state, the agent's presence state is:
  - Preserved in Genesys until the agent uses the Lync client menu to change state, or the After Call Work timer expires.
  - Propagated to the Lync server so that the agent's unavailability is also reflected in the corresponding Lync presence, with a configurable presence status and note values.

When the agent exits the After Call Work state (either automatically or manually), the agent's Lync presence state is set back to a value that is preserved from the Lync presence update. The agent's Genesys state is also updated with the corresponding value. See Enabling After Call Work.

8.0.200

The following new features were introduced in release 8.0.200.00 of UC Connector.

- **Interaction Preview-related reporting events.** UC Connector now creates reporting-related records in ICON for the user actions in the Preview window. Reporting tools can extract these records to create reports on the performance of Knowledge Workers while responding to previews. See Reporting Events.
- **Configurable hotkeys for interaction Preview.** You can now configure keyboard hotkeys to perform key actions when the Preview window is in focus. See Configuring Hotkeys for Interaction Preview.
- **Play audio with interaction Preview.** You can now add a custom audio file that UC Connector plays when the Preview window is displayed. See Enabling Audio on Preview or Ringing.
- **User logout ability.** Users can now explicitly logout of UC Connector by clicking a button in the user interface. See `enable-logout-menu` on Configuration Options.
- **Default routing**. UC Connector now includes an `login-queue` on Configuration Options.
- **Third-party call control window suppression**. UC Connector now suppresses web browser pop-ups for incoming calls based on User Data attached to the call. See `popup-udata-key` on Configuration Options.
- **Username in browser window**. UC Connector now displays the username for the logged in user in the browser window. The displayed string shows "first name" + <space> + "last name" + "- Genesys", as specified in the Person object for the logged in user in Configuration Manager.
  - John Smith - Genesys
    If neither field is present, then the Person user ID will be used:
  - LyncKW9 - Genesys

8.0.100

The following new features were introduced in release 8.0.100.00 of UC Connector.

- **Customized Help Button**. UC Connector now includes a Help button, which you can use to link to a customized help files located on your network or server. You can How It Works Customized Help.
- **Customized Default Languages**. UC Connector now lets you select from a variety of supported languages to be used in the interface. See Customized Languages.
- **Automated UC Connector Log-in**. UC Connector now supports automatic log-in for all users on startup. This feature must be enabled for integrations with Microsoft Lync Server 2010. See `user-auto-registration` on Configuration Options.
- **Enhanced Support for Microsoft Lync Server 2010**. UC Connector now uses the Microsoft Lync extensibility window ("conversation extension window" in later versions) for integration with UC Connector. See Lync / Skype for Business Integration.
- **Countdown Timer**. The interaction Preview window disappears automatically after a timeout if the user does not accept or reject the interaction. This The Overall Preview Interaction.

8.0.001

The following new features were introduced in release 8.0.001.00 of UC Connector.

- **Enhanced Instant Messaging Integration.** UC Connector now supports integrations with Genesys Instant Messaging (IM), independently of the third-party UC platform used. This allows for IM

functionality in IBM Sametime 8.x deployments. For Microsoft OCS, you can now choose instant messaging through Genesys IM or through the previous OCS-SIP Server integration.

- **Support for Microsoft Lync Server 2010**. UC Connector now supports integration with Microsoft Lync Server, for both voice and chat interactions.

8.0.0

The following features were included in the initial release 8.0.0 of UC Connector:

- **Support for UC platforms.** UC Connector supports integration with Microsoft OCS 2007 R2 and IBM Sametime 8.5.
- **Presence Mapping.** UC Connector determines Knowledge Worker availability by subscribing to user presence (states/updates) provided by the UC platform.
- **Telephony Integration**. Knowledge Worker telephony integration is available through T-Server, for calls flowing from the contact center to the Enterprise. Voice call control is provided through the standard UC client.
- **Instant Messaging Integration.** When integrated with the Microsoft Office Communication Server, UC Connector supports interaction flows that use the IM integration through SIP Server. IM content and call control is provided through the Microsoft Office Communicator UC client.
- **Interaction Preview Notification.** Genesys Routing can send a preview to a targeted Knowledge Worker, letting the Knowledge Worker accept or decline the interaction before actually routing the interaction. This can be done for a selected Knowledge Worker, or round robin for a group of Knowledge Workers. Multiple preview notifications can also be sent simultaneously"roadcast"o a set of Knowledge Workers. In this case the first Knowledge Worker to respond receives the interaction.
- **Business Data Exchange.** The Knowledge Worker can access call context and attached data related to any interaction that is transferred to them. Genesys UserData is passed to the UC client, displayed on their Interaction window, the Preview window, or the custom UC Connector tab of their UC client, depending on the configuration.
- **Limited Enterprise Footprint.** All deployment related to the integration with the UC platform takes place on the Genesys side, with no need for any new applications to be running on the Knowledge Worker desktop.
- **Reporting.** Business and performance metrics about the Knowledge Worker voice activity is provided through the Genesys Reporting solution. Knowledge Workers are configured in the Genesys system as standard agents, and standard reporting products and templates can be used to generate reports on how the Knowledge Worker is used or how the call is handled.

UC Connector Overview and Architecture

This section provides an overview of UCC Connector and describes its general architecture.

The Main Features

The following table lists the most notable features of UC Connector.

Feature	Description	Reference
Presence Monitoring	UC Connector determines Knowledge Worker availability by subscribing to user presence (states/updates) provided by the UC platform.	Presence
Free seating	Knowledge Workers are not tied to a particular place in the configuration. Instead, the agent and DN are dynamically assigned based on the attribute `AgentID` of the corresponding TLib event.	Free Seating
Telephony Integration	Knowledge Worker telephony integration is available through T-Server, for calls flowing from the contact center to the Enterprise. Voice call control is provided through the standard UC client.	Telephony Integration
Instant Messaging Support	When integrated with Lync / Skype for Business, UC Connector supports interaction flows that use the IM integration through SIP Server. IM content and call control is provided through the Lync /Skype for Business client. When deployed standalone, UC Connector can serve instant message interactions through its thin client user interface.	IM Integration
Interaction Preview Notification	Genesys Routing can send a preview to a targeted Knowledge Worker, letting the Knowledge Worker accept or decline the interaction before actually routing the interaction. This can be done for a selected Knowledge Worker, or round robin for a group of Knowledge Workers. Multiple preview	Preview

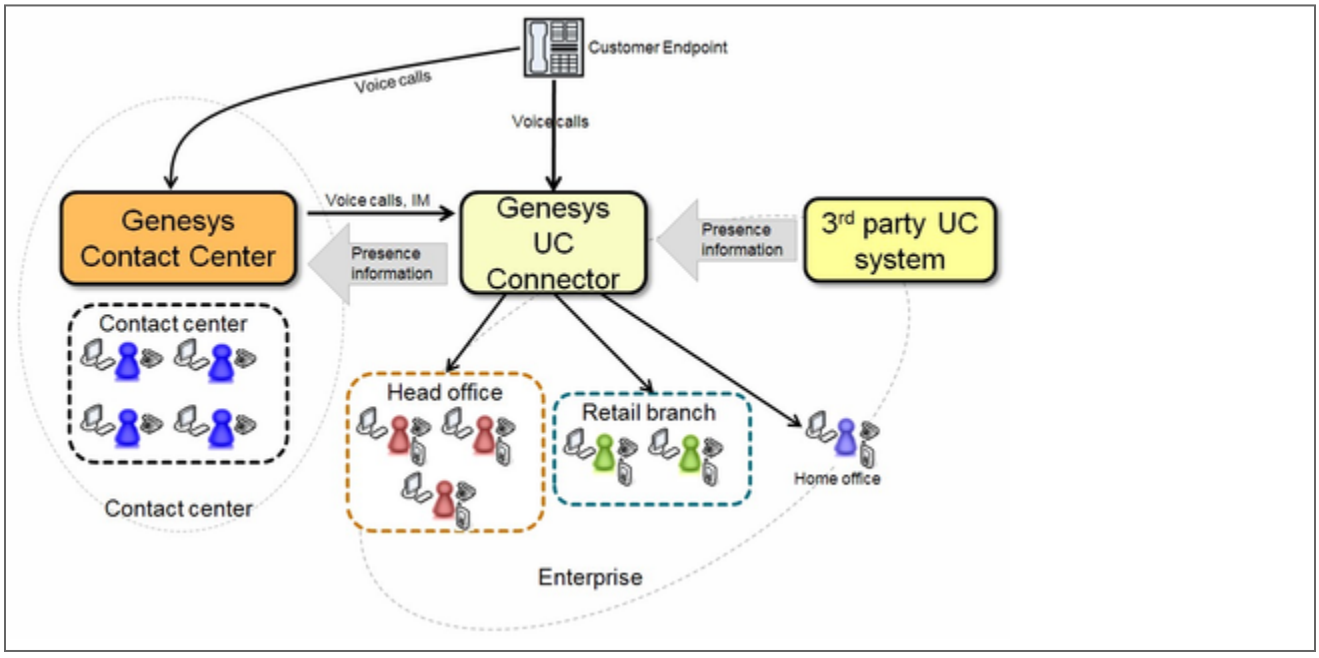
Feature	Description	Reference
	notifications can also be sent simultaneously—broadcast—to a set of Knowledge Workers. In this case the first Knowledge Worker to respond receives the interaction.	
Business Data Exchange	The Knowledge Worker can access call context and attached data related to any interaction that is transferred to them. Genesys UserData is passed to the UC client, displayed on their Interaction window, the Preview window, or the custom UC Connector tab of their UC client, depending on the configuration.	Transfers
Limited Enterprise Footprint	All deployment related to the integration with the UC platform takes place on the Genesys side, with no need for any new applications to be running on the Knowledge Worker desktop.	
Reporting	Business and performance metrics about the Knowledge Worker voice activity is provided through the Genesys Reporting solution. Knowledge Workers are configured in the Genesys system as standard agents, and standard reporting products and templates can be used to generate reports on how the Knowledge Worker is used or how the call is handled. In addition special reporting is available to track interaction previews. This is treated as a separate feature, see below for details.	Reporting
Interaction Preview-related Reporting Events	UC Connector can create reporting-related records in ICON for the user actions in the Preview window. Reporting tools can extract these records to create reports on the performance of Knowledge Workers while responding to previews.	Reporting
Default Routing	UC Connector includes an application-wide option to allow default routing in case of Universal Routing Server failure, if this functionality is supported by the T-Server and other	login-queue

Feature	Description	Reference
	solution components.	
Countdown Timer	The interaction Preview window disappears automatically after a timeout if the user does not accept or reject the interaction. This widget allows the user to see the time remaining to respond to the preview.	Timer
Customized Help Button	UC Connector includes a Help button, which you can use to link to customized help files located on your network or server. You can hide or show this help button as it appears in various parts of the user interface.	Help Button
Automated UC Connector Login	UC Connector supports automatic login for all users on startup. This feature must be enabled for integrations with Microsoft Lync / Skype for Business.	Optional Customization
Customized Default Languages	UC Connector lets you select from a variety of supported languages to be used in the interface.	Default Language
Customized Knowledge Worker States	UC Connector allows you to customize the states available to Knowledge Workers in the UC Connector web client drop-down menu. The Knowledge Worker states and the corresponding text displayed in the menu can be customized by editing application resources.	Knowledge Worker
External Number Redirect	A user or an Administrator can enable an external redirect number. Enabling this feature allows agents to accept preview calls at the specified number.	Redirect Number
Enterprise Voice	When an agent enters the After Call Work state, the agent's presence state is: • Preserved in Genesys until the agent uses the Lync client menu to change state or the After Call Work timer expires. • Propagated to the Lync server so that the agent's unavailability is also reflected in the corresponding Lync	After Call Work

Feature	Description	Reference
	presence with a configurable presence status and note values. When the agent exits the After Call Work state (either automatically or manually) the agent's Lync presence state is set back to a value that is preserved from the Lync presence update. The agent's Genesys state is also updated with the corresponding value.	
Play Audio with Interaction Preview	You can add a custom audio file that UC Connector plays when the Preview window is displayed, for additional alerting of knowledge workers.	Audio
Configurable Hotkeys for Interaction Preview	You can configure keyboard hotkeys to perform key actions when the Preview window is in focus.	Hotkeys

The Main Components

The main components and actors involved in the UC Connector interaction between contact center and enterprise are as follows:



- **Customer**—Customers use voice channels to connect with customer service provided by the Genesys contact center or directly to the enterprise through Genesys UC Connector.
- **Contact Center Agent**—Contact center agents have CTI-enabled phones and an Agent Desktop client (Genesys Workspace Desktop Edition, for example) that supports UserData. They can involve enterprise Knowledge Workers in the customer interactions through the UC Connector using voice or IM.
- **Enterprise Knowledge Worker**—Enterprise workers are not generally considered part of the contact center but their expertise can benefit customer interactions. The UC Connector can involve them directly in customer service even if a contact center is not deployed.
  Knowledge Workers are represented inside Genesys as agents (`person` objects in the Configuration Database) with access to all business rules, routing, and reporting available to regular agents.
- **Microsoft UC solution**—The Unified Communications (UC) software system used by the enterprise. In 8.0, UC Connector supports integration with the following UC solutions:
  - Microsoft Lync 2010/2013
  - Microsoft Skype for Business 2015
- **UC Connector**—The Genesys component used to integrate the Genesys environment with the third-party UC solution and enable enterprise-wide customer service.

The Main Functions

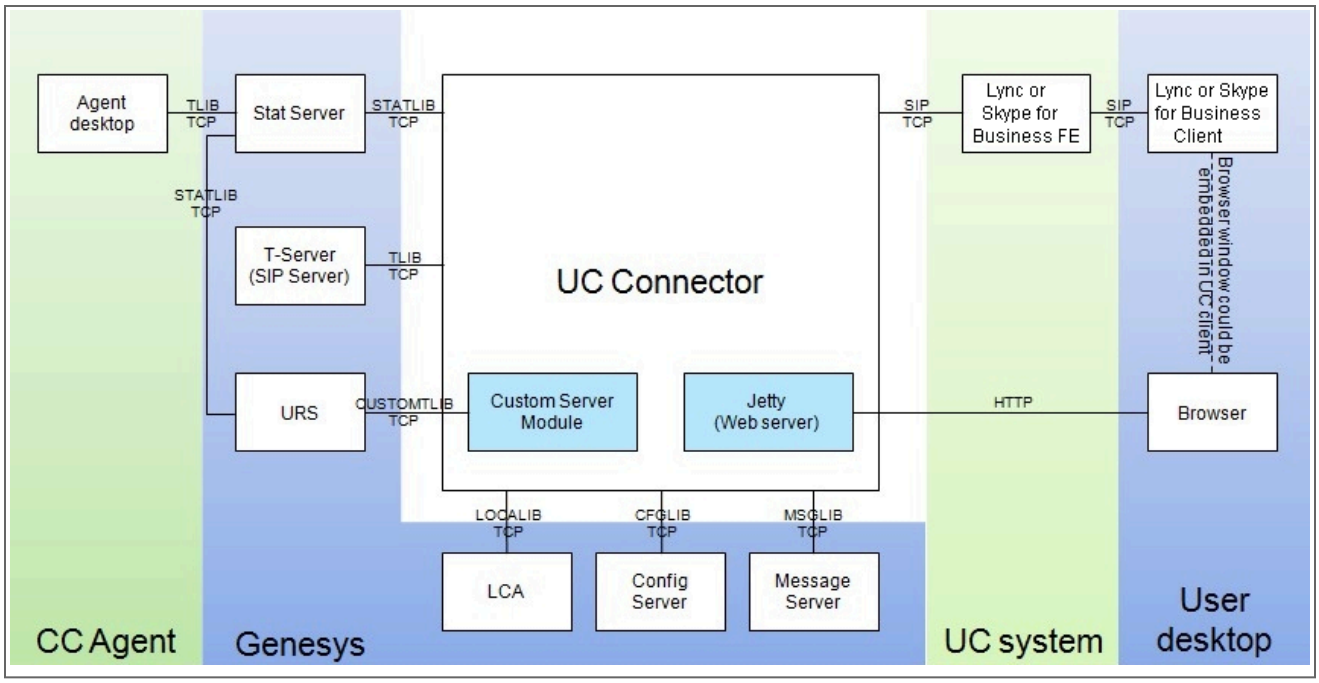
The main functions provided by a UC Connector integration are:

- **Voice interaction**—The customer uses voice to connect with the contact center or directly with the enterprise customer service function. The agent can also use voice when contacting the Knowledge Worker to determine availability (for example, when initiating a voice transfer).
- **Instant Messaging** (IM)—The agent can contact a Knowledge Worker using IM, either to ask if the Knowledge Worker can accept a particular customer interaction, or to pass typed information for convenience during a phone conversation.
- **Presence Monitoring**—By integrating with the third-party UC solution the Genesys environment is able to determine the availability status of a given Knowledge Worker so that it knows who might be available to handle the customer interaction. Note that in case of standalone deployment (not integrated with the Microsoft UC platform) UC Connector manages the presence of Knowledge Workers directly from their browser window.
- **Interaction Preview Notifications**—Knowledge Workers may not have job roles that allow for interruptions, even when their presence status shows they are available. When an agent sends a customer interaction to the Knowledge Worker a screen pop arrives at the Knowledge Worker's desktop providing relevant information about the current customer interaction. This gives the Knowledge Worker the opportunity to accept or decline the interaction based on their real availability.

Basic Architecture

The following diagram shows the different server elements involved in a UC Connector deployment, as well as the kinds of interfaces used to communicate among the components.

Genesys Components in the Solution



The server components included in the basic architecture include the following:

- **SIP Server**—SIP Server—Provides both a SIP and T-Library interface. SIP Server can act as a T-Server and softswitch for deployments with no third-party PBX. SIP Server is required for Instant Messaging.

> ### Warning
> T-Server must support emulated agent functionality to integrate with UC Connector. Most T-Servers include this functionality; for a list of supported T-Server please see the T-Server Compatibility topic.

- **Universal Routing Server (URS)**—Universal Routing Server (URS)—Provides Genesys routing for the customer interaction. Universal Routing Server processes the routing strategies designed in Interaction Routing Designer (IRD) that govern how the interaction is processed. The UC Connector integrates with URS as a Custom Server, using a proprietary protocol to execute, in this case, the Preview Mechanism for the Knowledge Worker selected in the routing strategy.

- **Workspace Desktop Edition**—The interface that appears on the desktop of Genesys contact center agents. Agents can use their Workspace Desktop Edition to send the customer interaction to the expert user or Knowledge Worker in the Enterprise, including any important notes or information that would be helpful to the expert.

> **Warning**
> Workspace Desktop Edition is not mandatory to the deployment. If using a different desktop client for your agents, some custom functionality might be required.

- **Stat Server**—Tracks information about the customer interaction. For UC Connector, Stat Server is used to monitor the DNs, agents, emulated agents, and other objects, making their states available to other Genesys components, in particular to URS for Genesys routing. UC Connector is also able to use statistics—for example, number of calls in a queue—that it can display in the Interaction window so that Knowledge Workers can check availability of a Contact Point before transferring a call.
- **Local Control Agent (LCA)**—The LCA is deployed on each host computer running Genesys components and is used to monitor the operating status of all locally running Genesys software.
- **Configuration Server**—Stores and manages the Configuration Database data that users can access through Configuration Manager or Genesys Administrator.
- **Message Server**—Receives error messages from all installed Genesys application and logs them into a common database.

Communication Between Components

The following table shows the protocols and libraries used for communication between the various server components.

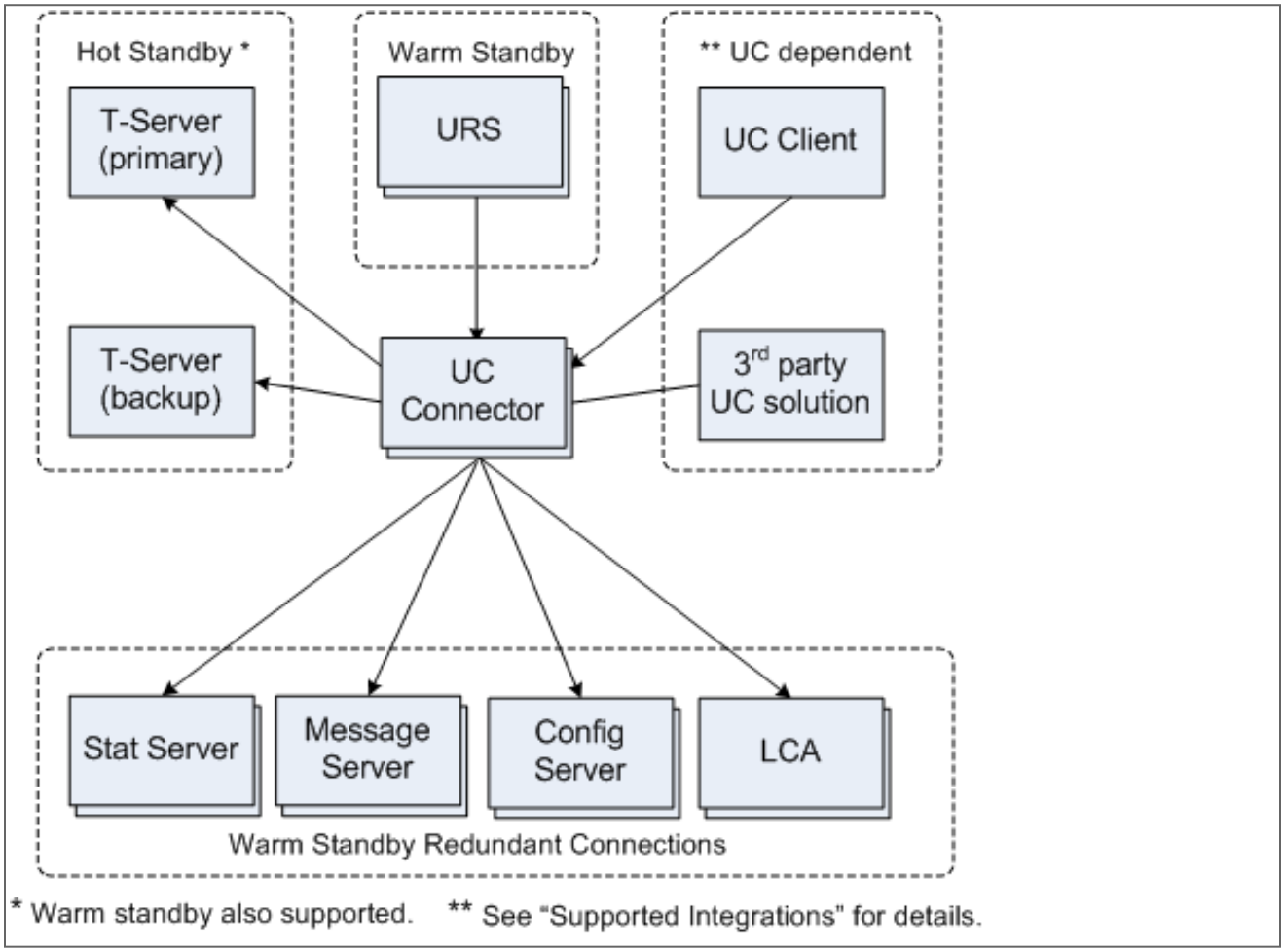
Function or Connection	Interface	Description
Communication Between Genesys Components		
Call control	T-Library messaging	All call control uses the Genesys proprietary T-Library protocol.
Instant Messaging in standalone mode	T-Library, HTTP	When not integrated with Microsoft Lync or Skype for Business, instant messages travel via T-Library between server components, and to a browser window over HTTP to the recipient's screen..
Microsoft Lync or Skype for Business		
Presence exchange between UC Connector and Lync / Skype for Business Front End Server	MS-PRES protocol (extended SIP from Microsoft)	MS-PRES extends SIP/SIMPLE in several ways for presence propagation. Please see https://msdn.microsoft.com/en-us/library/office/cc431501(v=office.12).aspx for a full definition of the MS-PRES protocol.
Instant Messaging	SIP messaging	SIP is used in direct Lync-SIP Server integration.
Lync or Skype for Business client	HTTP	A web-based "conversation

Function or Connection	Interface	Description
integration		extension window" in the Lync or Skype for Business client uses HTTP between UC Connector and the client.

High Availability

As a Genesys server component, UC Connector supports the warm standby redundancy and the IP takeover methods for a highly available (HA) deployment, meaning that a backup UC Connector server application remains initialized and ready to take over the operations of the primary server when needed. For more information, see UCC Connector High Availability Deployment.

Components



As a solution, different HA methods are used to provide greater reliability for the connections among the various components. HA is supported for the following connections:

- HA connections to Genesys servers established by UC Connector.
- HA connections to UC Connector established by Genesys servers.
- HA connections between UC Connector and the third-party UC platform.
- HA connections to UC Connector established by the UC client.

Genesys Servers

High Availability with Genesys Servers

The warm standby method is used for connections with Genesys Stat Server, Configuration Server, and Message Server. In this case, if any of these connections fails, the UC Connector will try to re-connect with the backup server instance. After a successful reconnection, UC Connector continues normal operation.

Genesys T-Servers

High Availability with Genesys T-Servers

For connections with T-Server, the *hot standby* method for HA provides a more robust redundancy. In this case, the solution maintains a connection with both T-Server instances, actively passing call data from primary to backup T-Server. This lessens the interruption in service, and allows for better survival of calls after the switchover process.

Warm standby connections are also supported with T-Server.

For more information, consult the Deployment Guide for your T-Server.

Universal Routing Server

High Availability with Universal Routing Server

For connections established from Universal Routing Server (URS) and the UC Connector, the warm standby method is used. If URS connection to UC Connector fails, it reconnects with the backup UC Connector instance, then resumes normal operation. Call processing during this process is dropped or delayed.

Connections to UC Connector initiated through the `Custom Server` are switched over as part of the Windows NLB configuration, together with the web interface. For configuration details, see High Availability.

Third-Party UC Plaform

High Availability with Third-party UC platform

For connections with the third-party UC platform, the HA method used depends on which UC platform the UC Connector is integrated with.

HA is only supported with Enterprise Edition of Microsoft Lync / Skype for Business (Standard Edition places all components on a single host).

Multiple Front End Servers make up a highly available pool of resources. UC Connector initiates and manages the connection to the FE Servers pool, which is contacted through a single URL or virtual IP address. If the connection between UC Connector and this contact point fails, UC Connector initiates the re-connection process. In this case, the Microsoft platform is configured behind a third-party load balancer. For a sample architecture diagram, see the Microsoft Lync or Skype for Business diagram above. For additional information, see the consult the Microsoft documentation.

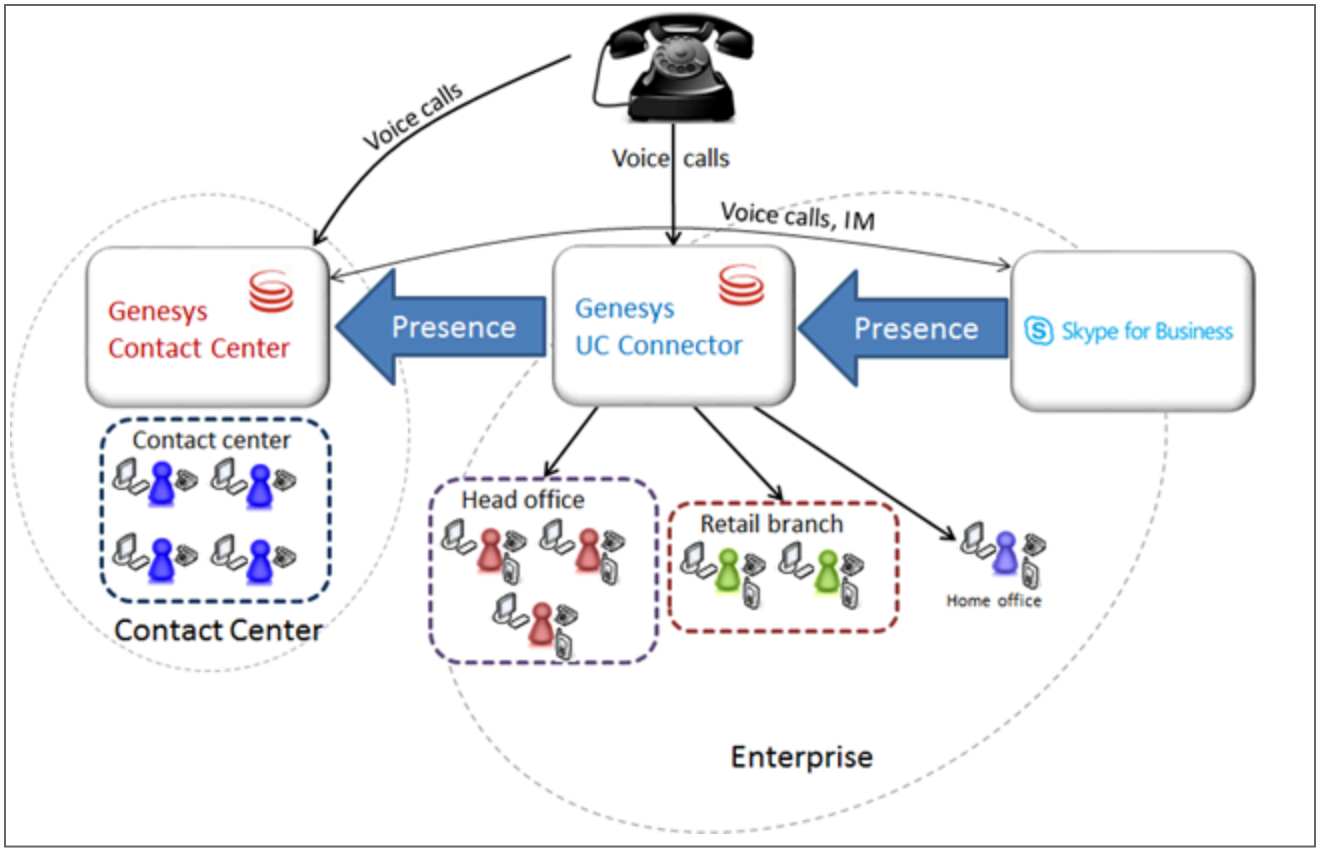
Configuring High-Availability UC Connector Instances

For information about configuring UC Connector for a high-availability deployment, see UC Connector High Availability Deployment.

Deployment Modes

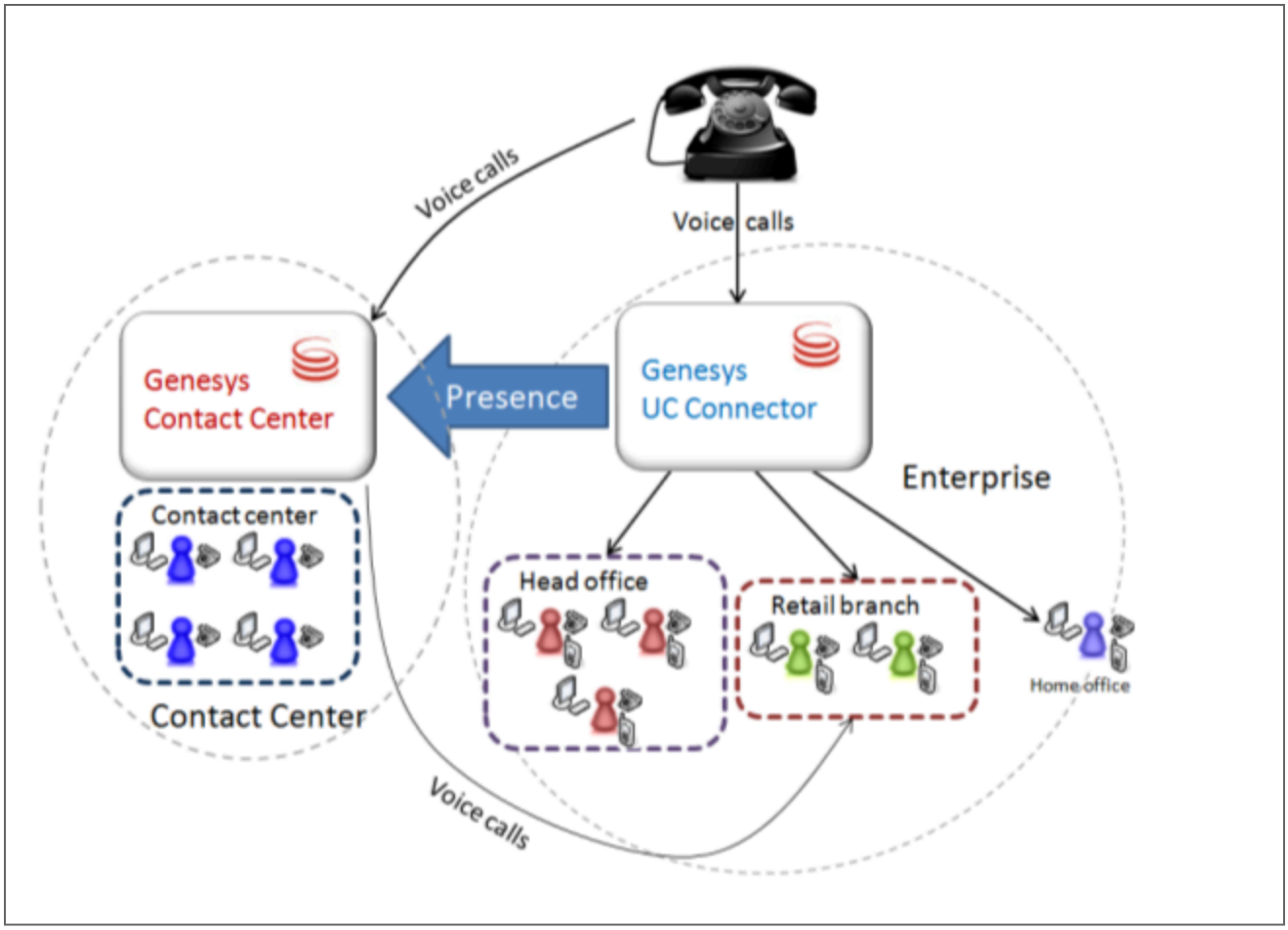
You can deploy and configure UC Connector in four different modes listed in this section.

Normal Mode



This is the typical UC Connector deployment, in which UC Connector subscribes to a Unified Communications system for presence synchronization, and acts as a web server to present interaction preview pop-ups and call control windows to users.

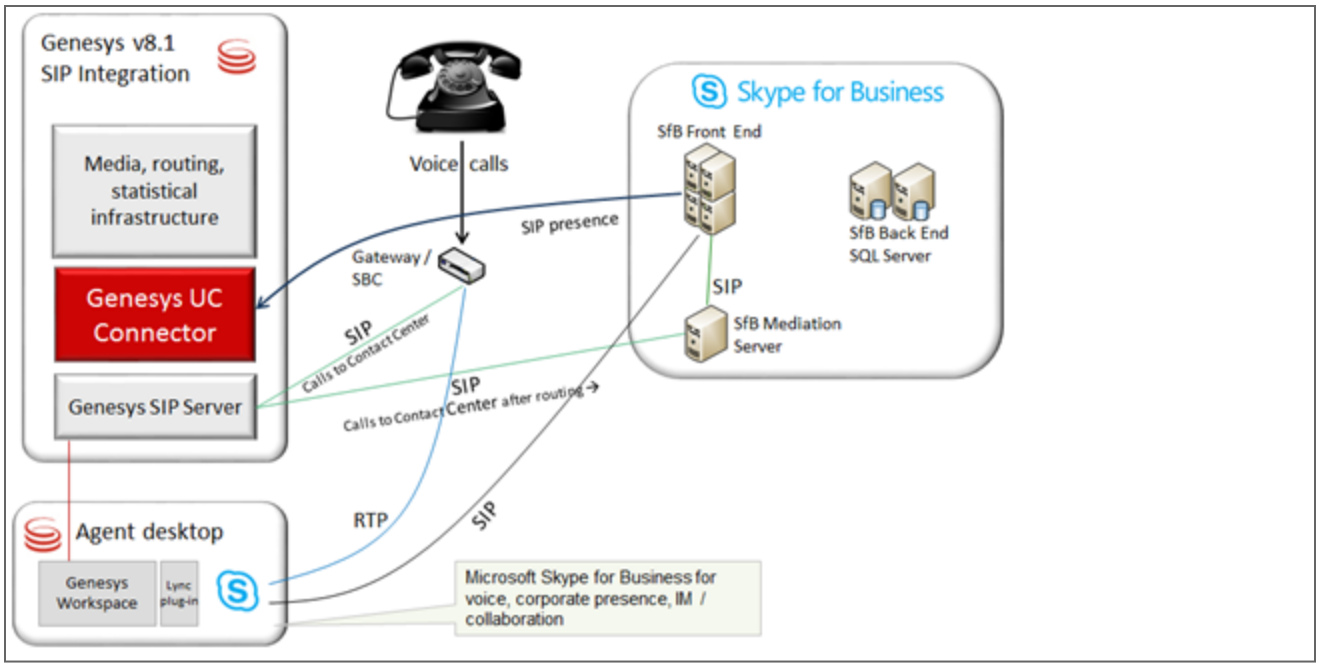
Standalone Mode



In standalone mode, UC Connector does not subscribe to a Unified Communications system to receive the user's presence. This may be because no compatible UC system is present in the Enterprise. In this case, UC Connector uses its own information to relay presence information to the Genesys environment. Users can control their presence state manually, by logging in and out of the UC Connector and acting on the control to put themselves in one of the presence states that are defined for them. See Customizing Knowledge Worker States in Customizing UCC Connector and the enable-logout-menu option.

> **Tip**
> These options are only enabled in standalone mode.

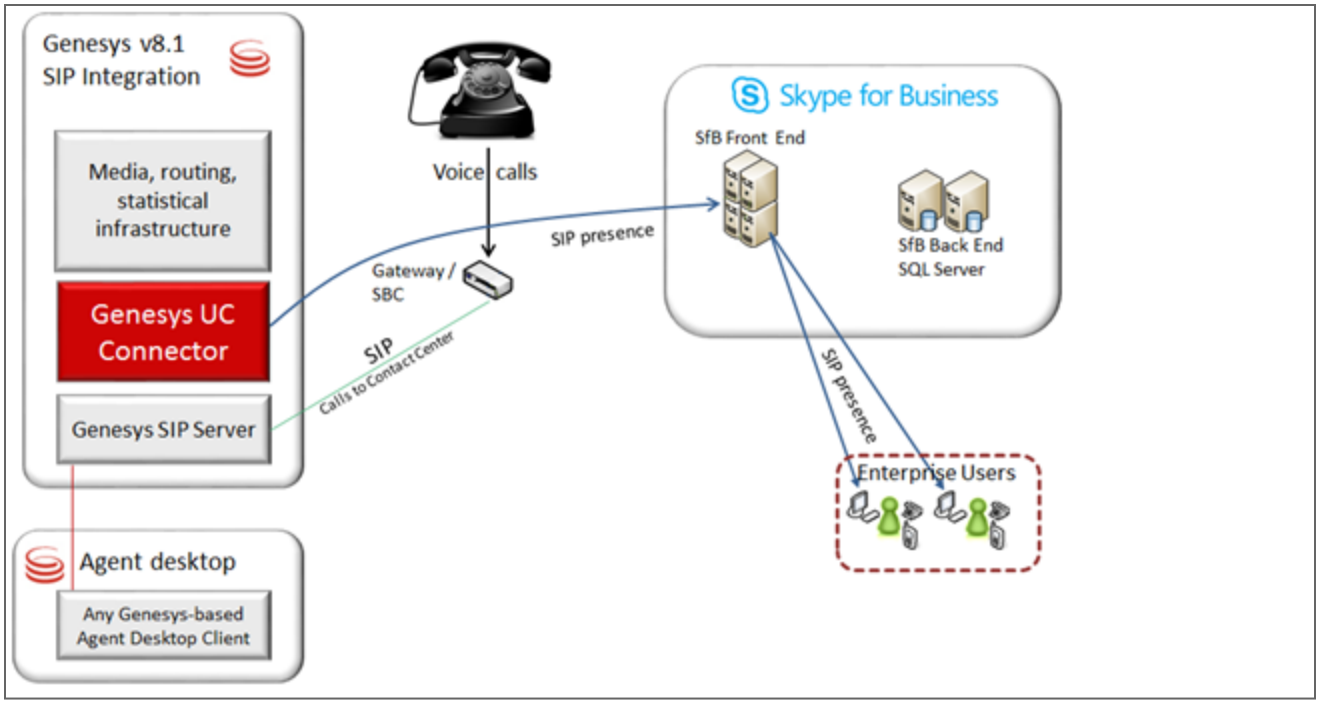
Presence propagation with a SIP Server-based integration with Lync or Skype for Business



Genesys can integrate with Lync or Skype for Business Enterprise Voice deployments using the SIP Server as a SIP Application Server. This integration only supports voice from the PSTN, and exchanges presence between Microsoft and Genesys using the UC Connector. Here the UC Connector subscribes to presence from the Lync or Skype for Business Front End Server and maps it into Genesys presence for agents. It can also push Genesys presence to Microsoft, for states that are not covered by Lync or Skype for Business like After Call Work or Legal Guard. Please see the *UC Connector Lync Integration Deployment Guide* for detailed information about this mode.

> ### Tip
> Genesys also offers a native integration with Lync 2013 and Skype for Business that does not use UC Connector. Please see the Genesys Web site for information on the Multimedia Connector for Skype for Business.

Presence Connector for Lync or Skype for Business



In this case UC Connector is used to push presence of agents in a Genesys Contact Center to the Microsoft-based corporate presence, so co-workers know when an agent is available or busy. Agents in this mode receive voice service from Genesys, and not Lync or Skype for Business. However, the corporate presence is based on Microsoft and it is necessary to let the agents' coworkers know about their status. UC Connector pushes the Genesys presence state to Microsoft, after mapping the presence to a Microsoft state.

Example of Messaging

Below is an example of messaging when UC Connector, while in the "pull" mode, monitors the Presence Information of the Lync contacts. When a call arrives at the Lync agent, UC Connector receives a SIP notification "On a Call" from the Lync server and sends the RequestAgentNotReady request to T-Server for the corresponding agent DNs.

```
16:59:31.140 Dbg 09900 [DEBUG] <<< receiving request
[NOTIFY sip:192.168.92.172:55117;ms-received-cid=3C0D700;grid SIP/2.0
Via: SIP/2.0/TLS
192.168.92.74:5061;branch=z9hG4bKEDA8FDD1.3DDFA90BEAFEDDF3;branched=FALSE;rport=5061,SIP/2.0/
TLS 192.168.92.75:56267;branch=z9hG4bK7CCE6513.0400ED9AB1C66DF3;branched=FALSE;ms-received-
port=56267;ms-received-cid=3747900
Max-Forwards: 69
To: <sip:lync-user0@lyncdco13.lab>;epid=56b4641a00000000;tag=f30acb63
From: <sip:lync-user0@lyncdco13.lab>;tag=D62C0080
Call-ID: 07dd7d53ddd1f347e9cebe4d99abed50@192.168.92.172
```

```
CSeq: 4 NOTIFY
Require: eventlist
Content-Type: application/msrtc-event-categories+xml
Event: presence
Subscription-State: active;expires=29909
Supported: ms-dialog-route-set-update
Content-Length: 659

<categories xmlns="http://schemas.microsoft.com/2006/09/sip/categories" uri="sip:lync-
user2_qa94@lyncdco13.lab"><category xmlns="http://schemas.microsoft.com/2006/09/sip/
categories" name="state" instance="1" publishTime="2017-08-22T23:59:31.107">
<state xsi:type="aggregateState" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://schemas.microsoft.com/2006/09/sip/
state"><availability>6500</availability><activity token="on-the-phone" /><delimiter
xmlns="http://schemas.microsoft.com/2006/09/sip/commontypes" /><device>computer</device><end
xmlns="http://schemas.microsoft.com/2006/09/sip/commontypes" /></state>
</category>
</categories>]


16:59:31.148 Dbg 09900 Sending message to 'Voice.TServer@SIPS - tcp://192.168.92.172:33243'
message: 'RequestAgentNotReady' (11) attributes:
                AttributeReferenceID [int] = 13
                AttributeThisDN [str] = "5002"
                AttributeReasons [bstr] = KVList:
'KW_UC_STATUS' [str] = "busy"
'KW_UC_NOTE' [str] = ""
```

Limitations

UC Connector 8.0 currently has the following limitation:

- UC Connector does not support After Call Work (ACW) time for Knowledge Worker users. Ensure that ACW in the Agent Login for the Knowledge Worker is disabled (set both `wrap-up-time` and `legal-guard-time` to `0`).

> **Tip**
> ACW is supported for contact center agents who use Microsoft Lync Voice.

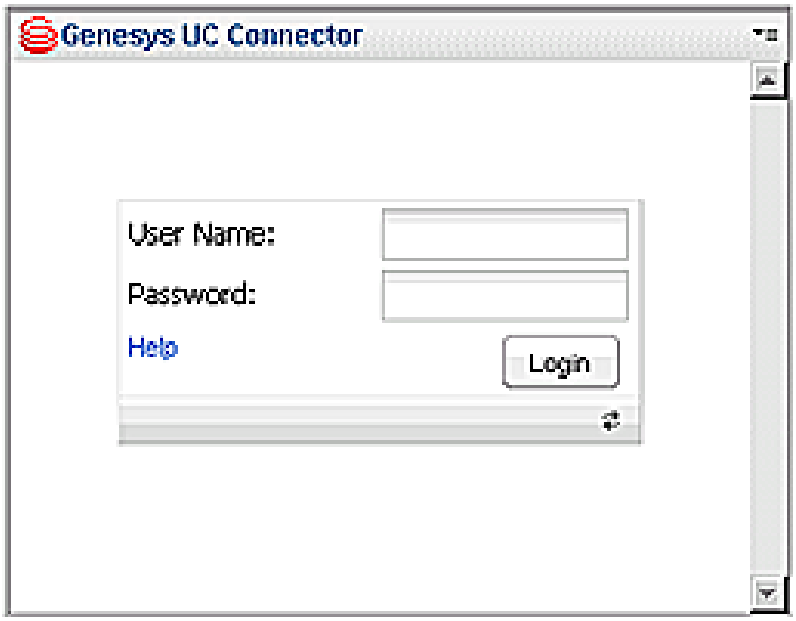
How It Works

This section describes how the different functions enabled by the UC Connector work. It contains the following topics:

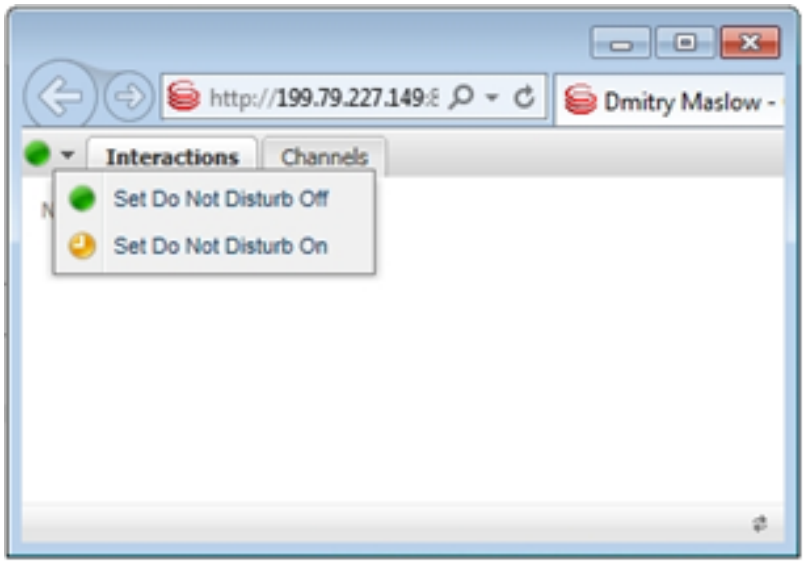
UC Connector GUI

UC Connector shows a thin-client GUI to users, which allows limited agent operations. The GUI allows users to log into and out of Genesys, to change their Genesys status, to set up alternative phone numbers to be reached (if enabled), and to access current interactions.

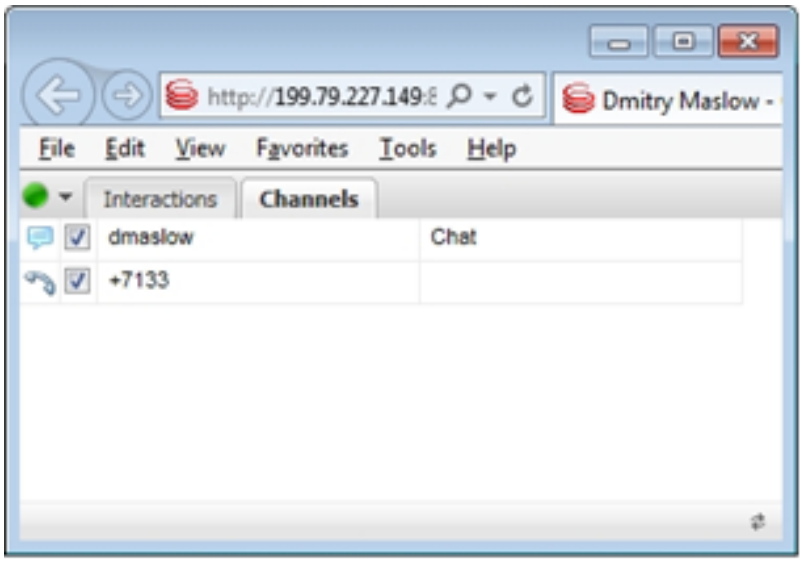
Logging into Genesys is done directly from the UC Connector GUI only in standalone mode. If UC Connector is also integrated with Microsoft Lync or Skype for Business, logging into the Microsoft platform automatically logs the user into Genesys as well. So this window is shown only for standalone deployments:



Users simply enter their Genesys username and password, and click on Login. The Help link points to a special URL that can be customized from the UC Connector options and so it can be changed as appropriate for each deployment.



Once the user is logged in, the GUI has two tabs. The first tab shows information about the current interaction (when an interaction is ongoing). The states that can be set from the presence control button are customizable (see Customized Knowledge Worker States). Also, when in standalone mode the button allows to log out of UC Connector.



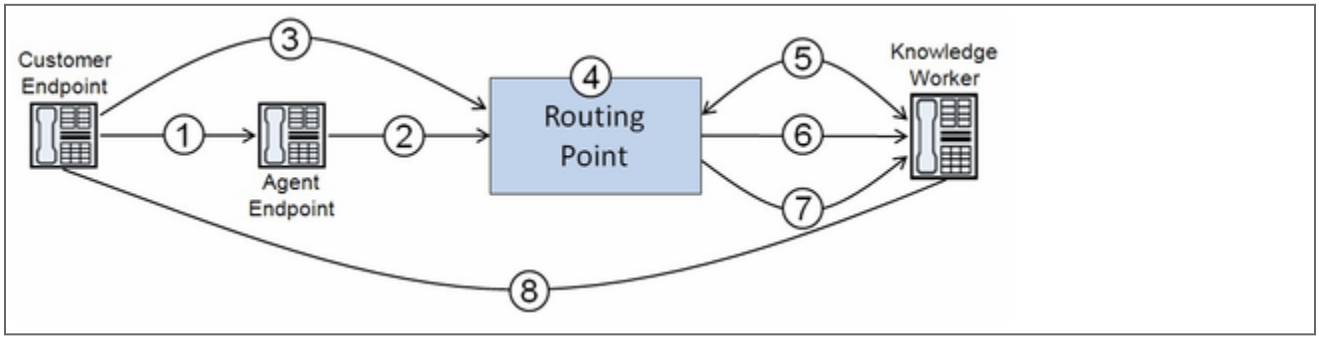
The second tab shows the channels (DNs) that are enabled for the Knowledge Worker, and allows the user to enable / disable them individually. For instance, a user may be ready to receive IM interactions and not voice calls, or may wish calls to be sent to a mobile phone instead of the desk phone.

Voice Scenarios

The UC Connector integration supports voice interactions between the Knowledge Worker, the contact center agent, and the customer. This can involve direct calls from the customer to the enterprise customer service function, or transfers and conference calls initiated by the agent. Knowledge Worker transfers to agents in the contact center are also available, as well as transfers and conferences between Knowledge Workers.

Contact Center to Knowledge Worker

In this scenario, either a customer calls directly into a number that maps to a group of Knowledge Workers engaged in customer support (bypassing the contact center) or a contact center agent engaged in a voice call with a customer decides that help from an expert outside of the contact center is needed, and so initiates a call transfer. In both cases the interaction can go either to a particular Knowledge Worker, or more commonly to a group of Knowledge Workers.



The call flow for this scenario is as follows:

1. The customer dials the contact center and a voice channel is established with a particular agent. Regular Genesys call distribution from a Routing Point or ACD Queue determines which agent will handle the customer interaction.
2. The agent decides that a Knowledge Worker is needed to satisfy the customer interaction. From their Interaction Workspace, the agent initiates a call transfer to a designated Knowledge Worker `Routing Point` DN.
3. Or, the customer contacts an Enterprise Customer Support number directly, which does not involve the contact center.
4. The routing strategy loaded onto this `Routing Point` DN determines how the particular Knowledge Worker is selected. You can design the strategy so that:
   - The agent specifies the specific Knowledge Worker that they need.
   - The routing strategy selects a particular Knowledge Worker from a group, using a round-robin approach based on worker availability. This distributes the workload, making sure the same expert

is not overused (recommended approach).

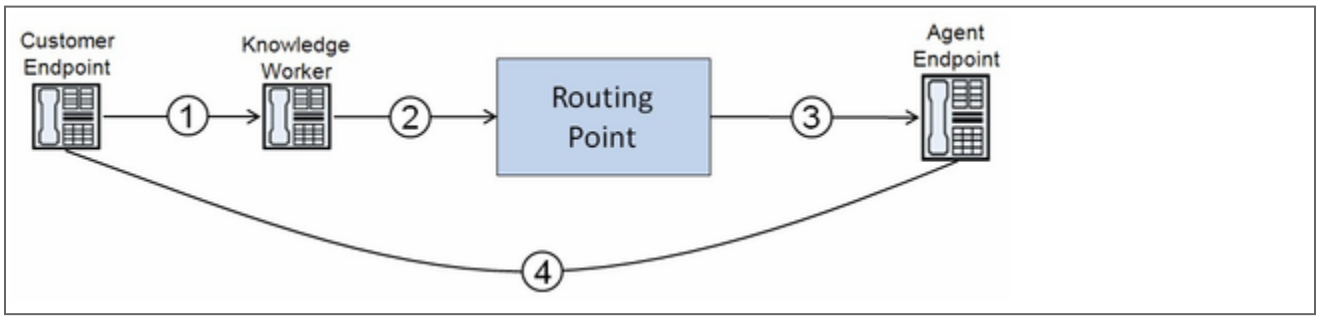
- The routing strategy sends or "broadcasts" multiple Preview Notifications simultaneously to a group of Knowledge Workers. The interaction will be routed to the first Knowledge Worker who accepts.

5. Presence monitoring (through integration with Genesys Stat Server and Management Layer) determines which Knowledge Workers are currently available, and this information is made available to the routing strategy.
6. Using the presence information, the routing strategy selects an available Knowledge Worker.
7. Universal Routing Server (URS) sends a Preview Interaction to the selected Knowledge Worker screen pop arrives at the Knowledge Worker's desktop or device, asking if they will accept the interaction.
   - If the Preview is accepted, the customer call is then routed to the Knowledge Worker and a new voice channel between the customer and enterprise expert is created.
   - If the Preview is declined, URS can apply default routing or select another available Knowledge Worker for Preview, depending on the strategy.

Knowledge Worker to Contact Center

In this case, the Knowledge Worker is already involved in a customer call—typically after a successful transfer from contact center to Knowledge Worker earlier in the customer interaction. For whatever reason—to collect more user information, for example, or process a new order—the Knowledge Worker decides it is necessary to transfer the customer back to the contact center.

To do this the Knowledge Worker can use the UC Connector client window in her browser to send the call to an agent in the contact center. Regular Genesys routing is used to select a particular agent—for example, the Knowledge Worker sends the call to a Genesys Routing Point DN, where the strategy selects a particular agent based on skill, group, and so on.



A common call flow for this scenario is as follows:

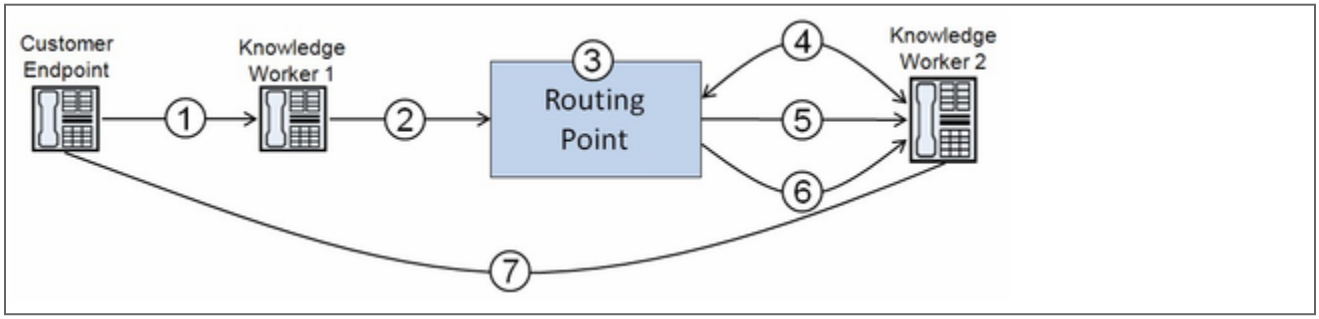
1. A Knowledge Worker is engaged in a voice call with a customer, with no other party or contact center agent involved (in other words, this is not a conference or consultation call with the initiating agent still involved).
2. The Knowledge Worker decides that the call should be sent to the contact center, either back to the original agent who started the customer interaction, or for further processing by the contact center (for example, to an IVR for a customer satisfaction survey).
3. To initiate the transfer, the Knowledge Worker uses the Interaction window to select a configured UC Connector contact point. This contact point is mapped to a `Routing Point` DN in the Genesys

environment.

4. Once the call arrives on the `Routing Point` DN, the routing strategy loaded on the DN is responsible for selecting an available agent, configured for the business rules of the contact center.
5. Connection between customer and selected agent is established.

Knowledge Worker to Knowledge Worker

In this case, a Knowledge Worker already engaged on a customer voice call decides that the interaction should be handled by another Knowledge Worker in the enterprise. The call is routed through the Genesys environment, and the targeted Knowledge Worker is sent an Interaction Preview asking if they can accept the customer call.



A common call flow for this scenario is as follows:

1. A Knowledge Worker is engaged in a voice call with a customer.
2. The Knowledge Worker initiates a transfer or conference to another Knowledge Worker in the enterprise by selecting a contact point in the `Interaction` window. This contact point is mapped to a `Routing Point` DN in the Genesys environment.
3. Once the call arrives on the `Routing Point` DN, the routing strategy loaded on the DN begins the process of selecting an available Knowledge Worker.
4. Presence monitoring determines which Knowledge Workers are currently available, and this information is made available to the routing strategy.
5. Using this presence information, the routing strategy selects an available Knowledge Worker.
6. Universal Routing Server (URS) sends a Preview Interaction to the selected Knowledge Worker—a screen pop arrives at the Knowledge Worker's desktop or device, asking if they will accept the interaction.
   - If the Preview is accepted, the customer call is then transferred to the new Knowledge Worker.
   - If the Preview is declined, URS can apply default routing, or select another available Knowledge Worker for Preview, depending on the strategy.
7. If the Preview is accepted, the customer call is then transferred to the new Knowledge Worker. If the Preview is declined, URS can apply default routing, or select another available Knowledge Worker for Preview, depending on the strategy.

Free Seating

Starting with Release 8.0.301.04, UC Connector supports "free seating", in which users (could be Agents or Knowledge Workers) are not tied to a particular place in the configuration. Instead, the agent and DN are dynamically assigned based on the attribute `AgentID` of the corresponding TLib events:

- `EventRegistered`
- `EventAgentLogin`
- `EventAgentLogout`

Free seating is in addition to the currently supported static agent and DN assignment based on the default `Place`.

With free seating, UC Connector supports a user logging into any `Place` with `Person`/password details, and then using the DN associated with that `Place`. The dynamically-assigned DN will be unassigned when the user logs out from the DN. If the DN is subsequently statically assigned to another user by configuration, the dynamic assignment is canceled.

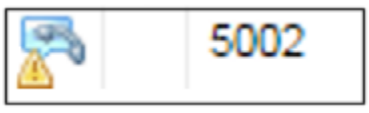
UC Connector can dynamically link a Knowledge Worker and `Place` if the following conditions are met:

1. user-auto-registration = `true`
2. sync-when-logout = `true`
3. UC Connector is connected to Lync / Skype for Business.

Free Seating and Web Interface Login

The free seating feature supports Knowledge Workers logging into a UC Connector web UI. In this case:

- UC Connector only uses the Knowledge Workers default `Place`.
- UC Connector will show all assigned agent DNs.
- Any dynamically-assigned DN disappears after logout.
- Preview and Call Control UIs are available for all assigned DNs.
- A statically-unassigned DN (if previously dynamically assigned to another Knowledge Worker) is marked by yellow triangle:



Statically-Assigned DNs

UC Connector continues its support of static DN assignment to Knowledge Workers (agents) using the default `Place`. UC Connector updates the DN list based on the following events:

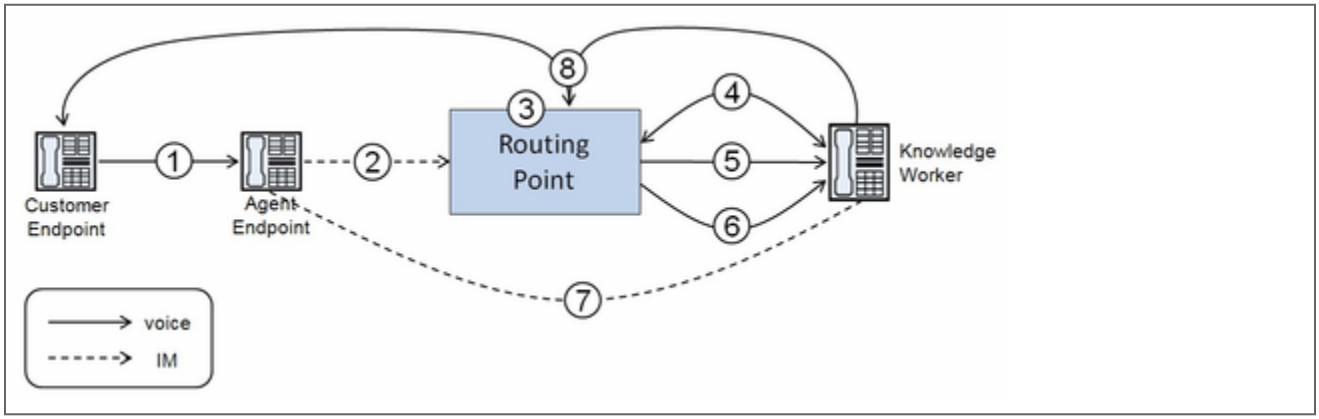
Event	UC Connector Processing
Configuration Processing	On startup, UC Connector reads all agents, `Places` and DNs from the Configuration. An Initial list of the agent DNs is created based on each agent's default `Place`.
Adding a DN to a Place	When a new DN is added to an agent's default `Place`, UC Connector processes the corresponding event from Configuration Server and assigns the new DN to the agent. In the case where another agent is logged into the DN, the DN is marked as "unassigned" for the agent.
Removing a DN from a Place	When an existing DN is removed from an agent's default `Place`, UC Connector processes the corresponding event from Configuration Server and removes the DN from the agent. In the case where the agent is logged into the DN, the DN is marked as "dynamic" and kept assigned to the agent until logout.
Default Place Change	When an agent's default `Place` is changed (or assigned), UC Connector processes the corresponding event from Configuration Server and updates the agent's DN list accordingly. See "Adding DN to a Place" and "Removing DN from a Place" above.
Adding a New Agent Login	When an Agent Login is added to an agent's Login list, UC Connector processes the corresponding event from Configuration Server. If the corresponding Login Code is already being used by the agent, a re-login is required.
Removing an Agent Login	When an Agent Login is removed from an agent's Login list, UC Connector processes the corresponding event from Configuration Server. If the corresponding Login Code is already being used by the agent, the corresponding DN is kept in the "logged in" state.
Login to the Default Place	UC Connector sends `RequestAgentLogin` for the DN under default `Place` in the following cases: • Option sync-when-logout = `true`. • Option presence-sync-mode = `pull`. • Option user-auto-registration = `true`. • The user is logged into the UC Connector Web UI, and the option presence-sync-mode = `pull`. The option agent-initial-state is controlling the process also.

Instant Message Scenarios

Contact center agents can use Instant Messaging to communicate with a Knowledge Worker in the enterprise, either to approach a Knowledge Worker about a particular customer interaction, or to convey information about an existing call through an IM session (text).

Agent Sends IM During a Customer Call

In this scenario, an agent is currently on a call with a customer when the agents starts an Instant Message with a Knowledge Worker. Once the IM with the Knowledge Worker is established, the agent can continue chatting with the Knowledge Worker—for example, to obtain some expert details to pass on to the customer on the call or they can initiate a voice connection (escalate the customer interaction) to the Knowledge Worker by transfer or conference.



A common call flow for this scenario is as follows:

1. An agent is engaged in a voice call with a customer.
2. The agent decides that a Knowledge Worker is needed to satisfy the customer interaction. From their Interaction Workspace, the agent initiates an IM to a designated Knowledge Worker `Routing Point` DN.
3. The routing strategy loaded onto this `Routing Point` DN determines how the particular Knowledge Worker is selected.
4. Presence monitoring (enabled by UC Connector ability to map UC presence status to Genesys agent states) determines which Knowledge Workers are currently available, and this information is made available to the routing strategy.
5. Using the presence information, the routing strategy selects an available Knowledge Worker.
6. Universal Routing Server (URS) sends an Interaction Preview to the selected Knowledge Workers—a screen pop arrives at the Knowledge Worker desktop, asking if they will accept the interaction.
    - If the Preview is accepted, the IM is then routed to the Knowledge Worker, and the IM session between agent and Knowledge Worker begins.

- If the Preview is declined, URS can apply default routing, or select another available Knowledge Worker for Preview, depending on the strategy.

7. The agent can then continue chatting, or the agent can transfer or conference (escalate) the customer call to the Knowledge Worker. In the case of transfers, this can be done through either of the following methods:
8. The call is sent to a `Routing Point` DN with the relevant attached UserData to identify the Knowledge Worker currently handling the IM. Depending on the business rules, the strategy can then present a preview or just route the call directly.
9. With Interaction Workspace, the voice DN of the Knowledge Worker who accepted the IM is presented as a transfer target to the initiating agent. The agent can then transfer the call directly to this Knowledge Worker, without going through a Routing Point.

The IM and the voice call are handled separately.

Presence Monitoring

To determine whether a particular Knowledge Worker is available for a customer interaction, the UC Connector monitors the presence status of the Knowledge Worker on the UC platform. Knowledge Workers are integrated into the Genesys environment as emulated agents, and their presence status in the UC client is mapped to a corresponding "agent status" in the Genesys contact center. Any change in the status in the UC client for a particular Knowledge Worker triggers a corresponding change in agent status, as monitored by Stat Server.

Changing Knowledge Worker Status in Genesys

When the UC Connector receives notification about a change in presence status for a particular Knowledge Worker, it sends a T-Library request to change the status of the corresponding Knowledge Worker "agent" (`RequestAgentLogin`, `RequestAgentReady`, and so on) to the T-Server that manages the Knowledge Worker's Genesys DN. The exact mapping of UC client presence status to Genesys agent status is configurable, but the default mapping is shown in the following table.

UC Presence Status	UC Presence Status
Online	Ready
Offline	LoggedOut
Any other status	NotReady + Reason code

T-Server Support for Emulated Agents

Because the Knowledge Worker must be configured as an emulated agent, the T-Server managing the Knowledge Worker DN must support the emulated agent feature. See T-Server Compatibility.

Presence and Agent-Status Scenarios

Changes in the Knowledge Workers presence in Genesys can come from the Microsoft side, or from the UC Connector (Genesys) side, depending on the scenario. UC Connector integrates both sources of presence for each user. The following table describes some of the scenarios that result in a change of presence for Knowledge Workers.

Action	Resulting Change In Status
Manual change in UC-client.	The Knowledge Worker changes status manually in the Lync or Skype for business client. Whatever change is made is reflected in the Genesys environment, with the emulated agent DN that represents the Knowledge Worker being set to

Action	Resulting Change In Status
	Ready, NotReady, or LoggedOut.
Knowledge Worker accepts a call.	On accepting a routed call from the contact center, the Knowledge Worker's presence status is changed in the UC-client to Do Not Disturb.
Knowledge Worker declines a preview.	If the Knowledge Worker declines the preview interaction, the Knowledge Worker's agent status is changed (by default) to the agent status of NotReady. After a configured NotReady timeout period (5 minutes by default), the Knowledge Worker's agent status is updated to whatever their current presence status is on the Microsoft side. For example, if the Microsoft status is still Online, then the Knowledge Worker is put back into the Ready agent status.
Knowledge Worker is unavailable for contact-center work.	The Knowledge Worker changes status to Do Not Disturb in the UC Connector GUI. This sets their Genesys agent status (by default) to NotReady, but does not otherwise affect their presence status for the enterprise. While the Knowledge Worker is in this Genesys status, regular Microsoft presence status changes are not mapped to changes in agent status. Only once the Knowledge Worker indicates that they are again Available to the Contact Center does regular presence-to-agent status mapping apply.
Automatic change in UC Connector client	Microsoft Lync / Skype for Business can be integrated with the user's calendar on Exchange and so it is aware if the Knowledge Worker enters a meeting or is out of office. When this happens, the user's presence status is reflected in the corresponding agent status in Genesys. Similarly, Lync and Skype for Business clients detects when the user has been idle for a while, and this is also captured by the UC Connector.

Presence Integration with Microsoft Lync and Skype for Business

UC Connector communicates with Microsoft Lync and Skype for Business using MS-PRES (a Microsoft protocol that extends SIP for presence) over TCP-IP and TLS. UC Connector connects to the Lync or Skype for Business Front-End Server, directly or through a third-party load balancer. For more information about supported deployments, see Supported Integrations.

UC Connector registers with the Microsoft server using SIP REGISTER requests, and the Front End server responds with a 200 OK. After registration is completed, UC Connector subscribes to the status of Knowledge Workers using SIP SUBSCRIBE requests, and the server responds with a 200 OK. This occurs only when the Knowledge Worker logs in to the UC Connector tab in Office Communicator.

Whenever a change is made to the Knowledge Worker's presence status in Lync or Skype for Business, the Front End Server sends a BENOTIFY (Best Effort NOTIFY, an MS-PRES message) to UC Connector with the updated status. UC Connector changes the agent status for the Knowledge Worker's corresponding Genesys DN based on mapping rules.

Presence Connector Mode

Starting with Release 8.0.3, UC Connector can be configured to map Genesys agent states to Microsoft presence states, and then push the Microsoft presence state to Microsoft Lync / Skype for Business as it changes in Genesys. This will enable Genesys users (for instance, Contact Center Agents) to change Genesys agent state and have this visible to other Lync / Skype for Business users in the Enterprise. The option presence-sync-mode controls whether UC Connector uses Presence Integration mode, described in the section above, or the Presence Connector mode.

Push On-Call Status from Genesys to the UC Platform

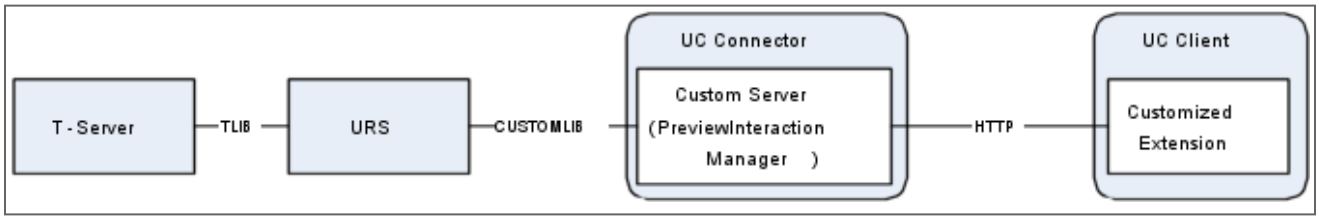
When integrated into Lync or Skype for Business, UC Connector can push the telephony status of a Knowledge Worker to the Microsoft side. If push-status functionality is enabled, when the Knowledge Worker receives a call, UC Connector updates the Knowledge Worker UC status to the default Do Not Disturb. This status setting is configurable (see oncall-status for Lync/Skype for Business).

The Preview Window

UC Connector uses the Custom Server module, a Universal Routing Server (URS) component built into the UC Connector itself, to handle the Preview interaction. By using the Custom Server module, UC Connector processes proprietary CUSTOMLIB protocol messages sent from the routing strategy, in order to initiate the Preview interaction with the third-party UC client.

HTTP is used as the transport method for both supported UC platforms.

The following diagram shows how the embedded Custom Server handles the Preview Interaction between URS and the UC platform.



The Overall Preview Interaction

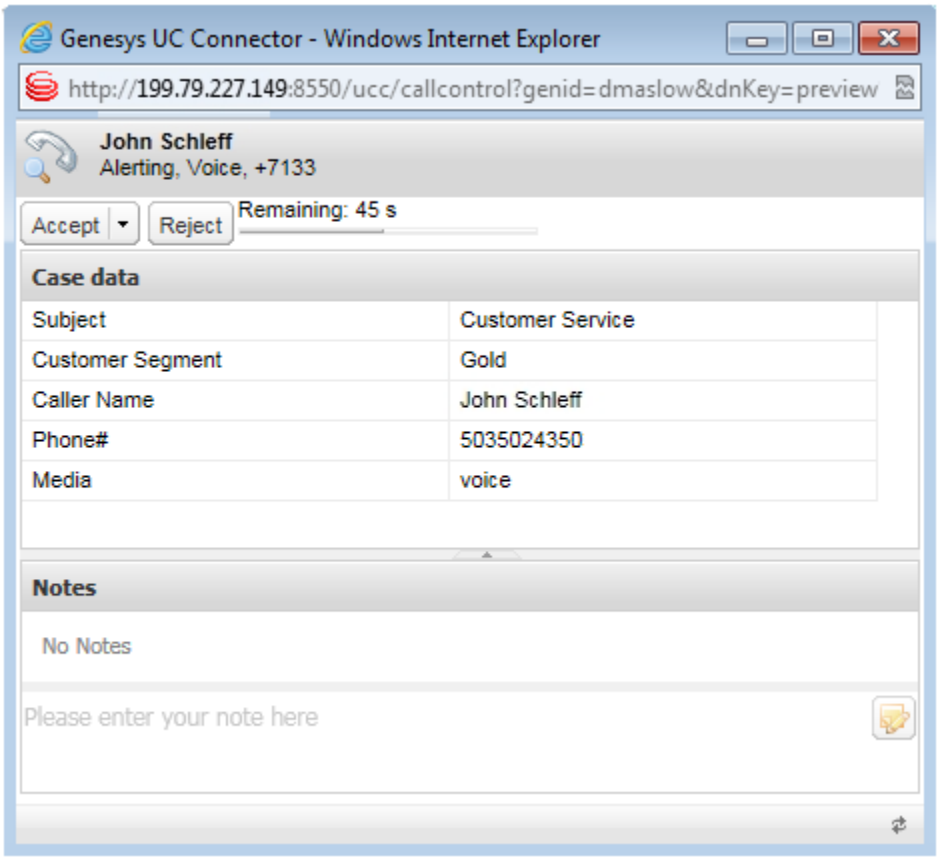
Depending on how the routing strategy is configured, the Preview interaction can be sent to a particular individual Knowledge Worker, or in a round-robin manner (consecutively) to a pool of available Knowledge Worker resources, continuing until one of them accepts the interaction. You can also design the routing strategy to broadcast notifications to several Knowledge Workers in a group, where the interaction is then sent to the first Knowledge Worker that accepts the preview.

The call flow for the overall interaction is as follows:

1. Customer interaction is initiated towards the Knowledge Worker
2. Based on the Knowledge Worker presence status in Genesys (possibly mapped from the corresponding agent status on the Microsoft side), URS selects an available Knowledge Worker and initiates an Interaction Preview with that user—the Preview window appears on their device. If the audio-on-preview option is configured, the specified audio will also play to alert Knowledge Workers who may not be at their desk that an interaction Preview has arrived.
3. A countdown timer appears in the preview window (the length of the timeout period is configurable). The Knowledge Worker must respond before this timer runs out, otherwise the call is returned to URS, where the strategy can select a new Knowledge Worker.
4. On accepting the Preview, an incoming call notification window appears on the Knowledge Worker device (typically, the device is also ringing). If accepted, the voice call between customer and Knowledge Worker is established.

The Preview Notification Window

Shown below is a sample Preview window for an incoming voice call, as it appears on the desktop of a Knowledge Worker. Information about the interaction also appears in the UC Connector GUI in another browser window (not shown).



The Preview window can display any user information available to the routing strategy—in other words, any customer information stored or collected earlier in the interaction, in order to give relevant details of the interaction to the Knowledge Worker. In this case, customer information such as phone number and service level are included.

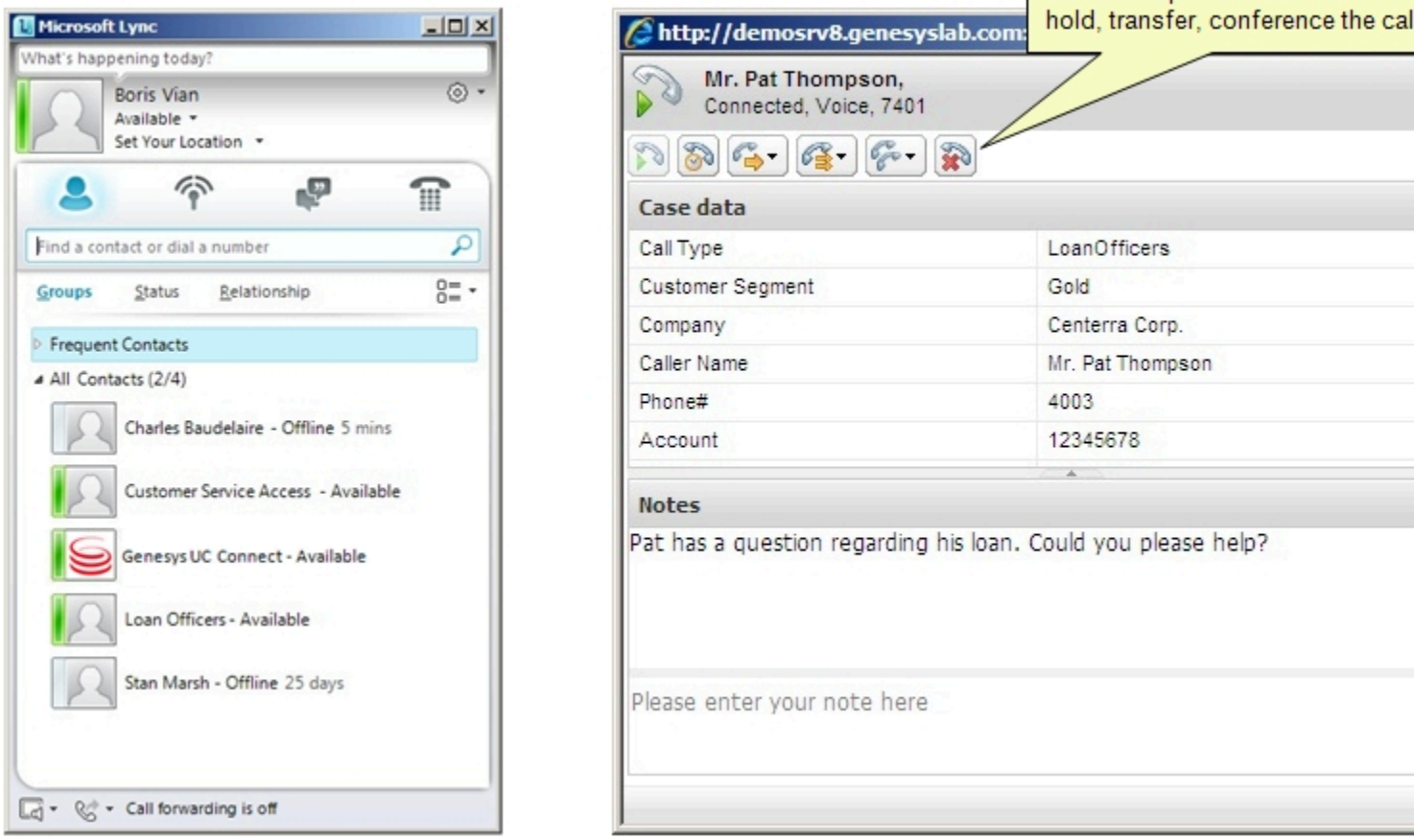
Closing the Preview Window

This Preview window will close if the Knowledge Worker clicks the Accept or Reject buttons. It will also close automatically if the Knowledge Worker fails to respond before the timeout period, or if the interaction is canceled on the agent/customer end.

The Interaction Window

When the interaction is accepted, the Interaction window or IM session interface will appear instead of the Preview window, depending on the kind of interaction requested.

The following diagram shows the Interaction window, which allows the Knowledge Worker to see information about the interaction and perform any call control actions they need (transfer, hold, and so on). Because the window is browser based, it has the same appearance no matter which UC platform is used.



Reporting Events

UC Connector produces and sends reporting-related events for the Interaction Preview mechanism to reporting platforms through the T-Server/SIP Server. To enable reporting, set the enable-preview-reporting option to `true` in the `uc-connector` section of the UC Connector `Application`.

The feature is designed to be used with the ICON Custom Agent State feature, although other reporting platforms can be used. For information on agent states, see both the Genesys Info Mart 8.1 *User's Guide* and *8.1 Deployment Guide*.

The T-Library function `TDistributeUserEvent` is used to report Preview offers and completion results for each Knowledge Worker offered an interaction Preview. UC Connector sends a request to T-Server to distribute the corresponding event to all registered clients. A reporting application then makes relevant detailed records upon receiving these events.

When there are invalid configuration parameters, the default values will be used.

Message Content

All events sent by UC Connector to T-Server will contain the following:

- `ConID`—Connection ID of the current call.
- `ThisDN`—The main DN of the Knowledge Worker.
- `AgentID`—The Knowledge Worker's Agent ID.
- `UserData`—This is the custom state-related information to be sent to T-Server/SIP Server.

The Preview offer will start the custom state identified by the key `UCC_Preview` and the number 3271, which is customizable by the configuration option preview-state-name. The Preview offer event will also record the associated ConnID using the key `UCC_ConnID`, and the Knowledge Worker's user ID using the key `UCC_UserId`, and the Knowledge Worker's login ID using the key `UCC_AgentId`.

The Preview termination event will record the reason for the termination using the key `UCC_Reason`. One of the following reasons will be recorded:

`Accepted`—The user accepts the interaction.

`Rejected`—The user explicitly rejects the interaction by pressing the appropriate button or key.

`Timeout`—The user does nothing while the interaction Preview is open.

Taken—Another user accepts the interaction. This can only occur in broadcast mode.

`Error`—An error occurred while showing the interaction Preview window.

`Cancel`—The interaction was abandoned by the original caller.

> **Warning**
> The keys `UCC_ConnId`, `UCC_UserId`, `UCC_AgentId`, and `UCC_Reason` are configurable with the option presence-gateway-mode.

Preview offer event User Data

```
UCC_Preview = "+"
UCC_ConnId = "3271, <ConnID(hex number)>"
UCC_AgentId = "3271, <agent_id>"
UCC_UserId = "3271, <user_id>"
```

Preview termination event User Data

```
UCC_Reason = "3271, {Accepted|Rejected|...}"
UCC_Preview = "-"
```

Lync / Skype for Business Integration

> **Tip**
> An integration overview is presented below. For detailed integration information, see *UC Connector 8.0.3 Lync Integration Deployment Guide*.

In integration with Microsoft Lync/Skype for Business, Knowledge Workers see the UC Connector user interface on a browser window, or possibly in a Lync / Skype for Business conversation extension window. Both these windows are web-based and allow the Knowledge Worker to control their UC Connector presence status, to accept or reject interactions in the Preview window, and to control ongoing chat or voice calls in the Interaction window.

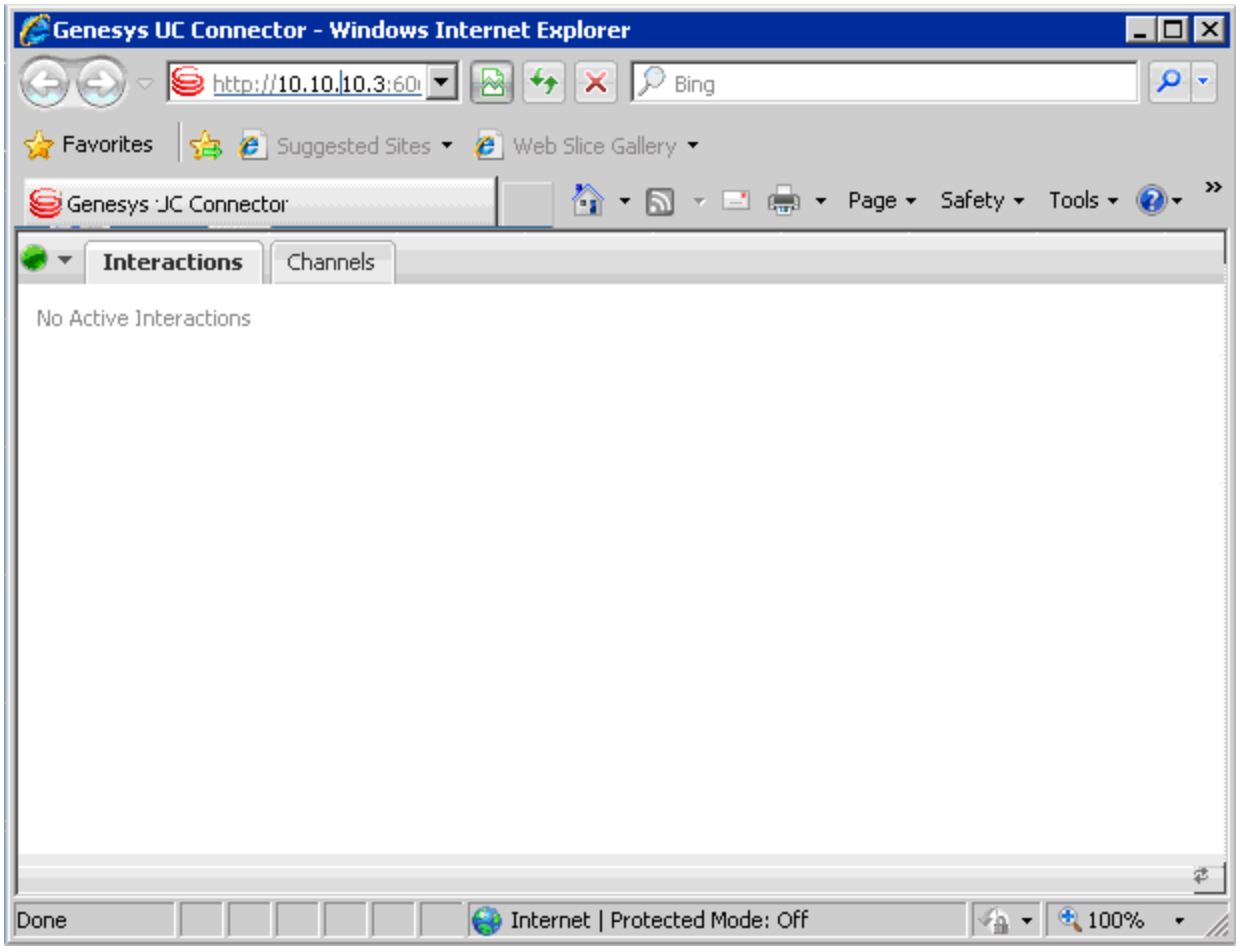
There are two ways for the Knowledge Worker to access the UC Connector from the Lync / Skype for Business client:

- The Knowledge Worker manually opens the UC Connector web client from the `Tools` menu.
- The Knowledge Worker accepts a Lync / Skype for Business preview interaction from UC Connector, which opens the extension window.

> **Warning**
> If the Knowledge Worker uses Safari as their default browser, they must keep a browser window open in order to receive previews for incoming interactions. If the user closes the browser, alerts will not be received.

The Genesys UC Connector Web Client

In the Lync / Skype for Business client, under `Tools`, select `Genesys UC Connector` from the drop-down menu to open the UC Connector web client.



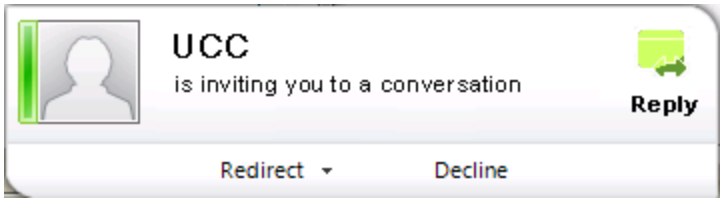
Using the drop-down menu, the Knowledge Worker can change their UC Connector presence status. This status does not change if the Knowledge Worker then closes the web client.

While this window is open, an incoming interaction arrives as a regular UC Connector-based Preview notification.

If this window is closed, an incoming interaction will arrive as a Lync / Skype for Business Preview invitation. If this invitation is accepted, the UC Connector GUI opens in the conversation extension window, followed by the UC Connector Preview notification. For more information, see How It Works.

The Lync / Skype for Business Preview Invitation

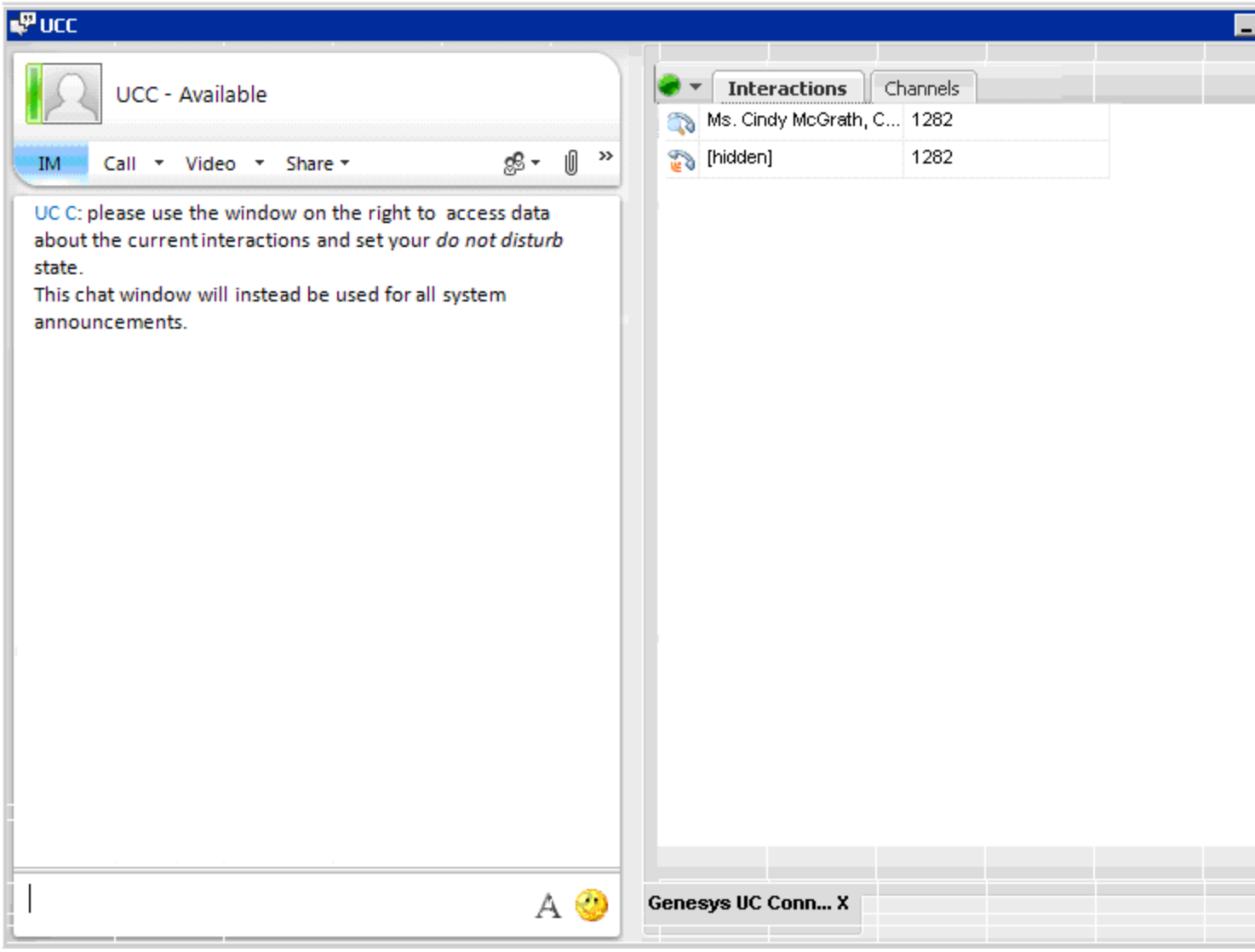
If the extension window or the UC Connector web client (see previous section) is not already open, a new interaction will arrive at the Knowledge Worker's desktop using a native Lync / Skype for Business chat request.



If the Knowledge Worker accepts this invitation, the extension window opens.

The Conversation Extension Window

This window shows both the UC Connector tab as well as a Lync / Skype for Business chat window used by the system to provide a configurable welcome message to the Knowledge Worker. This window uses the `invite-message` option in the Microsoft-OCS section, which specifies the text that will be presented to the Knowledge Worker in the conversation extension window when an interaction arrives. The example below shows the extension window upon accepting an interaction.



After the interaction is finished, the UC Connector tab remains open in the extension window. If the Knowledge Worker keeps this window open, any new interaction will arrive as a separate web-based Preview window. If the extension window is closed, new interactions will arrive once again as a native Lync / Skype for Business chat request.

Customized Help

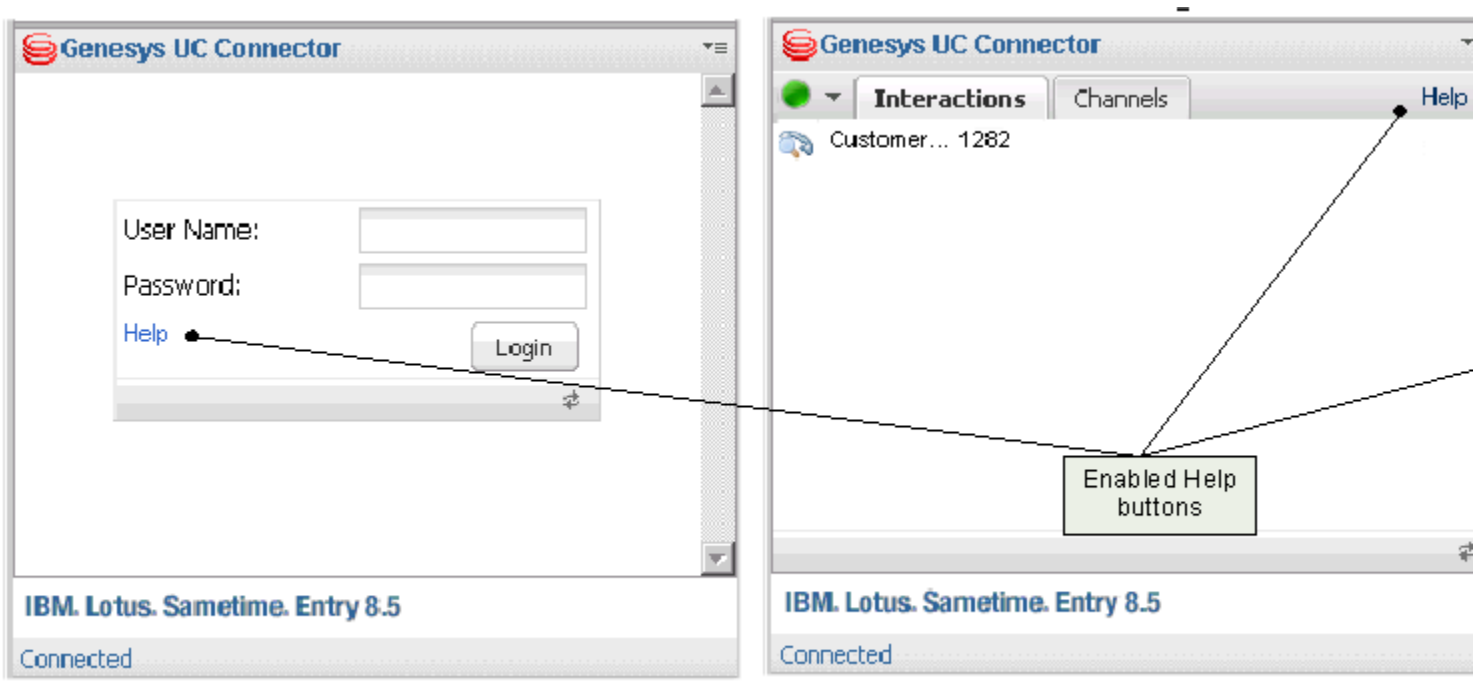
UC Connector lets you create customized Help files that Knowledge Workers can access from the web-based user interface. If enabled on a particular window, a clickable Help button appears, providing a link to a `.html` help file that opens in the Knowledge Worker's browser. A sample `.html` help file is included on the product CD, under `Documentation/Help`. You can use this file, or create one of your own, stored at a network-accessible location.

You can specify a different help file for each of the following windows in the user interface:

- Login screen (`help-login-url`)
- Interaction window (`help-interaction-url`)
- Preview and Interaction windows (`help-callcontrol-url`, the same option is used for both windows)

For detailed procedures, see Customizing the Help Button.

The following figures show some sample screens where the Knowledge Worker can access an enabled `Help` button.



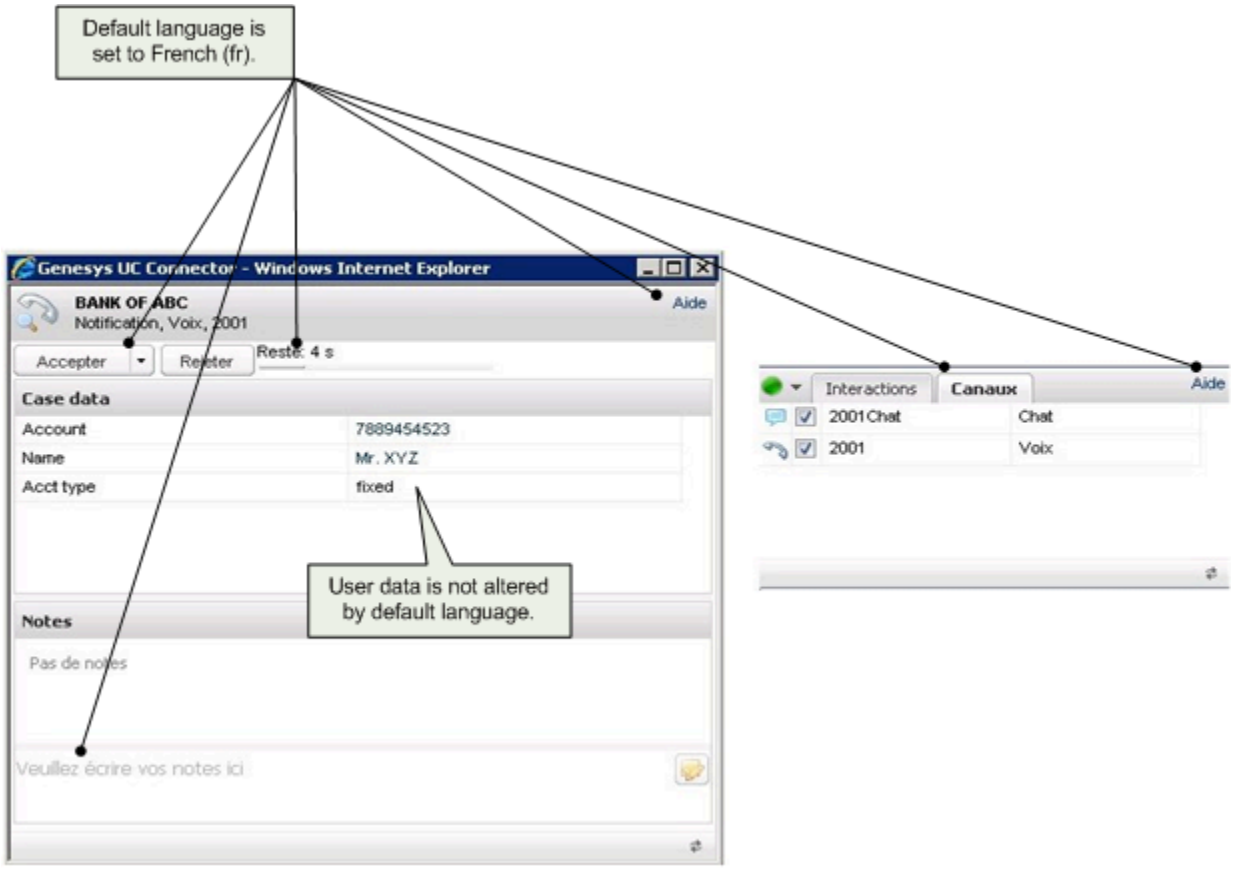
Login Window Interaction Window

Customized Languages

UC Connector allows you to change the language used in the client interface. By default, UC Connector uses English for the various tools and labels in the interface. Using the configuration option `locale`, you can change the default language to one of several supported languages.

For configuration details, see Changing the Default Language.

The following figure shows a sample Interaction window localized for the French (fr) language.



List of Supported Languages

The following table lists the languages supported by UC Connector, as well as the two-character country codes used to specify the language in the configuration.

Supported Languages	Language Codes
English	en

Supported Languages	Language Codes
French	fr
German	de
Italian	it
Russian	ru
Spanish (Latin America)	es

When Other Languages May Be Used

If `locale` option is set to `default`, then UC Connector uses the language of the local operating system provided it is included in the list of supported languages. If UC Connector integrates with a web browser that uses a preferred language setting, then the web browser's preferred language takes precedence over the internal UC Connector setting, again, only if the web browser language is included in the list of supported UC Connector localizations.

If the `locale` option is not configured at all, then English is used as the absolute default.

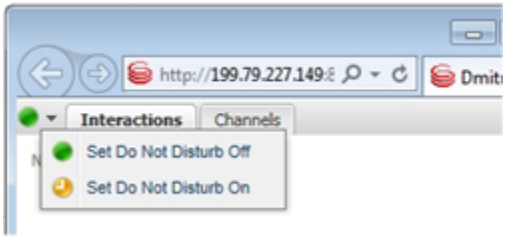
Customized Knowledge Worker States

UC Connector allows you to customize the states available to knowledge workers in the UC Connector web client drop-down menu. The "agent states" and the corresponding text displayed in the menu can be customized by editing application resources. This custom state functionality is only supported in the standalone deployment mode. See standalone mode. If UC Connector is connected to an external presences source, such as Microsoft Lync, the presence updates from Lync will override the state set in T-Server.

Each customizable state is characterized by a unique combination of the major "agent state" (Ready or Not Ready), the agent mode, and a reason code. The customized states can be made available for display in the UC Connector web client drop-down menu. The customized states can also be used to reflect the current user's state in the `Channels` tab.

Before release 8.0.300, UC Connector included two fixed states that mapped to the Genesys states Agent Not Ready and Ready (without an agent mode or reason code):

- Do Not Disturb On
- Do Not Disturb Off.



In release 8.0.300, the UC Connector application is installed with these two states as an example in the XML resource file. The states are also built in the application to enable default handling when the resources are corrupted.

The editable XML resource file contains the state definitions and their corresponding visual representation in the UC Connector web client menu, such as text strings, icons, and translations. The provided example XML can be edited by the system administrator or integrator as required.

The XML file can be provided on the local file system or through HTTP(s) service. The HTTP(s) service can be convenient for managing multiple instances of UC Connector for redundancy or load sharing. The instance of Jetty web server packed with UC Connector can also be used to service this file and its related resources, such as localization files, icons, and graphics. See Knowledge Worker in Customing UCC Connector for details on the setup procedures.

Defining Knowledge Worker States

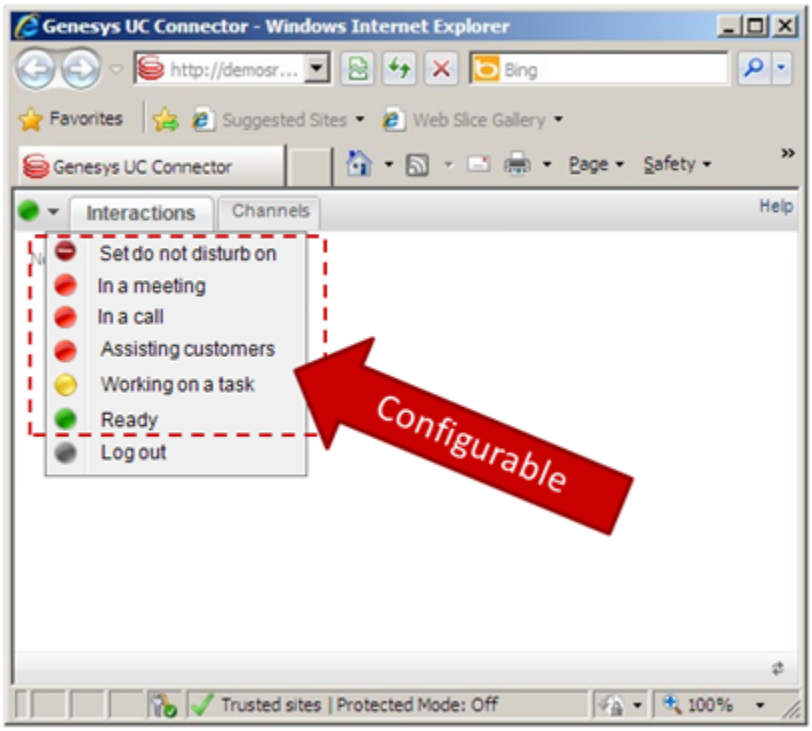
Each Genesys agent state in the XML file is composed of a unique combination of the following:

- Main state—Ready or Not Ready. This is the "agent state" that will show up in real-time or historical reporting.
- Agent mode—Manual, After Call Work, Legal Guard, Auxiliary Work, Walk Away, and Nodisconnect
- Reason code string—Afree-form text string that UC Connector attaches as a Reason or Extension attribute with a user-defined key name to the corresponding agent state change request sent to T-Server. The key name `ReasonCode` is used by default, but the name can be customized.

The agent mode and the reason code are optional.

UC Connector uses the definitions of the states to display the current user state in the agent status indicator on the main panel and the corresponding channel state in the `Channels` tab of the UC Connector web client. The appearance of the user state is defined by the icon and the status string associated with the corresponding state definition.

To make custom state recognizable in the UC Connector web client, you must provide distinct relevant icons. The system integrator is responsible for providing the corresponding artwork.



The text representation of the custom state can be defined in several languages simultaneously. UC Connector transmits localized resources to the user's browser to be selected based on local preferences.

When T-Server reports the agent state event, UC Connector matches the event against a set of defined agent states. When the reported state is matched, UC Connector updates the corresponding status indicators in the main panel and `Channels` tab of the UC Connector web client.

To display a non-matching agent state, UC Connector uses one of the predefined states that have no matching elements defined. For example, UC Connector receives an event with the following:

- Agent state: Not Ready

- Agent mode: After Call Work
- Reason code: 101

If UC Connector cannot match the reason code, it might use a definition for the Not Ready state with an After Call mode and no reason defined. If it cannot match the reason code and the state, it might use a definition for a plain Not Ready state without a mode.

UC Connector uses built-in plain Ready, Not Ready (previously called "DND on" and "DND off"), and DND state definitions for states that cannot be matched against the XML file.

The system integrator is responsible for defining all the states that must be represented in the UC Connector web client.

> **Warning**
> Some states, such as Not Ready with a work mode Legal Guard, cannot be requested because they are controlled exclusively by T-Server or the PBX. Other states, such as Not Ready with a work mode After Call Work, might not be compatible with a particular T-Server or PBX. UC Connector does not validate the state definition. If the state is defined as an available web client menu item, UC Connector attempts to use it as defined, but the operation may fail if the target state is not supported by the T-Server. The states that are controlled by T-Server and cannot be executed as an agent command can still be defined in the XML document so that the corresponding status can be displayed visually.

Multiple Channels

Users may have multiple channels provisioned in their place, but the UC Connector web client only has one combined agent state indicator.

When a state change command is issued from the menu, UC Connector attempts to apply the same agent state request to all channels. If all the resulting channel states map to the same defined state, UC Connector displays and icon corresponding to that state. If the resulting channel states map to different custom states, UC Connector updates the main agent status indicator in the web client with one of the following predefined states:

`partial-ready`—at least one of the channels is in the "ready" state

`not-ready`—at least one channel is in the "logged in" state

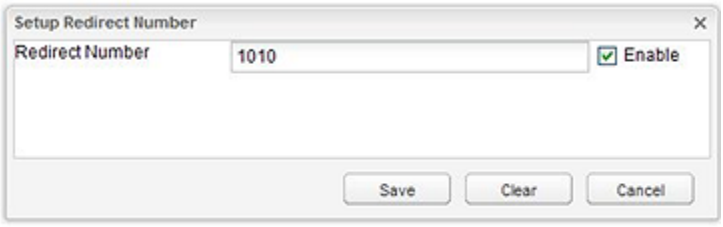
`logout`—all channels are logged out

> **Warning**
> The indicator for an individual channel reflects the state of the channel only if the icon

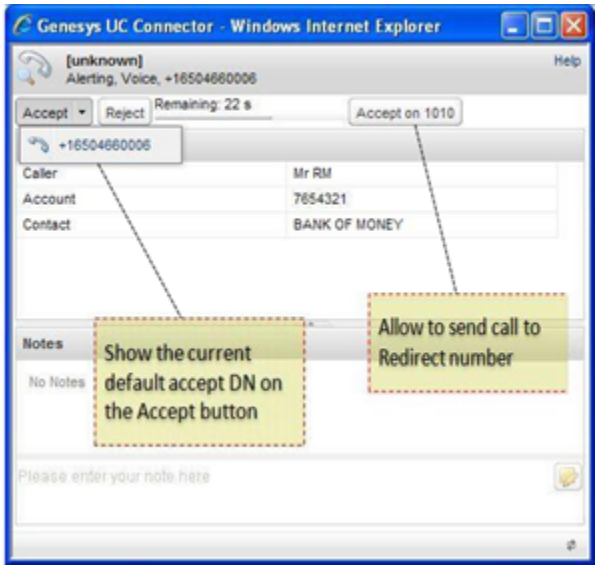
> for the badge is supplied.

External Number Redirect

A Knowledge Worker or an Administrator can enable an external redirect number, which allows Knowledge Workers to accept preview calls at the specified number. When this features is enabled, the UC Connector GUI has an additional control to set up the external number to use. This menu option will only appear if the redirect-setup-enabled configuration option is set to `true`. Clicking on the Setup option opens an additional window used to enter the phone number as shown below.



It is also possible for an Administrator to enable and set the redirect number for a person through Genesys Administrator. See Enabling a Redirect Number on the Customizing UC Connector page. If an external number has been configured, the preview window has a button to accept the incoming call on that number.



If the user clicks the external number button, Universal Routing Server (URS) routes the call to the specified redirect number. When the preview is accepted on an external number, the window is modified to indicate the call is on an external number. If provisioned in the presence definition XML document (see “How It Works—Customized Knowledge Worker States), UC Connector sets the user to the preview-redirect auto-state after the redirect. The default target state after the redirect is dnd. Remote call control is not possible at this point, and call notes (user data) cannot be edited or added. When the user is ready to take the next call, they must first close the preview window and set the user status to `ready`.

> **Warning**
> The redirect number is not validated against premium rate, international numbers and so on. It is the responsibility of the Administrator and the telephony platform to validate if the user has permissions to redirect to the requested number.

Configuring an External Number

To configure an external number for preview, the user must select the `Setup` menu option.

This menu option will only appear if the redirect-setup-enabled configuration option is set to `true`. For configuration details for this feature, see Redirect Number on the Customizing UC Connector page.

Selecting the `Setup` menu option opens the Setup Redirect Number window, where the user can set or change the redirect number.

It is possible for an Administrator to enable and set the redirect number for a person through Genesys Administrator. See Redirect Number on the Customizing UC Connector page.

> **Warning**
> The redirect number is not validated against premium rate, international numbers and

> so on. It is the responsibility of the Administrator and the telephony platform to validate if the user has permissions to redirect to the requested number.

Supported Integrations

The UC Connector supports Genesys contact center integrations with several versions of the Microsoft Unified Communications platform. UC Connector supports Lync 2010, Lync 2013, and Skype for Business (2015). This section describes how UC Connector can be deployed to integrate with different configurations of Lync / Skype for Business. This section also describes using Workspace Desktop Edition to present the agent side of the customer interaction.

Note: The references to third-party documentation in this document, including any URL or other web references, are subject to change without notice. They are included for your convenience.

Functional Support

UC Connector supports the same features in integration with all versions of the Microsoft UC platform, be it Lync 2010, Lync 2013 or Skype for Business 2015.

The main supported functions are explained in this page.

- **Presence monitoring:** UC Connector uses the Microsoft proprietary MS-PRES protocol (augmented SIP/SIMPLE) to subscribe to user presence from the Lync / Skype for Business Front End Server. This allows the users' presence to be collected by UC Connector and mapped to Genesys presence.
- **Presence push:** UC Connector acts as a source of presence for its users, allowing to push useful information to Lync / Skype for Business. This way, UC Connector can push the "in a call" status to Microsoft when a user starts a call routed by Genesys, if so configured.
- **IM through SIP Server-FE Server integration:** SIP Server can act as an IM endpoint for Microsoft Lync / Skype for Business, allowing both IM conversations from agents to knowledge workers (whole presence is seen by agents through UC Connector) and incoming IM sessions to a route point for help desk use cases from Lync / Skype for Business to Genesys agents.
- **Interaction preview mechanism:** UC Connector pushes a pop-up browser window to users when they are targeted by an interaction preview. The browser window contains configurable information about the incoming interaction, and can be accepted or rejected by the knowledge worker.
- **Launching UC Connector if user is not logged in:** UC Connector can send a special IM session to Lync / Skype for Business formatted in a way to open a conversation extension window on the Microsoft client, pointing a browser to the UC Connector main web page. This is useful if a knowledge worker is presented with an interaction preview, but she doesn't have the UC Connector window open in her browser.
- **Secure connections (TLS):** UC Connector supports TLS in integration with Microsoft Lync / Skype for Business.

Lync / Skype for Business

> **Tip**
> An integration overview is presented below. For detailed integration information, see *UCC 8.0.3 Lync Integration Deployment Guide*.

The architecture of UC Connector integration with Lync or Skype for Business does not change with the Microsoft versions; however, it changes depending on the configuration of the Microsoft platform. In all cases, UC Connector links the Genesys environment and the Microsoft solution in the enterprise. For presence, communication between UC Connector and Lync is through MS-PRES. For a complete description of MS-PRES see http://msdn.microsoft.com/en-us/library/cc431501%28v=office.12%29.aspx

The UC Connector does not play an active role in instant messaging communication with Lync / Skype for Business. IM sessions are handled between Lync / Skype for Business and SIP Server exclusively, over SIP.

However, for integration with the Microsoft Lync / Skype for Business Client, the UC Connector is able to send a special IM message that starts a context-sensitive IM conversation in the Lync or Skype for Business client. The special IM prompts the Lync or Skype for Business client to open the conversation extension window, in which a browser window points to the UC Connector GUI. This is done only if the UC Connector GUI is not already open on the target user's desktop.

Supported deployments with Microsoft Lync / Skype for Business include:

- Deployment with Microsoft Lync Skype for Business Standard Edition
- Deployment with Microsoft Lync Skype for Business Enterprise Edition
- Deployment with Microsoft Lync / Skype for Business Enterprise via Edge Server

For information on the above deployments, see the *UCC 8.0.3 Lync Integration Deployment Guide*.

Workspace Desktop Edition

For the purposes of this guide, the agent side of the customer interaction is presented using Workspace Desktop Edition 8.5. Workspace Desktop Edition provides the functionality required to give agents access to experts outside the contact center. This functionality includes:

- Showing a group of Knowledge Workers in the Workspace Desktop Edition Buddy List (the group will appear as a regular agent group).
- Showing an individual Knowledge Worker in the Workspace Desktop Edition Buddy List (the KW will appear as a regular agent).

For more information about using the Buddy List, consult the *Workspace Desktop Edition 8.5 Deployment Guide* and the *Workspace Desktop Edition 8.5 User's Guide*. If you are using previous versions of Agent Desktop, or a customized agent client using the Genesys SDK, some modifications may be required to achieve the above functionality. Consult the Workspace Desktop Deployment Guide for your version of the product, or the Genesys SDK used to create your custom agent client.

Next, integrate UC Connector with Lync / Skype for Business, if part of the environment.

Deployment Task Table

The following table summarizes the deployment tasks that are required to deploy the UC Connector into the Genesys environment, as well as how to integrate the deployment with the Microsoft Unified Communications platform (Lync or Skype for Business) on the enterprise side:

Complete the following tasks to deploy and integrate the UC Connector solution.

Objective	Actions
1. Complete prerequisites.	• Configuring the Baseline Genesys Environment • Install Java • Host Requirements • Deploy the Third-party UC Platform • Configure the Microsoft UC Platform to work with UC Connector
2. Deploy the UC Connector.	• Deployment Procedures
3. Configure the Knowledge Worker.	• Configure Knowledge Worker DNs, Logins, Places, Persons.
4. Integrate with the agent's desktop.	• Integrate with Workspace Desktop Edition.
5. Integrate with Genesys Routing	• Create Custom Server Application, configure routing from contact center, configure contact point for Knowledge Worker.
6. (optional) Enable Instant Messaging (Genesys IM Integration)	• Verify the Genesys IM solution. • Configure the Knowledge Worker DN.
7. (optional) Enable Instant Messaging (SIP - Lync / Skype for Business Integration)	• See the *UC Connector 8.0.3 Lync Integration Deployment Guide*, SIP Server Configuration.
8. (required for Lync / Skype for Business) Enable Secure Communication	• See Enabling Secure Communications.

Baseline Environment

Before you begin the UC Connector integration, all baseline components must be installed and configured. For Genesys components, consult the product *Deployment Guides* as outlined in the section below. For the enterprise UC solution-related components, consult the third-party product documentation described in the section below.

This chapter contains the following sections:

> **Important**
> The references to Microsoft documentation in this section, including any URL or other web references, are subject to change without notice. They are included for your convenience.

Configuring the Baseline Genesys Environment

The following table lists the prerequisite Genesys components, their respective Deployment Guides, as well as key actions that you must complete before starting the integration procedures.

Component	Key Actions	Documentation
Management Framework 7.5+	A centralized Genesys Management Framework, with all required components, must be installed.	*Framework 8.1 Deployment Guide*
Genesys Administrator	After installing Genesys Administrator, login to the tool: 1. Open a web browser and enter the following URL: `http://<computer_name>/wcm/Default.aspx` 2. Enter the following information:	*Genesys Administrator 8.1 Deployment Guide*

Component	Key Actions	Documentation
	• User name • User password • Application (name of the Configuration Server in database) • Host name (Configuration Server host) • Port (Configuration Server port) 3. Click `Log in` Tip Genesys Administrator or Configuration Manager can be used to configure UC Connect.	
Configuration Manager	On a computer installed with Configuration Manager, login to the tool: 1. `Start > Programs > Genesys Solutions > Framework > Configuration Manager > Start Configuration Manager` 2. Enter the following information: • User name • User password • Application (name of Configuration Server in database) • Host name (Configuration Server host) • Port (Configuration Server port) 3. Click 0k. Tip Genesys Administrator or Configuration Manager can be used to configure UC Connector.	*Framework 8.1 Deployment Guide*
T-Server	Required for integration with various switches or PBXs.	See the Deployment Guide for your respective T-Server.

Component	Key Actions	Documentation
	Important The T-Server and associated switch MUST support emulated-agent functionality for integration with UC Connector.	For more information on which T-Servers support emulated-agent functionality, see T-Server Compatibility with UC Connector.
SIP Server version 8.0.300.00 or later	Required for the following deployments: • Instant Messaging functionality with Microsoft Lync / Skype for Business	*Framework 8.1 SIP Server Deployment Guide*
Universal Routing Server	Required for routing to agents and for handling the contact center-to-Knowledge Worker interaction. Required connections: • Message Server • SIP Server `Application` object (if included) • Any other T-Server Application that is included your deployment. • Stat Server • Custom Server	*Universal Routing 8.1 Deployment Guide* and *Universal Routing 8.1 Reference Manual*
Interaction Routing Designer	Required for building the URS routing strategies that control the interaction between the contact center and Knowledge Workers. Note: IRD is the only Genesys tool that supports UC Connector routing strategies development.	*Universal Routing 8.1 Business Process User's Guide* and *Universal Routing 8.1 Interaction Routing Designer Help*
Workspace Desktop Edition 8.1+	Starting with release 8.5.0, Genesys Interaction Workspace is known as Genesys Workspace Desktop Edition. Required for a desktop workspace that the contact center agent uses to initiate interactions with the Knowledge Worker. For Workspace Desktop Edition 8.1 and above, required functionality is included in the default deployment. For other Desktops, some additional configuration may be required. See Integrating with Workspace Desktop Edition.	*Interaction Workspace 8.1 Deployment Guide*
Stat Server 7.6+	Required for monitoring the	*Framework 8.1 Stat Server*

Component	Key Actions	Documentation
	availability of agents and emulated agents (Knowledge Workers) targeted in the routing strategies. Required connections: • Message Server • SIP Server `Application` object (or T-Server)	*Deployment Guide*

Installing Java

UC Connector requires that you install a Java Software Development Kit (JDK). UC Connector support JDK 8.0 (release 1.8.0+).

The following table provides basic information about installing the JDK on the host Windows Server.

Objective	Key Actions
1. Download the JDK version 8.0.	Download the JDK 8.0 to your host computer (see Operating System UC Connector Host section below). At publication of this document, JDK 8.0 is available for download here: http://www.java.com/en/download/
2. Configure Environment Variables.	Make sure the `JAVA_HOME` environment variable points to the directory where you installed the JDK, for example: `c:\jdk1.8.0`

Host Requirements

Operating System—UC Connector Host

For installation of the UC Connector application on the host computer, UC Connector 8.0 currently supports the following operating systems:

- Windows Server 2008, 32-bit and 64-bit
- Windows Server 2008 R2, 64-bit
- Windows Server 2012, 64-bit
- Windows Server 2012 R2, 64-bit

Web Browser—Knowledge Worker Host

UC Connector 8.0 integrates with the web browser on the host Knowledge Worker computer. UC Connector currently supports integration with the following web browsers:

- Windows Internet Explorer 8.0, 9.0, 11.0
- Firefox 3.5 and higher – last version tested at the time of the writing: 45
- Google Chrome

Deploying the Microsoft UC Platform

The installation and deployment of the Microsoft UC platform that can integrate with UC Connector is beyond the scope of this document. If you are performing an end-to-end deployment (the UC platform is not already installed), the following table details where you can go for more information about setting up the UC platform.

Task	Description	Details
Deploying the Server	The Microsoft Lync / Skype for Business Servers must be installed and configured according to the required topology. This may include: • Load balancers for handling traffic. • Edge Servers for authorizing Genesys contact center access to the enterprise UC platform.	For details, consult the following Microsoft Lync / Skype for Business Server documentation: http://technet.microsoft.com/en-ca/library/gg398616.aspx
Deploying the Client	Microsoft Lync / Skype for Business Client must be installed on the Knowledge Worker device(s). In order to enable launching the UC Connector GUI from the Lync / Skype for Business Client in different settings, there are some registry keys that must be set.	For details, see the Modifying the Registry for Microsoft Lync.
Secured Mode	For Microsoft Lync / Skype for Business Server, secured communication is mandatory.	For details see Enabling TLS/ Kerberos Secure Communication.
Supported Architectures		For information about supported Lync / Skype for Business architectures, see Lync / Skype for Business.

Configuring the Microsoft UC Platform to work with UC Connector

The configuration of the Microsoft UC platform (Lync or Skype for Business) required for a UC Connector integration is detailed in the *UC Connector 8.0.3 Lync Integration Deployment Guide*.

Deployment Overview

This chapter summarizes how to deploy the UC Connector, and how to integrate the UC Connector into the rest of the Genesys environment. Detailed procedures are given in the next chapter.

- Deploying the UC Connector
- Configuring the Knowledge Worker
- Integrating with Workspace Desktop Edition
- Integrating with Genesys Routing
- Enabling Instant Messaging
- Enabling Secure Communication
- Customizing UC Connector

Also see Deployment Modes.

Deploying the UC Connector

The following table provides an overview of the main steps that you must complete in order to deploy the UC Connector into the Genesys environment.

Objective	Actions
1. Verify the baseline Genesys configuration.	If the UC Connector is deployed together with a Genesys Contact Center installation, check that the following prerequisite components are deployed: • Management Framework (LCA, Configuration Server, Message Server) • Universal Routing Server • Stat Server • T-Server (it could be SIP Server as well) • SIP Server (for Instant Messaging scenarios) • Workspace Desktop Edition (optional. Other agent desktop clients can also be used) If the UC Connector is used without a Contact Center, install the following components that come with the UC Connector bundle. The components should be installed within the same subnet. Refer to the respective deployment guides for installation information. • Management Framework (LCA, Configuration Server, Message Server) • Universal Routing Server • Stat Server • The appropriate T-Server for the deployed PBX • SIP Server (for Instant Messaging scenarios) For more information, see Configuring the Baseline Genesys Environment.
2. Create Host.	Create a Host object for the computer on which you will later install the UC Connector on (if one has not been created already). **Supported Operating Systems:** • Windows Server 2008 32/64 bit • Windows Server 2008 R2 64 bit • Windows Server 2012 64-bit • Windows Server 2012 R2 64-bit

	For more information about creating hosts, see the *Framework 8.1 Deployment Guide*.
3. Import the application template.	1. Go to `Environment` > right-click `Application Templates` > `Import Application Template` 2. Select the `UC_Connector_800.apd` template available on the product CD. For more information, see *Framework 8.1 Deployment Guide*.
4. Create the UC Connector Application object.	1. Create the UC Connector object from the imported `.apd` template. 2. Add a SIP listening port—typically `5060` (required for integration with Lync Server only). 3. Add connections to: • Custom Server (see Integrating with Genesys Routing). • T-Server • Stat Server For more detailed instructions, see Creating the UC Connector Application Object.
5. Install the UC Connector.	On the host computer, launch the `setup.exe` file available on the product CD. The installation path must *not* include any spaces. Genesys recommends installing to the default path: `C:\GCTI\UCConnector` **Key Action** • Take note of the HTTP port that you enter in the installation wizard. You will have to specify this port in web page customization later in the deployment. For more detailed instructions see, Installing the UC Connector Server on the Host.
6. Configure the UC Connector section.	Use the options in the UC-Connector section to enable notes, customize interaction windows, configure timeouts, and other features. None of these options are mandatory (default values are acceptable; some features may not be enabled). For a detailed list of UC-Connector options, see UCC Application Options. DN/Switch-level settings (configured on the KW Person object) take precedence.

7. Configure the Log section.	In the Log section, configure the log-related options as you would for any other Genesys application. There is one UC Connector-specific log option: • `internal` For more information, see the *Framework 8.5 Deployment Guide*.
8. Configure the Lync / Skype for Business section.	Configure the following section: • `Microsoft-OCS` This configures both Lync and Skype for Business integration. For details, see UCC Application Options. DN/Switch-level settings (configured on the KW Person object) take precedence.
Optional Customization	• Edit Help Buttons—You can enable a help button on various UC Connector screens, with links to a customized help file. For details, see Help Buttons in Customizing UC Connector. • Set Default Language—You can set the default language for the UC Connector user interface. For details, see Default Language in Customizing UC Connector. • Enable Automatic Log-in—To automatically log in all Knowledge Workers on UC Connector start up: • In the `uc-connector` section of the UC Connector Application object, set the option user-auto-registration to `true`. This is required for integrations with Microsoft Lync Server. • Enable Logout Menu—To display the logout menu in the GUI, in the `uc-connector` section of the UC Connector Application object, set the option enable-logout-menu to `true`. • Enable Audio on Preview or Ringing—You can enable an audio file to play when the Preview or Ringing pop-up window is displayed. For details, see Audio in Customizing UC Connector. • Configure Hotkeys for Interaction Preview—You can set specific keys to accept or reject a call when the Preview window is displayed. For details, see Hot Keys in Customizing UC Connector. • Customize Agent States—You can define custom presence states for the UC Connector Web

	Client with an XML resource file. For details, see Knowledge Worker in Customizing UC Connector. • Enable Number Redirect—You can allow agents to change their own external redirect number and accept preview calls on that number. For details, see Redirect Number in Customizing UC Connector.

Configuring the Knowledge Worker

The Knowledge Worker must be configured on both the Genesys side and on the Microsoft side, if integrating with Lync / Skype for Business.

On the Genesys side, you configure a Person object for each Knowledge Worker, so that the Knowledge Worker is treated by the contact center as an agent, with access to all business rules, routing, and reporting available to a regular agent. You must also create an Extension DN object for each Knowledge Worker who is to be integrated into the contact center.

About Emulated Agent Functionality

For integrations with T-Server, you must configure the Knowledge Workers as "emulated" agents. Consult the Deployment Guide for your respective T-Server for more information about configuring emulated agents.

Configuring Do Not Disturb Status at Login

UC Connector relies on T-Server/SIP Server to determine the Do Not Disturb status of the Knowledge Worker when they log in. You can define this status by setting the relevant T-Server/SIP Server options that are used to control whether emulated agents are logged in to the Ready or NotReady state.

Some T-Servers might not support defining this behavior using configuration options. In this case, the Do Not Disturb status of the Knowledge Worker at login cannot be defined. Consult the Deployment Guide for your T-Server for information about how to configure this feature.

After Call Work is Not Supported

UC Connector does not support After Call Work (ACW) time for Knowledge Workers. Ensure that **ACW** in the Agent Login for the Knowledge Worker is disabled (set **wrap-up-time** to 0).

Configuring the Knowledge Worker

The following table describes the basic steps required to configure the Knowledge Worker on the Genesys side.

Objective	Actions
1. Create KW DNs.	Create an Extension DN for each Knowledge Worker you want to integrate into the contact center. For information about configuring Extensions, consult the respective Deployment Guide for your T-Server.

2. Create Agent Logins.	1. In the Agent Login folder under the Switch, create an Agent Login object for each Knowledge Worker. 2. On the **General** tab, enter an agent login ID in the Code field. You will link to this agent login when you create the Person object for the Knowledge Worker.
3. Configure Places.	1. Create a Place object for each Knowledge Worker. 2. Add a shortcut to the DN you created in Step 1. For a detailed procedure, see the Creating the Knowledge Worker Place in Genesys Administrator in : • Configuration Database Procedures.
4. Create Knowledge Worker Persons.	Each Knowledge Worker requires a Person to be created in the contact center. 1. For each KW, create a Person object. 2. On the **General** tab, define a user name and password (which you will use later to log into the UC Connector interface in the client). Format depends on how <userid> is configured in the custom tab .xml file. See Modifying the Custom Tab File in Configuration Database Procedures. 3. In the **Annex** tab, **UC-Connector** section, configure the following option:enabled. 4. In the Microsoft-OCS section, configure the following options: • **agent-status-ready** (optional) • **agent-status-notready** (optional) • **agent-status-logout** (optional) • **contact** 5. For each Person, on the **Agent Info** tab: • Configure a default Place. • Assign the Login ID that you created in Step 2. For details, see Creating the Knowledge Worker Person in Genesys Administrator in • Deployment Procedures.

Integrating with Workspace Desktop Edition

For the purposes of this guide, the agent side of the customer interaction is presented using Workspace Desktop Edition 8.5. Workspace provides the functionality required to give agents access to experts outside the contact center. This functionality includes:

- Showing a group of Knowledge Workers in the Workspace Buddy List (the group will appear as a regular agent group).
- Showing an individual Knowledge Worker in the Workspace Buddy List (the KW will appear as a regular agent).

For more information about using the Buddy List, consult the Workspace Desktop Edition 8.5 Deployment Guide and the Workspace Desktop Edition 8.5 User's Guide.

If you are using previous versions of Agent Desktop, or a customized agent client using the Genesys SDK, some modifications may be required to achieve the above functionality. Consult the Agent Desktop Deployment Guide for your version of the product, or the Genesys SDK used to create your custom agent client.

Integrating with Genesys Routing

Genesys routing is used to handle transfers and conferences both to and from the Knowledge Worker. For agent transfers to the Knowledge Worker, the routing strategy must be designed to include the Preview Interaction, and the `Routing Point` DN—or DNs—should be accessible to the agent desktop. For Knowledge Worker transfers to the contact center, special "contact points" must be created in Genesys. These contact points (Routing Point DNs) are then exposed in the UC client Interaction window, so that Knowledge Workers can send calls back to the contact center for further processing.

The following table describes the main steps required to enable Genesys routing to and from Knowledge Workers.

Objective	Actions
1. Create a "dummy" Custom Server Application object.	1. Import the `Custom_Server_800.apd` application template. 2. Create the Custom Server Application object with the same host as UC Connector. **Key Rules** • Do not install the Custom Server `.exe` file. Only the dummy application is required in the Configuration Layer. This is because an instance of the Custom Server is included with the UC Connector executable. • Create one dummy Custom Server for each instance of UC Connector. • For HA deployments, deploy one dummy Custom Server for each HA UC Connector pair. For more information, For details, see Creating the Customer Server Application Object in Configuration Database Procedures.
2. Connect UC Connector to Custom Server.	Add connections to Custom Server in both UC Connector and URS Application objects: • On the `Connections` tab of the Application object, Add and browse for the Custom Server object you created in Step 1. • Do this for both UC Connector and URS.
3. Configure a contact point for the Knowledge Worker.	1. Configure a `Routing Point` DN as the contact point that Knowledge Workers can use to transfer/conference interactions back to the contact center. Add the following options to the Annex tab: • `enabled`—Set this option to `true`. • `display-name`—Set this option to the name that will be displayed in the Interaction window. For

	example, `Contact Center`. • `attribute<n>`—Set this option to the statistics you want to make available for this contact point. For details, see Configuring contact points in Configuration Database Procedures. 2. Create a routing strategy that handles agent selection in the contact center, and load it on this DN. Preview Interactions for transfers to agents are not required. **Key Rules** • Create a separate `Routing Point` DN for each contact point that you want to appear in the Interaction window.
4. Configure routing from contact center to Knowledge Worker.	• Configure Routing Points for contact center agent transfers to the Knowledge Worker. • Create and load the routing strategies that will direct transferred calls to the Knowledge Worker. **Sample Strategies** For sample strategies that you can import or use as a model for your own strategies, see the following: • Routing to a Particular Knowledge Worker • Routing with Round-Robin Selection • Routing with Broadcast Preview

Enabling Instant Messaging

Instant Messaging (IM) functionality is available through either of the following configurations:

- Integration with Genesys Instant Messaging (IM)
- SIP Server integration with Microsoft Lync / Skype for Business

Pros and Cons

The following table describes the advantages and disadvantages of the supported IM configurations.

Genesys IM Integration	SIP Server-Lync / Skype for Business Integration
* Platform-independent Can be used regardless of Microsoft Integration and also in stand-alone mode..	* Limited to Lync / Skype for Business deployments.
* Inbound IM only. The Knowledge Worker can only accept incoming IM sessions. They cannot initiate new IM sessions with the contact center.	* Inbound and outbound IM. The Knowledge Worker can both accept incoming IM sessions, as well as initiate new IM sessions with the contact center.
* Simplified configuration. You can configure a single DN to support both voice and IM interactions.  You can still choose to keep the interactions on separate DNs— for example, to separate voice and chat traffic across two separate switches.	* Multiple DNs required. • Lync / Skype for Business integration with SIP Server requires a separate Knowledge Worker DN for voice and IM. It also requires a special DN to handle the direct connection between SIP Server and the Font End Server for IM.
* UCC-controlled IM window.	* Lync / Skype for Business-controlled IM window.
* T-Library With UC Connector, chat through Genesys IM is controlled by the T-Library interface. This allows UC Connector to manage the IM session.	* SIP Chat is provided through the SIP interface.

Enabling Genesys IM

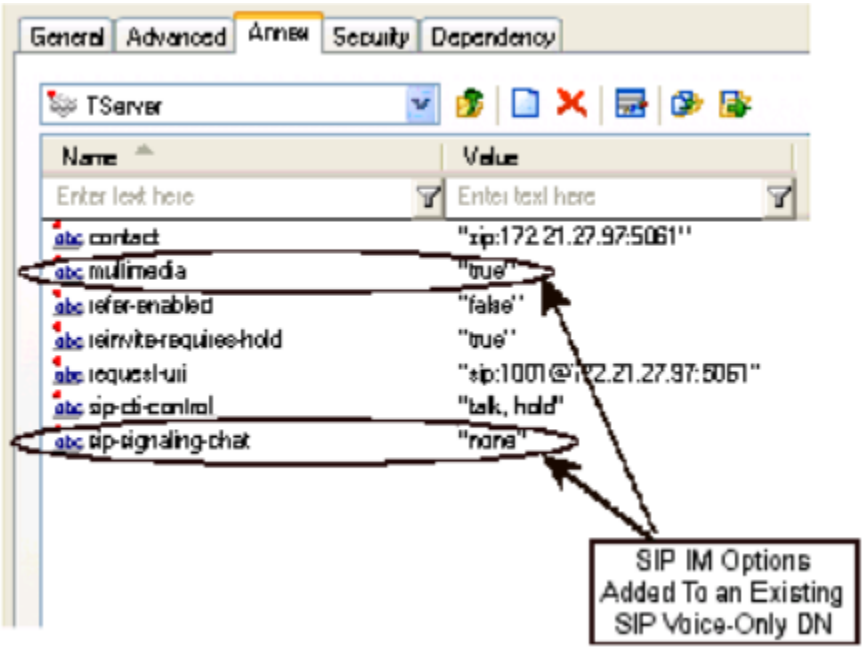
The following table shows the main steps required to integrate the UC Connector with SIP Server for IM functionality, in a UC Connector deployment.

Objective	Actions
1. Verify the Genesys IM solution.	The Genesys IM Solution uses many of the same prerequisite

	Genesys components as those used by UC Connector: • Genesys Stat Server • Universal Routing • Interaction Workspace or customized desktop These components should already be installed and configured as part of the prerequisites for deploying UC Connector. Genesys IM also requires: • SIP Server For more information, see: • Genesys 7.6 Instant Messaging Solution Guide • Framework 8.1 SIP Server Deployment Guide
2. Configure the Knowledge Worker DN.	Configure the Knowledge Worker `Extension` DNs with the following options: • `multimedia`—Set this option to `true` to allow IM interactions. • `sip-signaling-chat`—Set this option to `none` so that UC Connector handles the IM interaction. • `voice`—(Optional) Set this option to `false` for DNs that will only provide chat functionality. (For example, if you are separating chat and voice traffic across different switches). **Sample DNs:** • Single DN for Both Chat and Voice • Separate Chat-Only DN
3. (Optional) Customize the Chat window.	You can customize the name for the Chat window. In the UC Connector Application, on the Options tab, `UC-Connector` section, you can configure the following options: • `chat-title`—Enter the name you want to appear in the regular chat window. • `chat-consult-title`—Enter the name you want to appear in the window that appears for consultation chat interactions.

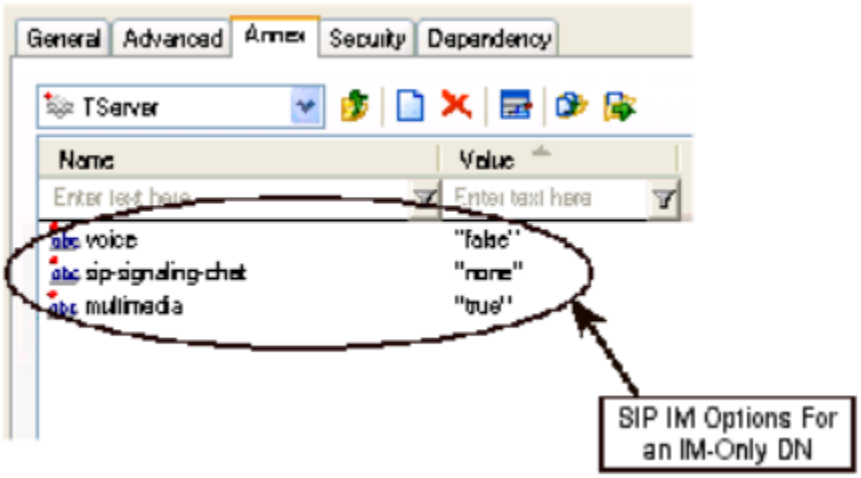
Single DN for Both Chat and Voice

You can modify an existing Knowledge Worker voice DN to also handle the chat interaction. Or you can create a separate DN that handles chat only. This diagram shows a DN that handles SIP voice plus SIP instant messaging (the `sip-signaling-chat` option is set to none).



Separate Chat-Only DN

This diagram shows what this same DN object's options might look like if you intended for it to handle SIP instant messaging only (the `sip-signaling-chat` option is set to none, and the `voice` option is set to `false`).



Next Steps:

- If you do not require secure communication in the deployment, continue with Configuring the Routing Strategies.

- If secure communication is required, continue at one of the following:
  - Enabling MTLS Communication
  - Enabling TLS/Kerberos Secure Communication

Enabling IM through SIP Server and Microsoft Lync / Skype for Business Server

The following table shows the main steps required to integrate SIP Server with the Front End Server for IM functionality, in a UC Connector deployment.

Objective	Actions
1. Install and configure SIP Server.	SIP Server is mandatory for Instant Messaging. If SIP Server is not already part of your deployment, install and configure SIP Server according to the procedures described in the Framework 8.1 SIP Server Deployment Guide. No special configuration in the SIP Server Application object is required for IM.
2. Integrate SIP Server with Lync / Skype for Business Server.	Complete all the steps for Presence Integration with Microsoft Office Communications Server 2007, as described in the Framework 8.1 SIP Server Deployment Guide. These steps include: • Creating a Routing Point and adding a user for it in Lync / Skype for Business Server. Used for presence integration. • Configuring a `Trunk` DN for the Lync / Skype for Business Server. • Configuring `Extension` DNs for each Knowledge Worker, to be used for IM interactions only. Do not configure the `ocs-dn` option in the `Extension` DN. Presence is handled through UC Connector.
3. (Optional) Customize the Chat window.	You can customize the name for the Chat window. In the UC Connector Application, on the Options tab, `UC-Connector` section, you can configure the following options: • `chat-title`—Inter the name you want to appear in the regular chat window. • `chat-consult-title`—Enter the name you want to appear in the window that appears for consultation chat interactions.

Next Steps:

- If you do not require secure communication in the deployment, continue with Configuring the Routing Strategies.

• If secure communication is required, continue to one of the following:

- - Enabling MTLS Communication
  - Enabling TLS/Kerberos Secure Communication

Enabling Secure Communication

UC Connector supports the Kerberos protocol for establishing secure connections—using simple Transport Layer Security (TLS) or Mutual Transport Layer Security (MTLS)—between the UC Connector application and Microsoft Lync/Skype for Business Front End Server. Kerberos is required for integrations with the Front End Server to act as a client. MTLS is required to push presence status to Lync / Skype for Business.

About TLS/Kerberos Security

Kerberos is a secure method for authenticating a request for a service in a computer network. If configured for TLS/Kerberos secure communication, when UC Connector registers with Microsoft Lync / Skype for Business (by sending a SIP REGISTER request), the server will use Kerberos authentication procedures to send sip `401 Unauthorized` or sip `407 proxy authentication required` in the following cases:

- UCC is using regular TCP connection, and the UC Connector host IP address has not been added to the Trusted Host list.
- UCC is configured to use TLS connection.

To configure TLS/Kerberos, see the Kerberos information in the *UC Connector 8.0.3 Lync Integration Deployment Guide*, Security Procedures.

About MTLS

If configured for Mutual Transport Layer Security (MTLS), a shared trusted Certificate Authority (CA) on both the UC Connector host and the Lync deployment are used to establish secure communication. The certificates prove the identity of each server to the other.

To configure MTLS, see the *UC Connector 8.0.3 Lync Integration Deployment Guide*, Security Procedures.

Customizing UC Connector

UC Connector supports the following customization:

- Help Button—Enable the Help buttons on various UC Connector client windows.
- Default Language—Modify the language used in the UC Connector user interface.
- Audio—Enable an audio file to play when UC Connector displays a Preview or Ringing pop-up window.
- Hotkeys—Configure hotkeys to control accepting or rejecting a call when UC Connector displays the Preview window.
- Knowledge Worker States—Customize the “agent states” displayed in the UC Connector Web Client drop-down menu.
- Redirect Number—Enable a Knowledge Worker or Administrator to define an external telephone number to recieve interactions.
- After Call Work—Enable a Knowledge Worker to enter the After Call Work state.

Help Buttons

Customizing the Help Buttons

The following table describes the steps required to enable an active Help button in the various UC Connector client windows. For general information about this feature, see Customized Help.

Objective	Related Procedure and Action
Customize the Help Buttons.	In the `UC-Connector` section of the UC Connector Application object, configure any of the following: • help-login-url—Enter the path the Help file for the Login screen. For example, the path to the sample help file is: `/help/login.html` • help-interaction-url—Enter the path to the Interaction window Help file. For example, `/help/interation.html`. • help-callcontrol-url—This configuration applies to both the Preview and Interaction windows. For example, `/help/callcontrol.html`. **Key Notes** • Sample help files are included on the product

	CD. You can find them under the `documentation/help` folder. • You can move these sample help files to a network-accessible location (point the help-url options to this location). Or you can create help files of your own. • By default, these options are not configured. You can enable any or all of these buttons. Only if enabled will a particular Help button appear. • For external help files, use a fully qualified URL. For example, `http://www.companyhelp.com`.

Default Language

Changing the Default Language

The following table describes the steps required to modify the language used by the UC Connector client interface. For general information about this feature, see Customized Languages.

Objective	Related Procedure and Action
Change the Default Language.	In the `UC-Connector` section of the UC Connector Application object, configure the following: • locale—Enter a two-character language code. For example, the default language (English) uses the code en. For a list of supported languages and character codes, see Supported Languages.

Audio

Enabling Audio on Preview or Ringing

The following table describes the steps required to enable an audio file to play, in a loop, when UC Connector displays a Preview or Ringing pop-up window.

Objective	Related Procedure and Action

Enable audio when a preview or ringing pop-up is displayed.	In the `UC-Connector` section of the UC Connector Application object, configure one of the following: • audio-on-preview—Enter the location of the audio file. For example, a file path to the UC Connector installation or a URL to some other network-accessible location. • audio-on-ring—Enter the location of the audio file. For example, a file path to the UC Connector installation or a URL to some other network-accessible location. **Key Notes** • To specify the location of a file in the UC Connector installation, place the file in the `UCC-install/webapps` directory or any of its subdirectories. For example, if an audio file 'ring.mp3' is placed in `UCC-install/webapps/audio/`, then the value for the `audio-on-ring` or `audio-on-preview` option should be `/audio/ring.mp3`. • These options are only applicable when UC Connector is used in non-gateway mode (`presence-gateway-mode` is set to `false`). • This feature supports .mp3, .ogg and .wav formats, but not all audio formats are supported by all browsers. HTML5 is used to play the audio file, which is not supported by Internet Explorer 8. For information on audio formats and browser support as of the time this document was last updated, see the Audio Formats and Browser Support table.

Browser Support

Audio Formats and Browser Support

Browser	MP3	Wav	Ogg
Internet Explorer 8	No	Yes	No
Internet Explorer 9+	Yes	No	No
Firefox 4.0+	No	Yes	Yes
Google Chrome 6+	Yes	Yes	Yes
Apple Safari 5+	Yes	Yes	No

Hotkeys

Configuring Hotkeys for Interaction Preview

The following table describes the steps required to configure hotkeys to control accepting or rejecting a call UC Connector displays the Preview window.

Objective	Related Procedure and Action

Configure hotkeys for interaction preview.	In the `UC-Connector` section of the UC Connector Application object, configure the following:
	• `preview-shortkey-accept`—Set to an alpha-numeric or ASCII number format to represent the key used to accept the call when the Preview window is displayed.
	• `preview-shortkey-reject`—Set to an alpha-numeric or ASCII number format to represent the key used to reject the call when the Preview window is displayed.
	Key Notes
	• The user is still able to click the corresponding buttons in the Preview window.
	• The Preview window must be in focus for the hotkeys to function.
	• ASCII decimal number format—The string must start with a hash (#) as the first character:
	  • #32
	Only a single digit can be processed with this ASCII decimal number format.
	• Alpha-numeric format—The number of characters should not exceed 255, and the first character '#' should be specified as '##'.The string can be a combination of uppercase and lowercase characters representing a single keystroke:
	  • `QqWwEeRrTt`

Knowledge Worker States

Customizing Knowledge Worker States

The following table describes the steps required to configure customized Knowledge Worker states

and display customizable menus. For general information about this feature, see Customized Knowledge Worker States.

Objective	Related Procedure and Action
1. Modify or override the presence definition document.	The UC Connector application is initially installed with a default presence definition document called `presence.xml` file. This file contains the two states available in releases prior to 8.0.300: • Set Do Not Disturb On • Set Do Not Disturb Off You can modify this file or create your own XML file to override the default. See Presence definition document for details.
2. Enable customized Knowledge Worker states.	In the `UC-Connector` section of the UC Connector Application object, configure the following: • `presence-location`—Set to the location of the `presence.xml` file.

Redirect Number

Enabling a Redirect Number

The following table describes the steps required for either a Knowledge Worker or an Administrator to enable an external redirect number. Enabling this feature allows Knowledge Workers to accept preview calls at the specified number. For general information about this feature, see External Number Redirect.

Objective	Related Procedure and Action
Enable the redirect setup.	To allow all users to set and enable their own redirect number using the `Setup` menu option in the UC Connector web client: • In the `UC-Connector` section of the UC Connector Application object, set the option `redirect-setup-enabled` to `true`. To allow a specific user to set and enable his or her own redirect number: • In the `Persons > Annex > UC-Connector` section, set the option `redirect-setup-enabled` to `true`. This option overwrites the value of the application-level `redirect-setup-enabled` option.

	To set and enable the redirect number for a Person: • In the `Persons > Annex > UC-Connector` section, set the `redirect-number` option to the number. • In the `Persons > Annex > UC-Connector` section, set the `redirect-enabled` option to `true`.

After Call Work

Enabling After Call Work

When an agent enters the After Call Work state, the agent's presence state is preserved in Genesys until the agent uses the Lync client menu to change state, or the After Call Work timer expires. The agent's presence state is also propagated to the Lync server so that the agent's unavailability is reflected in the corresponding Lync presence, with a configurable presence status and note values.

When the agent exits the After Call Work state (either automatically or manually), the agent's Lync presence state is set back to a value that is preserved from the Lync presence update. The agent's Genesys state is also updated with the corresponding value.

The following table describes the steps required to configure the presence and note values for the After Call Work and Legal Guard states.

Objective	Related Procedure and Action
Enable After Call Work.	In the `Microsoft-OCS` section of the UC Connector Application object, configure the following: • `presence-acw-note`—Enter the note UC Connector uses when an agent enters the After Call Work State. • `presence-acw-status`—Enter a positive integer between 1 and 18500.
Enable Legal Guard.	In the `Microsoft-OCS` section of the UC Connector Application object, configure the following: • `presence-lg-note`—Enter the note UC Connector uses when an agent exits the After Call Work state and enters the Legal Guard state.

	• `presence-lg-status`—Enter a positive integer between 1 and 18500.

Presence Definition Document

You can provide an XML file with presence definitions that can override the default definitions. This file is recognized as a resource file and its location is defined with the `presence-location` option.

The default presence definition document is called presence.xml. This file represents the custom states seen by the agent in releases prior to 8.0.300, which provides backwards compatibility. See Presence Definition Document Examples for the default `presence.xml` file and other examples.

Requirements and Restrictions

XML Document

If the namespace of the loaded XML definition is not matched, UC Connector considers the XML definition to be invalid. If the XML definition is invalid, UC Connector ignores it and continues to use the previous valid definition.

UC Connector considers an XML document to be valid if at least one state definition is valid.

UC Connector only uses the first root element with the name "presence" for all state definitions.

State ID

The State ID must not contain whitespace characters and it must be unique. If there are multiple states with the same ID, only the first definition is used.

The following predefined names cannot be used with the state:

- predefLogoutMenu
- predefLoggedOut
- predefOutOfService
- predefReady
- predefPartReady
- predefNotReady
- predefDND

Icons

There are two types of icons used in the web client:

- Main icons to represent agent status in the agent status indicator on the main panel of the web client. These icons must be 16 by 16 pixels. The icons can be specified as a local or URL location, or the ID of a standard icon can be provided. The following table lists predefined icon ID URIs you can use:

Predefined Icon ID URIs

Icon ID URI	Icon Description
tag:ucc.genesyslab.com,2013:icons/status/ready	Round green shape
tag:ucc.genesyslab.com,2013:icons/status/partready	Round part green and part orange shape with vertical divider
tag:ucc.genesyslab.com,2013:icons/status/notready	Round red shape
tag:ucc.genesyslab.com,2013:icons/status/dnd	Red "Stop" pictogram
tag:ucc.genesyslab.com,2013:icons/status/logout	Red "Out" pictogram
tag:ucc.genesyslab.com,2013:icons/status/oos	White cross on grey background

- Badge icons to represent agent status in the agent status indicator Channel view (icons). These icons must be 10 by 10 pixels. UC Connector will use the location of the main icon to define the location for the bade icon. For example, if a main icon location is defined as `/icons/iconName.png`, then UC Connector will use the location `/icons/iconName-badge.png` for the badge icon.

UC Connector does not check the supplied images; any image is valid as long as it is supported by the client browser.

Display Text

The display text entries in the XML definition must follow these guidlines:

- The entry must have an element "stateText" in order to present the status text in agent status indicators.
- The entry must have an element named "menuText" to make it available for execution. If the element is missing, UC Connector will not add an entry in the drop-down menu of the web client.
- UC Connector only considers an entry valid if it has either a "menuText" or "stateText" element.
- Entries can be defined for any language, but only languages currently supported by UC Connector will be used. See List of Supported Languages.
- If an entry for default language is missing, UC Connector does not display the corresponding state in an unsupported language.

Genesys Agent State Definitions

UC Connector processes the definitions for states in the order in which they are defined in the XML document. UC Connector uses the first found state that matches an event reported by T-Server to represent the agent state in the in the agent state indicators. For example, if the XML definition has an entry defining the state NotReady with no reasons, followed by a definition for the state Not Reay with reason, then UC Connector uses the first entry.

UC Connector ignores a work mode definition for an element "ready" with a value of "true". If the

value is "false", UC Connector will accept the following work modes:

- manual
- acw
- legal
- auxwork
- away
- back
- nodisconnect

> **Important**
> The work modes might not be supported by T-Server.

Auto State Definition

UC Connector only accepts the following auto-state event definitions:

- preview-reject
- preview-timeout
- preview-redirect

UC Connector checks if the attributes "onevent" and "postevent" refer to an existing state definition. If no match is found, the value is ignored.

For each of the auto-states missing in the custom-defined XML document, UC Connector uses a predefined auto-state definition:

- When activated, the default auto-state "preview-reject" invokes the default DND state and the default Ready state when the timeout defined in the `dnd-off-timeout` option expires.
- When activated, the default auto-state "preview-timeout" invokes the default NotReady state.
- When activated, the default auto-state "preview-redirect" invokes the default DND state.

> **Important**
> UC Connector supports "postevent" only for the auto-state "preview-reject".

Presence Definition Document Examples

This section provides an example of the presence definition document that allows you to customize the states available to Knowledge Workers in the UC Connector web client drop-down menu.

<tabber> |-| Custom State Definitions Document=

Example of Custom State Definitions Document

In this example, localization has been inserted into the file to allow for simplicity, but other options are available as long as the file follows the rules of the Presence Definition XML Schema.

The example below shows a possible customization of the `presence.xml` file.

```
<?xml version="1.0" encoding="utf-8"?>
<presence xmlns="http://genesyslab.com/schemas/ucc/presence"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://genesyslab.com/schemas/ucc/presence presence.xsd">

  <state icon="ready.png" id="ready">
  <display>
    <menuText>Set Ready</menuText>
    <statusText>Ready for next call</statusText>
    </display>
    <genesysAgent ready="true"/>
 </state>

 <state icon="acw.png" id="acw">
 <display>
   <statusText>Working after call</statusText>
   </display>
 <display language="fr">
   <statusText>Travail apres appel</statusText>
   </display>
 <display language="de">
   <statusText>Arbeiten nach Anruf</statusText>
   </display>
   <genesysAgent ready="false" mode="acw" />
 </state>

 <state id="away" icon="away.png">
 <display>
    <menuText>Set away</menuText>
    <statusText>Away from the desk</statusText>
    </display>
    <genesysAgent ready="false" mode="away" />
 </state>

 <state id="lunch" icon="away.png">
 <display>
    <menuText>Lunch</menuText>
    <statusText>Away for a lunch</statusText>
    </display>
    <genesysAgent ready="false" mode="away">
```

```
      <reason ext="true">500</reason>
   </genesysAgent>
 </state>

 <state id="auto-away" icon="away.png">
 <display>
    <statusText>Automatic away</statusText>
    </display>
    <genesysAgent ready="false" mode="away">
       <reason>timeout</reason>
    </genesysAgent>
 </state>

 <state id="busy-preview" icon="busy.png">
 <display>
    <menuText>On a call</menuText>
    <statusText>On a remote call</statusText>
    </display>
    <genesysAgent ready="false" mode="acw">
       <reason>redirect</reason>
   </genesysAgent>
 </state>

 <state id="reject" icon="busy.png">
 <display><statusText>Busy after reject</statusText></display>
   <genesysAgent ready="false" mode="auxwork">
    <reason>reject</reason>
   </genesysAgent>
 </state>

 <auto>
    <event name="preview-timeout" onevent="auto-away" />
    <event name="preview-reject" onevent="reject" postevent="ready" />
    <event name="preview-redirect" onevent="busy-preview"/>
 </auto>
</presence>
```

|-| Presence Definition XML Schema=

Presence Definition XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://genesyslab.com/schemas/ucc/presence"
xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:uccp="http://genesyslab.com/schemas/ucc/presence"
elementFormDefault="qualified">
<annotation>
<documentation>Presence states specification in Smart Link solution
</documentation>
</annotation>
<element name="presence">
<annotation>
<documentation>The root element of Smart Link presence containing all
state definitions
</documentation>
</annotation>
<complexType>
<sequence>
<element name="state" type="uccp:StateType" minOccurs="1" maxOccurs="unbounded">
```

```
<annotation>
<documentation>Definition of a distinct state</documentation>
</annotation>
</element>
<element name="auto" type="uccp:AutoStateEvents" minOccurs="0" maxOccurs="1">
<annotation>
<documentation>Automatic state transitions executed by UCC
</documentation>
</annotation>
<key name="event-name">
<selector xpath="event" />
<field xpath="@name" />
</key>
</element>
<element name="composite" minOccurs="0" maxOccurs="unbounded">
<annotation>
<documentation>Definitions of composite multi-channel states.</documentation>
</annotation>
<complexType>
<sequence>
<any>
<annotation>
<documentation>
The schema for complex combined presence states across multiple channels is to
be defined.
Not yet implemented.
</documentation>
</annotation>
</any>
</sequence>
</complexType>
</element>
</sequence>
</complexType>
<key name="state-id">
<selector xpath="state" />
<field xpath="@id" />
</key>
<keyref name="auto-ref" refer="uccp:state-id">
<selector xpath="auto/*" />
<field xpath="@onevent" />
</keyref>
<keyref name="auto-ref-post" refer="uccp:state-id">
<selector xpath="auto/*" />
<field xpath="@postevent" />
</keyref>
</element>
<complexType name="StateText">
<annotation>
<documentation>
Localizable strings for state-related GUI.
</documentation>
</annotation>
<all>
<element name="menuText" type="string" minOccurs="0">
<annotation>
<documentation>
The text that is displayed as GUI menu string.
Absent element means GUI menu is not available (such state can only be
entered automatically and cannot be requested from the menu)
</documentation>
</annotation>
</element>
```

```
<element name="statusText" type="string" minOccurs="0">
<annotation>
<documentation>Text string displayed as current status indicator
when in this state.
Absent element means that the status is not reflected in the status bar.
</documentation>
</annotation>
</element>
</all>
<attribute name="language" type="language" use="optional" />
</complexType>
<complexType name="StateType">
<annotation>
<documentation>Full definition of a state consists of GUI string in one or more
languages,
matching Genesys agent states and UC states.
</documentation>
</annotation>
<sequence>
<element name="display" type="uccp:StateText" minOccurs="1"
maxOccurs="unbounded">
<annotation>
<documentation>GUI appearance of the state</documentation>
</annotation>
</element>
<element name="genesysAgent" type="uccp:GenesysAgentState" minOccurs="1"
maxOccurs="unbounded">
<annotation>
<documentation>Genesys agent state matching this state definition.
UCC user will transition to this state if Genesys agent status
event is received matching this element.
</documentation>
</annotation>
</element>
</sequence>
<attribute name="id" type="ID">
<annotation>
<documentation>Unique ID of the state. It can be used to reference
this state from the "auto" section or "partial" section.
</documentation>
</annotation>
</attribute>
<attribute name="icon" type="anyURI">
<annotation>
<documentation>
Graphic representation of this state in GUI.
Use HTTP URL or one of the pre-defined icon identifiers in the
"tag:ucc.genesyslab.com,2013:icons/status/" namespace
</documentation>
</annotation>
</attribute>
</complexType>
<complexType name="AutoStateEvents">
<sequence>
<element name="event" type="uccp:AutoState" minOccurs="0" maxOccurs="4" />
</sequence>
</complexType>
<complexType name="AutoState">
<annotation>
<documentation>
State transition after event occurrence.
</documentation>
</annotation>
```

```
<attribute name="name" use="required">
<simpleType>
<restriction base="token">
<enumeration value="preview-reject" />
<enumeration value="preview-timeout" />
<enumeration value="preview-redirect" />
</restriction>
</simpleType>
</attribute>
<attribute name="onevent" type="IDREF" use="required">
<annotation>
<documentation>The state that is automatically entered after
the event. It must refer to a defined state id.
</documentation>
</annotation>
</attribute>
<attribute name="postevent" type="IDREF" use="optional">
<annotation>
<documentation>
The state after the timer. Must refer to one of the defined states by its id.
If not specified, the state prior to the event will be restored.
This element is only used if the corresponding duration time is set in CME.
</documentation>
</annotation>
</attribute>
</complexType>
<complexType name="GenesysAgentState">
<annotation>
<documentation>Definition of Genesys agent state</documentation>
</annotation>
<all>
<element name="reason" minOccurs="0" maxOccurs="1">
<annotation>
<documentation>Reason code of the state. Any string.</documentation>
</annotation>
<complexType>
<simpleContent>
<extension base="string">
<attribute name="in">
<annotation>
<documentation>
Whether to match or use the reason in AttributeReasons or
AttributeExtensions.
</documentation>
</annotation>
<simpleType>
<restriction base="token">
<enumeration value="reasons"></enumeration>
<enumeration value="extensions"></enumeration>
</restriction>
</simpleType>
</attribute>
<attribute name="keyname" type="string" default="ReasonCode">
<annotation>
<documentation>
Which data key to use
</documentation>
</annotation>
</attribute>
</extension>
</simpleContent>
</complexType>
</element>
```

```
</all>
<attribute name="ready" type="boolean" use="required">
<annotation>
<documentation>
Whether the definition concerns "ready" or "not ready" agent state.
</documentation>
</annotation>
</attribute>
<attribute name="mode" type="uccp:GenesysAgentMode" default="none">
<annotation>
<documentation>
Agent mode in the event/request. Not all modes may be supported by T-Server.
</documentation>
</annotation>
</attribute>
</complexType>
<simpleType name="GenesysAgentMode">
<restriction base="token">
<enumeration value="none" />
<enumeration value="manual" />
<enumeration value="acw" />
<enumeration value="legal" />
<enumeration value="auxwork" />
<enumeration value="away" />
<enumeration value="back" />
</restriction>
</simpleType>
</schema>
```

Deployment Procedures

This section contains detailed procedures related to configuring the Genesys Configuration Database, the environment, and security. It contains the following topics:

Configuration Database Procedures

This procedures below describe configuring UC Connector in the Genesys Configuration Database. Although most procedures use Configuration Manager as an example when accessing the Configuration Database, you can also use Genesys Administrator.

Creating the UC Connector Application Object

Prerequisites

- The host object has been created for the machine where you want to install UC Connector.
- The UC_Connector_800.apd is imported into the Application Templates folder. For details, see Deploying UC Connector.
- You are logged into Configuration Manager.

1. Go to Environment, right-click the Applications folder, and select `New > Application`.

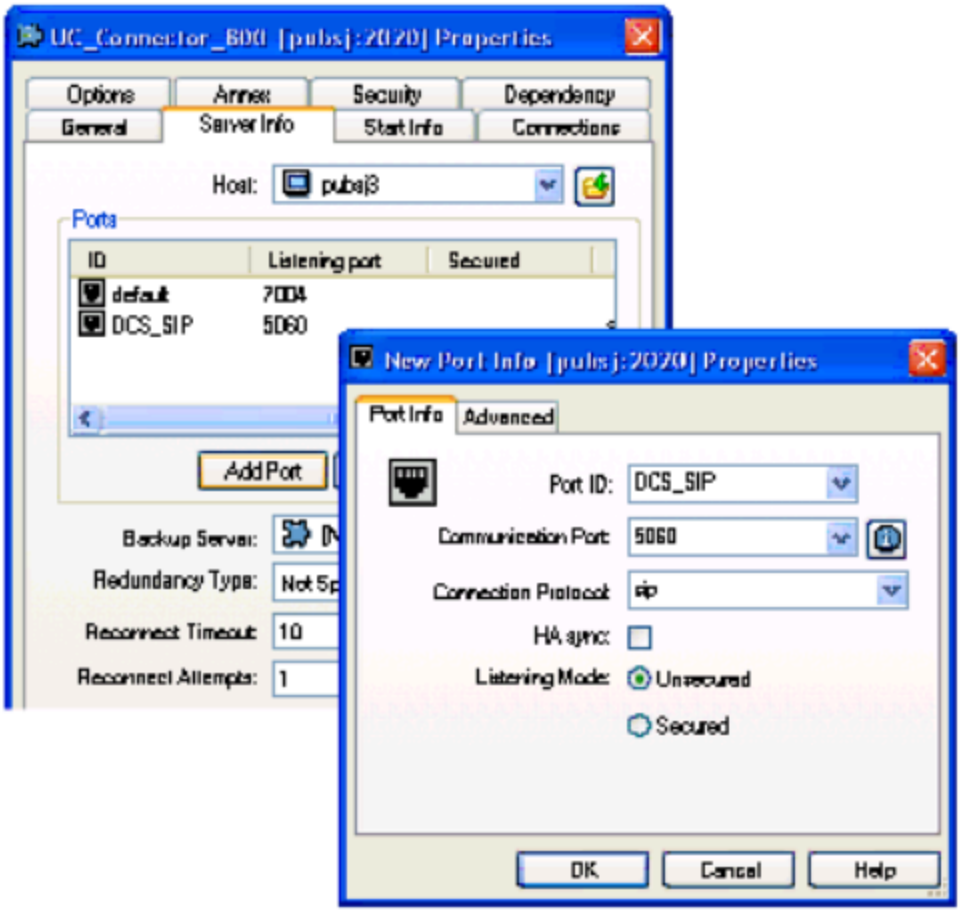
2. In the `Browse` window, select the `UC_Connector_800.apd` that you created above under Prerequisites.

3. On the `General` tab of the new object window, give the UC Connector a Name.

4. On the `Server Info` tab, browse to select the `Host`.

5. Lync / Skype for Business requires a secure connection for communication with UC Connector. In addition to the default listening port, click `Add Port` to add an additional SIP listening port for communication with the third-party UC platform.

- `Port ID`—Enter a useful name for this port.
- `Communication Port`—Enter the SIP communication port to be used. Any free port on the UC Connector host may be used.
- `Connection Protocol`—Select `sip` from the drop-down list.
- `Listening Mode`—Select the Secured option.



6. On the `Connections` tab, add connections to:

- T-Server/SIP Server—To handle agent and call control.
- Stat Server—To present real time information about resources.
- Message Server—To handle log events.
- Custom Server—To handle the Preview Interaction.

> **Tip**
> Custom Server, which links UC Connector to the Universal Routing Server, might not be created yet. You can add the connection later if required.

7. On the `Start Info` tab, type a period (`.`) in the `Working Directory`, `Command Line`, and `Command Line Arguments` text boxes. The information will be filled in automatically when you install UC Connector.

8. Click OK.

Installing the UC Connector Server on the Host

Prerequisites

- A Windows Server 2008/2008 R2/2012/2012 R2 computer on which to install the server.
- A UC Connector Application object is configured.
- JDK 8.0 is installed on the host computer.
- A valid license file placed on a network-accessible location.

1. On the UC Connector 8.0 product CD, locate the `setup.exe` file and double-click to start the Genesys Installation Wizard.

> **Tip**
> Click the `About` button to see the `read_me` file. This file also provides a link to the product Release Note.

2. Follow the Wizard instructions, clicking `Next` through each of the following pages:

- `Connection Parameters to the Genesys Configuration Server`—Enter host name, port, user name, and password for Configuration Server.
- `Select Application`—Select the name of the UC Connector Application object.
- `Access to License`—Select one of the following options:
  - `License Manager`—You want your server application to use host name and port number parameters to connect to the license server. In this instance, you must enter values for the host and the port of the license server.
  - `License File`—You want your server application to retrieve license server information from the license file. Use the `Browse` button to navigate to the license file.
- `Choose Destination Location`—UC Connector requires that the path to the installation directory has no blank spaces. Genesys recommends accepting the default path: `C:\GCTI\UCConnector\[CME_Application_Name]`
- `Select Installed Java Development Kit (JDK)`—Select the JDK version installed for the UC Connector deployment. This should be the same JDK as the one you previously installed. See Installing Java in Baseline Components.
- `User Parameters`—Select HTTP or HTTPS. The installer then asks for the HTTP port. Enter the HTTP port to be used for HTTP communication between the UC Connector and the web page for the custom `UC Connector` tab in the UC client.

Take note of this HTTP port number. You will need to input this later when customizing the Microsoft Lync / Skype for Business client for integration with UC Connector.

- For High Availability deployments, use the Windows NLB Virtual IP address for the Host. Do this for both primary and backup UC Connector instances. You must also use the same port number for both instances. For details, see About High AvailabilityThrough Windows NLB.
- `Unified Communication Server Options`—Select your UC platform type: `Microsoft-OCS`.
- `Unified Communication Server Configuration`—Enter the following parameters:

UC Platform	Parameter	Value
Lync / Skype for Business	Contact	Enter the SIP URI configured in Microsoft Lync/Skype for Business for the UC Connector. This is the "principal" assigned to the UC Connector application. For example, `sip:lync-ucc@your-lync-address.com`. This principal represents the UC Connector in Microsoft Lync/Skype for Business.
	Registrar-uri	Enter the URI that UC Connector uses to connect to the Microsoft FE Server. For example, `sip:pool01.your-lync-address.com`.

- `Ready to Install`—Click `Install` to proceed.

3. In the final `Installation Complete` page, click `Finish`.

Configuring UC Connector Options

Prerequisites

- You are logged in to Configuration Manager.
- A UC Connector Application object is configured according to the Creating the UC Connector Application object tab above.
- Genesys recommends that you create an account/user to represent the UC Connector in Lync / Skype for Business—for example, `lync-ucc`.

1. Go to `Environment > Applications >` and double-click the UC Connector Application object.

2. Go to the `Options` tab.

3. In the `UC-Connector` section, configure the following options:

Option Name	Default Value	Description
chat-title	Chat	Enter the name you want to appear in the regular chat window.
chat-consult-title	Consulting Chat	Enter the name you want to appear in the window that appears for consultation chat

Option Name	Default Value	Description
		interactions.
presence-gateway-mode	false	If enabled, UC Connector does not send invite messages to Lync / Skype for Business when there is no web client UI connected for the corresponding user, and a new call or preview call is delivered. This disables the Smart Link functionality of the UC Connector. If false, sending the invite is controlled by the `invite-message` option.
preview-itx-arrival-timeout	9000	UC Connector waits 9 seconds (9000 ms) after the Preview Notification is accepted for the interaction to arrive.
preview-shortkey-accept	Blank	If blank, the keyboard hotkey is disabled. Otherwise, pressing one of the configured keys accepts the call when the interaction Preview window is displayed.
preview-shortkey-reject	Blank	If blank, the keyboard hotkey is disabled. Otherwise, pressing the one of the configured keys rejects the call when the interaction Preview window is displayed.
preview-expiration-timeout	15000	UC Connector waits 15 seconds (15000 ms) for a response from the target of the Preview Notification. If no response, the target user is set to NotReady. A countdown timer in the preview window shows how much time is remaining.
login-queue	No default value	Users logging in through the Custom Tab of the UC client are logged into the specified ACD Queue.
dnd-off-timeout	300000	If the user declines the Preview Notification, UC Connector sets the user to `NotReady` for 300000 milliseconds (5 minutes).
enable-logout-menu	false	Specifies whether the logout menu item is displayed in the UC

Option Name	Default Value	Description
		Connector GUI.
enable-preview-reporting	false	Controls whether UC Connector creates records in ICON for the interaction Preview events `Accepted, Rejected, Timeout, Taken, Error, Cancel`.
preview-state-name	3721, UCC_Preview	Specifies the numeric identifier and key name of the custom state associated with the UC Connector interaction Preview offer for the record in ICON.
presence-gateway-mode	UCC_ConnId,UCC_UserId, UCC_AgentId,UCC_Reason	Specifies the ordered list of key names used for reporting the UC Connector Preview offer parameters in ICON.
userdata-preview-format<n>	title: <UserData_DisplayName>, value: [UserData_Key]	UC Connector displays the value of the configured `UserData_Key` in a field, which will have the display name as configured in `UserData_DisplayName`.
userdata-call-format<n>	title: <UserData_DisplayName>, value: [UserData_Key]	UC Connector displays the value of the configured `UserData_Key` in a field, which will have the display name as configured in `UserData_DisplayName`.
userdata-contact-format	title: Contact, value: [USER-ID]	UC Connector displays the value of the configured USER-ID key under the field Contact, value: field. This value is not displayed in the interaction, but is required for a valid configuration.
popup-udata-key	Blank	UC Connector shows the call control window if the option value is blank. Otherwise, UC Connector shows the call control window for calls with the specified User Data Key.
userdata-note-key	KW_ITX_NOTES	UC Connector includes any agent notes on the interaction in the Interaction window.
userdata-onringing	false	Controls whether the user data specified in [[user-data-call_format<n>]] is displayed in a ringing interaction on the Knowledge Worker.
userdata-note-onpreview	false	Controls whether user data

Option Name	Default Value	Description
		specified in the userdata-note-key is displayed in a preview notification on the Knowledge Worker. The agent notes for the Preview window cannot contain single quotation (') marks.
userdata-note-onringing	false	Controls whether user data specified in `userdata-note-key` is displayed in a ringing interaction on the Knowledge Worker.
userdata-contact-onpreview	false	Controls whether user data specified in `userdata-contact-format` is displayed in a preview notification on the Knowledge Worker.
userdata-contact-onringing	false	Controls whether the user data specified in `userdata-contact-format` is displayed in a ringing interaction on the Knowledge Worker.
userdata-title	Case data	Specify the heading name to be displayed in an interaction for all the user data specified by the `userdata-call-format<n>` options. The text configured here appears in the GUI. If you are localizing the UC Connector language, make sure you modify this option to match the localized language.
userdata-note-title	Notes	Specifies the heading name to be displayed in an interaction for all the user data specified by the `userdata-note-key` option. The text configured here appears in the GUI. If you are localizing the UC Connector language, make sure you modify this option to match the localized language.
itx-window-close-timeout	9000	Enter the length of time you want the interaction to remain open after the Knowledge Worker interaction is released or abandoned.
user-unregister-timeout	300000 (5 minutes)	Enter the length of time, in milliseconds, that UC Connector will wait after Knowledge Worker

Option Name	Default Value	Description
		has closed all browser sessions before it unregisters the Knowledge Worker DN with T-Server/SIP Server.
sync-when-logout	true	Controls whether UC Connector logs in a user when only the Lync presence is available (that is, there is no independent login from a Genesys desktop client). In general, set this option to true in a back-office environment with complete Smart Link functionality. Set it to false when integrating with Lync Voice in the contact center.
presence-sync-mode	push, pull	Set in the Microsoft-OCS section. Controls whether, in integration with Microsoft Lync / Skype for Business, the presence of a user is pulled from Microsoft, or pushed to Microsoft. In case of pulling the user's Genesys presence changes when the Microsoft one does. In case of pull, when the status of a user changes in Genesys this is reflected in the Microsoft presence state.

4. In the log section, configure the following UC Connector-specific log option:

- `internal`—Set this option to the level of message detail you want for the internal UC Connector components. For other log-related options, see the *Framework 8.1 Deployment Guide*.

5. If you are integrating with Lync/ Skype for Business, configure the following options in the Microsoft-OCS section of the UCC Application object.

Option Name	Value	Description
agent-status-logout	1800, 0-2999, 1800	Maps the `Offline` presence status in Lync / Skype for Business to the Genesys Logout status.For more details about these values, see the Interoperability Values for Lync / Skype for Business Presence States in the Additional Information section.
agent-status-notready	6500,9500,12500,15500, 4500-18000.	Maps the `Away` presence status in Lync/Skype for Business to the Genesys `NotReady`. For more details about these values, see

Option Name	Value	Description
		the Interoperability Values for Lync / Skype for Business Presence States in the Additional Information section.
agent-status-ready	3500, 3000-4499	Maps the `Online` presence status in Lync / Skype for Business To the Genesys Ready status. For more details about these values, see the Interoperability Values for Lync / Skype for Business Presence States in the Additional Information section.
contact	SIP URI	Enter the user name for the UC Connector as configured in Lync / Skype for Business (called the UC Connector "principal"), For example, `sip:lync-ucc@your-domain.com`.
registrar-uri	SIP URI	Enter the URI that UC Connector uses to connect with Lync / Skype for Business. For example: `sip:pool01.your-lync-address.com`.

6. Click 0K.

Interoperability Values for Lync Skype for Business Presence States

The following table shows the interoperability values for the various presence states used in Microsoft Lync / Skype for Business.

These values correspond to those described in the Microsoft proprietary `MS-PRES` protocol. Genesys does not guarantee that these values will remain valid through future product updates. For the latest values, consult third-party Microsoft documentation.

Interoperability Value	Lync / Skype for Business Presence State
0 - 4499	Available
4500 - 5999	Available - Idle
6000 - 7499	Busy
7500 - 8999	Busy - Idle
9000 - 11999	Do Not Disturb
12000 - 14999	Be Right Back
15000 - 17999	Away
>= 18000	Offline

This completes the basic deployment of the UC Connector Application object. Next, create the Genesys objects used to represent Knowledge Workers in the Genesys environment.

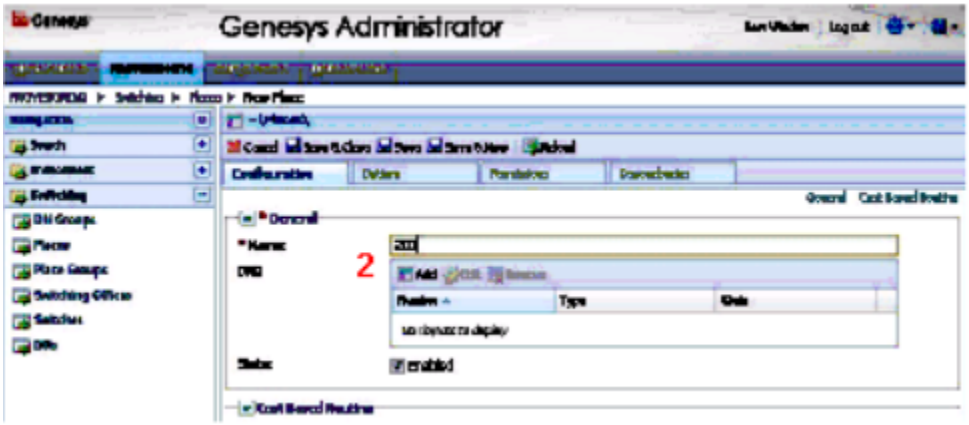
Creating the Knowledge Worker Place in Genesys Administrator

Prerequisites

- The Knowledge Worker DNs and Agent Logins are created.

1. Under `Provisioning > Switching > Places`, click the `New ...` button.

2. After you enter a name for the Place, click the `Add ...` button.



3. Double-click your Switch.

4. Double-click the DNs folder.

5. Select the DN you created, and click 0K.

6. Click Save.

7. Repeat this procedure for every Knowledge Worker that you want to integrate into the contact center.

Creating the Knowledge Worker Person in Genesys Administrator

Prerequisites

- An Agent Login is created for each Knowledge Worker. You will link to the ID for this Agent Login when creating the Person.

1. Under `Provisioning > Accounts > Users`, click the `New ...` button.

2. Configure the fields on the `General` tab. For the user name field, the format depends on how `<userid>` is configured in the custom tab .xml file. For more information about these fields, click Help (or consult the Framework 8.1 Deployment Guide).

3. On the Agent Info tab, browse and select the Place object that you created.

4. Click Add and browse to select the Agent Login that you created.

5. Click the Options tab and select Advanced View (Annex) from the View drop down list.

6. Create a UC-Connector section by using the following option:

- enabled—Set to true to enable this Person object for use with UC Connector.

7. On the Annex tab, depending on which UC platform you are integrating with, configure one of the following section: Microsoft-OCS.

Then configure the following options (for your UC platform):

Option Name	Value	Description
agent-status-logout	>=1800	Maps the Offline presence status in Lync / Skype for Business to the Genesys Logout status.
agent-status-notready	4500-17999	Maps the Away presence status in Lync / Skype for Business to the Genesys NotReady status.
agent-status-ready	0-4499	Maps the Online presence status in Lync / Skype for Business to the Genesys Ready status.
contact	SIP URI	Enter the Knowledge Worker sign in name for the UC Connector as configured in Microsoft Lync / Skype for Business. For example, sip:lync-ucc@your-lync-address.com.

8. Click Save.

9. Repeat this procedure for each Knowledge Worker you are integrating into the contact center.

This completes the configuration of the Knowledge Workers as represented in the Genesys environment. Next, you must integrate the UC Connector with the agent desktop used in your deployment. For example, you can integrate with Workspace Desktop Edition 8.5.x.

Creating the Custom Server Application object

Prerequisites

- You have the Universal Routing product CD or downloaded IP ready.

- URS is installed and configured according to the procedures described in the Universal Routing Deployment Guide.

> **Important**
> This procedure provides an overview of the main steps required to install and configure Custom Server.

1. Import the Custom Server Application template.
Go to the `Applications Template` folder. Import the `Custom_Server_800.apd` Application Template from the Universal Routing CD.

2. Create the Custom Server Application object.
Go to the `Applications` folder and create a new Custom Server Application object based on the template you imported.

3. On the `General` tab, specify the Application name.

4. On the `Server info` tab, specify the following:

- For non-HA Deployments—Add the same host that is as used by UC Connector.
- For HA deployments—Add the host and port for the Windows NLB virtual IP cluster.

5. Click `OK` to save.

6. Verify that both UC Connector and URS are both connected to the Custom Server application.

Configuring Contact Points

Purpose: To create the Routing Point DNs exposed in the Knowledge Worker Interaction window for transfer or conferences to the contact center.

1. Under a configured `Switch` object, select the `DNs` folder. In the `File` menu, select `New > DN` to create a new DN object of the type `Routing Point`.

2. On the `Annex` tab, create a `UC-Connector` section with the following options:

Option	Description
attribute<n>	Value: `format: <display text>: %s, statistic:<object>, <ObjectType>, <TenantName>, <StatType>, <TimeProfile>, <StatServerName>` Specifies the statistic to be displayed when the user places their cursor over the contact point in their Interaction window. For example, to display the number of calls waiting on a contact point (Routing Point 1111) as follows: `Calls Waiting: <#of calls>`

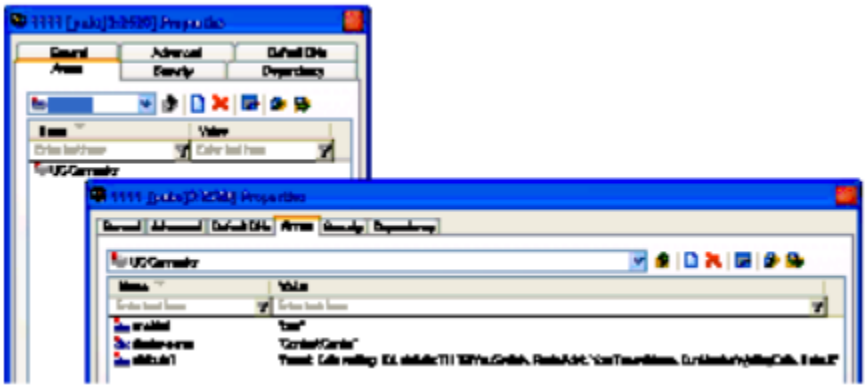
	configure the value for this option as follows: `format: Calls waiting: %s, statistic:1111@YourSwitch, RoutePoint, YourTenantName, CurrNumberWaitingCalls, Default` **Key Actions:** • All fields are required for UC Connector to properly subscribe to get the `CurrNumberWaiting` statistic from Stat Server. • You can enter the <n> variable in the option name as 1, 2, 3, and so on, or leave it empty. • The parameter <StatServerName> is only required if UC Connector connects to more than one Stat Server.
display-name	Value: `<required>` Enter a unique descriptive name for this contact point, as you want it to appear in the Interaction window.
enabled	Value: `true` Enables the contact to be used by the UC Connector.

3. Click 0K.

4. Repeat this procedure (creating a separate Routing Point DN) for each contact point that you want to appear in the Interaction window.

Contact Point Configuration

Shown below is a sample configured Routing Point DN.



'Next Steps:
1. Create a routing strategy that handles agent selection in the contact center, and load it on this DN. Interaction Previews for transfers to agents are not required. For general information about designing routing strategies, see the following Universal Routing documents:

- *Universal Routing 8.0 Strategy Samples*

- *Universal Routing 8.0 Reference Manual*

2. If you are deploying a voice-only UC Connector solution, continue with Configuring the Routing Strategies.

- Optional. If you want to include Instant Messaging interactions in the deployment, continue with Enabling Instant Messaging.
- Optional. If you want to enable secure communication in the deployment (and have not already done so), continue with Enable Secure Communications.
- Mandatory. Secured mode is mandatory for integrations with Microsoft Lync / Skype for Business Server. For TLS, see Secure Communications in the *UC Connector 8.0.3 Lync Integration Deployment Guide*.
- For push presence status functionality, Mutual Transport Layer Security (MTLS) is required. See Security Procedures, Modifying Command Line Arguments for TLS in the *UC Connector 8.0.3 Lync Integration Deployment Guide*.

Creating the Custom Server Application object

Prerequisites

- You have the Universal Routing product CD or downloaded IP ready.
- URS is installed and configured according to the procedures described in the Universal Routing Deployment Guide.

> **Important**
> This procedure provides an overview of the main steps required to install and configure Custom Server.

1. Import the Custom Server Application template.
Go to the `Applications Template` folder. Import the `Custom_Server_800.apd` Application Template from the Universal Routing CD.

2. Create the Custom Server Application object.
Go to the `Applications` folder and create a new Custom Server Application object based on the template you imported.

3. On the `General` tab, specify the Application name.

4. On the `Server info` tab, specify the following:

- For non-HA Deployments—Add the same host that is as used by UC Connector.
- For HA deployments—Add the host and port for the Windows NLB virtual IP cluster.

5. Click 0K to save.

6. Verify that both UC Connector and URS are both connected to the Custom Server application.

Microsoft OS Procedures

This section describes Microsft operating system-related procedures.

Modifying the Registry for Microsoft Lync / Skype for Business

Purpose: UC Connector can integrate with the Microsoft Lync / Skype for Business Client through a "Conversation Extension window" that opens when an interaction arrives at the Knowledge Worker's desktop if the UC Connector Web UI is not already running. Additionally, a Custom Menu can be added to the Microsoft Lync / Skype for Business Client that when selected will start the UC Connector Web UI. Both features require an import to the Windows Registry using a registry file included in the UC Connection installation.

> **Important**
> Use of the "conversation extension window" currently only supported on Lync deployments. It is not supported when using Skype for Business. Custom Menus are supported on both Lync and Skype for Business deployments.

1. On the UC Connector host machine, locate the registry file required for your operating system. Go to the `microsoft-oc-client` folder in the UC Connector installation, and select one of the following registry files:

- `mocAppLync`—For Lync / Skype for Business on 32-bit systems.
- `mocAppLync64`—For Lync Lync / Skype for Business on 64-bit system.

2. Double click on the relevant file for the Registry entries to be updated.

3. Alternatively, on the Knowledge Worker machine (where the Lync / Skype for Business client is installed), open the Windows Registry Editor. Click `Start > Run > Regedit` and navigate to the path that you found in Step 1.

4. Repeat this process for every Knowledge Worker client machine in your deployment.

Next Steps:

1. Set user-auto-registration to `true`. This enables automated login for all Knowledge Workers.

2. Secured mode is mandatory for integrations with Microsoft Lync.

- For TLS, see Enabling Secure Communication.

- For push presence status functionality with Lync, Mutual Transport Layer Security (MTLS) is required.

See Enabling Secure Communication. 3. Once secured mode is configured, you must integrate the UC Connector deployment with Genesys Routing. See Integrating with Genesys Routing.

Adding Authorized Hosts to Microsoft

 This procedure involves adding UCC hosts as an Authorized Host in the installation. If the UCC host should not be authorized, you may want to enable Kerberos security instead. For details, see the *UC Connector 8.0.3 Integration Deployment Guide*, Trusted Host.

Security Procedures

For procedures, see the *UC Connector 8.0.3 Lync Integration Deployment Guide*, Security Procedures. That guide contain the following procedures, which apply to both Lync and Smart Link:

- Adding UCC Host as Trusted Host in Lync
- Generating the Client Certificate
- Generating the Server Certificate Using Skype for Business Management Shell
- Generating_the Server Certificate Using Microsoft Management Console
- Generating the Server Certificate using Microsoft Management Console or CA Web Access
- Generating the Front End Server Certificate
- Modifying Command Line Arguments for MTLS
- Enabling Kerberos Security Between UCC and Lync Skype for Business
- Configuring Kerberos Security in Active Directory
- Creating a Password for Kerberos Security
- Exporting the Trusted Certificate from the Lync Skype for Business Host
- Adding the Certificate to the UC Connector Installation
- Creating the Configuration File for Kerberos Security
- Configuring a Secure SIP Port
- Modifying Command Line Parameters for TLS

Configuring the Routing Strategies

This section describes a few sample Universal Routing Server (URS) routing strategies, as configured in Interaction Routing Designer (IRD), which can be used to deliver interactions from an agent to the Knowledge Worker— including negotiation of the PreviewInteraction protocol for delivering the Preview Notification.

> **Important**
>
> This section does not provide detailed step-by-step instructions for designing routing strategies, but instead gives samples and key information that you can work from. If you need detailed information about using IRD, see the *Universal Routing 8.1 Deployment Guide*.

This section contains the following topics:

> **Important**
>
> Although Genesys now offers other and more advanced routing configuration tools, IRD is still required to configure the UC Connector, since it's the only tool capable of setting up the Custom Server included into the UC Connector.

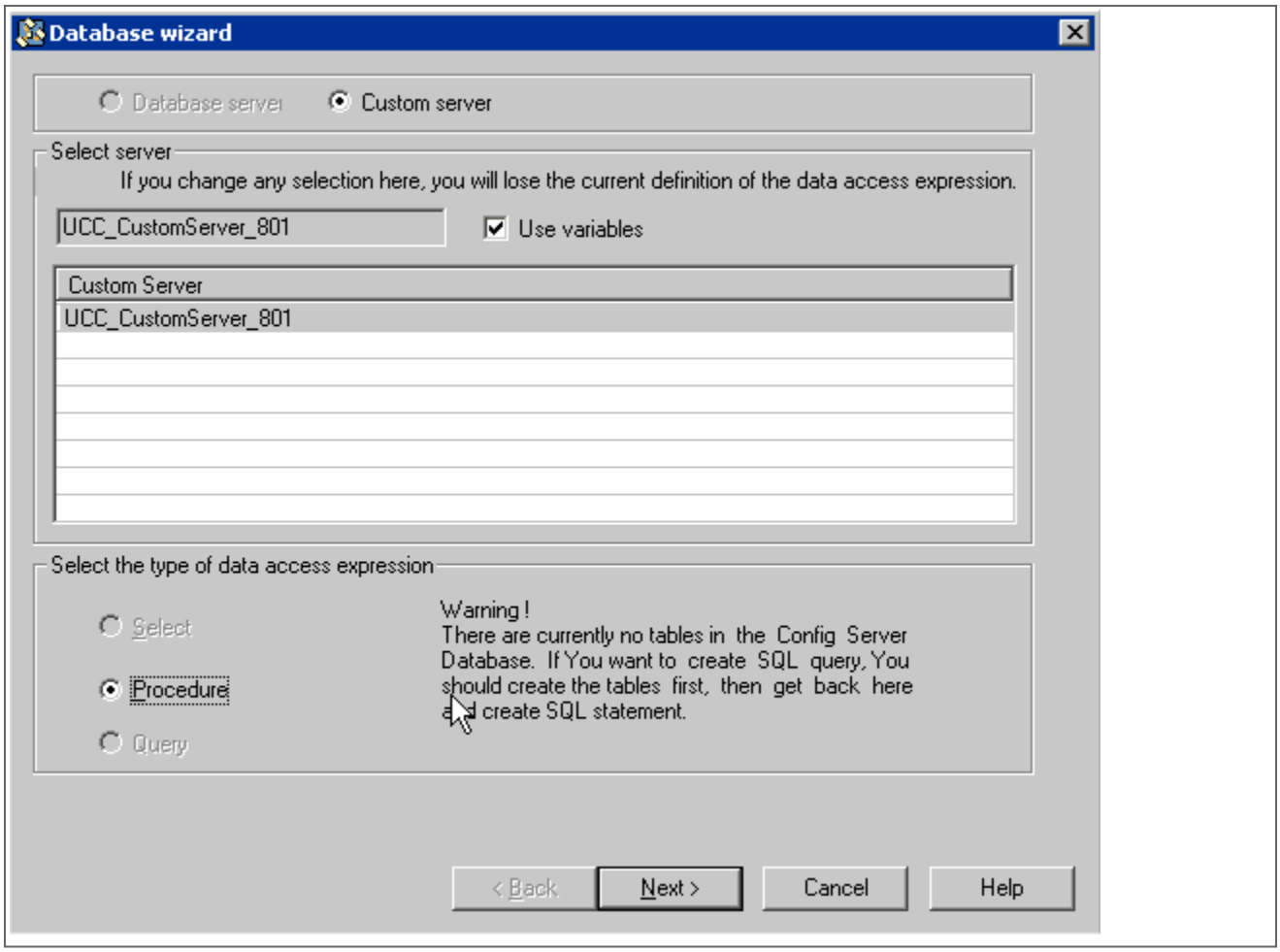
About the Key Routing Blocks

The following table gives an overview of the main blocks that are used in the configuration of the sample routing strategies described in this section. For additional information on these blocks, see the *Interaction Routing Designer Help*.

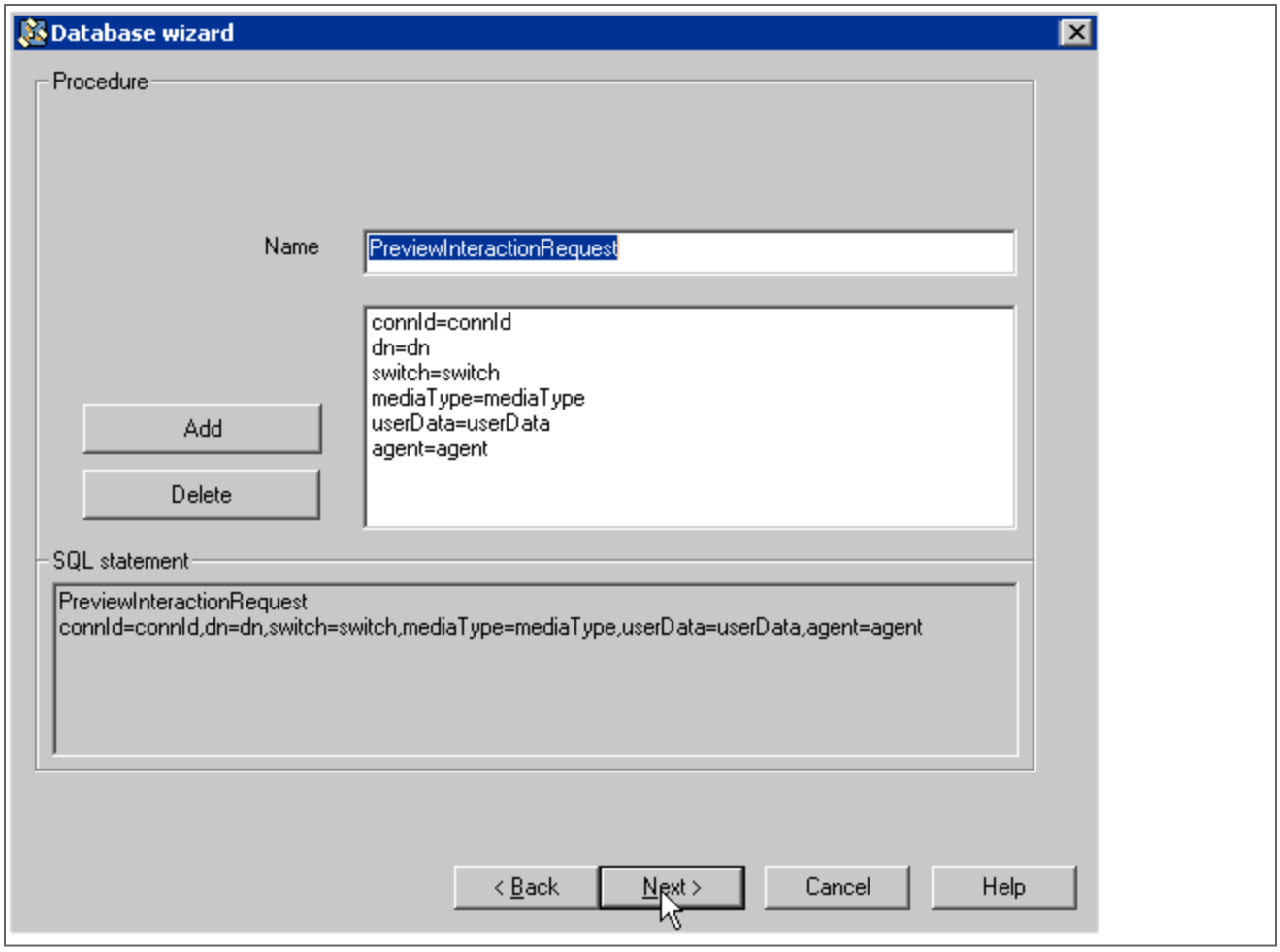
Routing Block	Key Action
Attach data block	Used for adding UserData for the call, which will include any key-value pairs (KVPs) sent by the agent. For example, a KVP that: • Adds agent Notes on the interaction. • Specifies a particular KW to target for this call. **Limitation:** For agent notes that will appear in the Preview window, the text cannot contain a single (') mark. Universal Routing Server (URS) does not process this quotation mark as regular text.
SelectDN block	Used for building the expression that will choose the DN. • Point to the Stat Server instance installed in your environment.
BlockDN	Used for environments with multiple URS instances. BlockDN makes the Target DN selected by this strategy unavailable for the duration specified in this block, so that other URS instances do not attempt to route interactions to this DN.
Database blocks	These are the key blocks for the Preview Interaction. When configuring this block, you will: • Connect the strategy to the Custom Server module built into the UC Connector. • Specify the `PreviewInteraction` protocol message to be sent to the Custom Server. For example, `PreviewInterationRequest`, which asks Custom Server to initiate the preview. • Specify how to process the results that come back from the Custom Server. **Sample Screenshots** For some sample screenshots of the Database Wizard, see PreviewInteractionRequest Database Block. **About The Protocol Formats** For a list of formats to be used with the various PreviewInteraction protocol messages, see About the Preview Interaction Protocol.

PreviewInteractionRequest Database Block

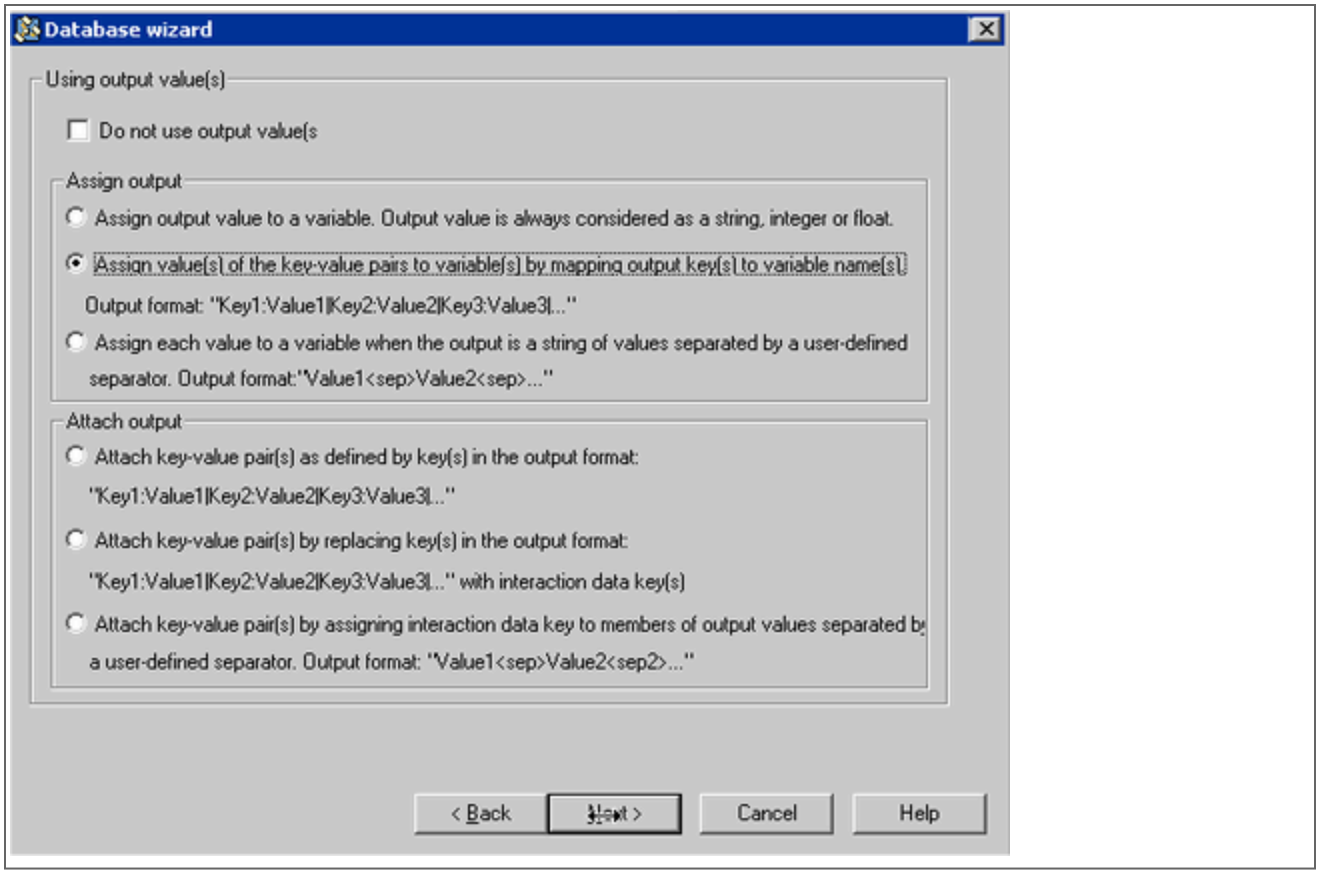
The following figures show sample configuration screens from the database wizard for the `PreviewInteractionRequest` Database Block.



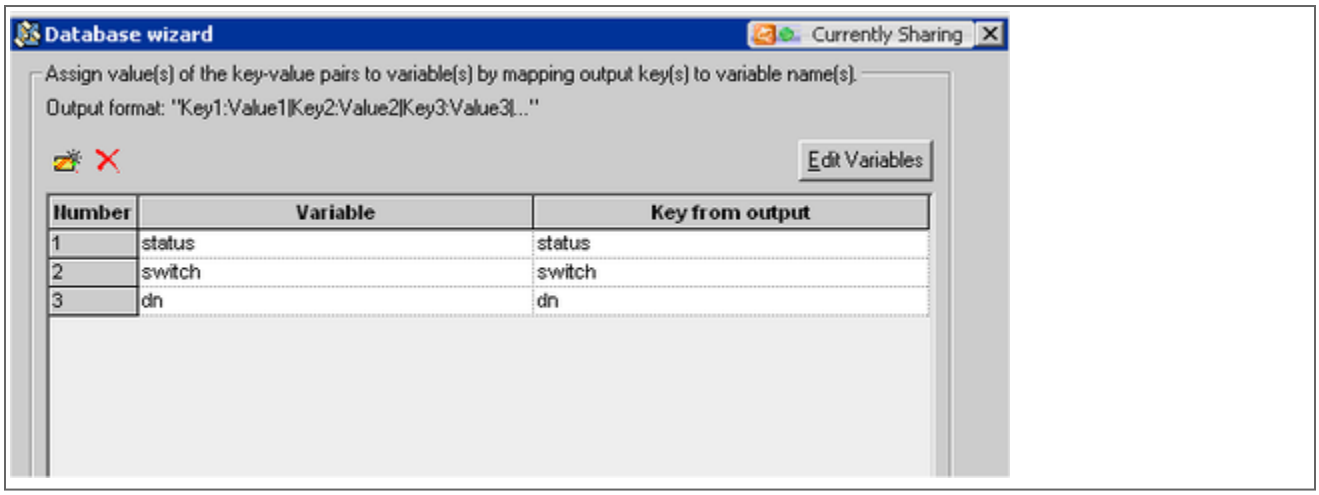
1. Select Customer Server



2. Configure the PreviewInteractionRequest Message



3. Assigning Values to the Results from Custom Server



4. Mapping KVPs to Variables

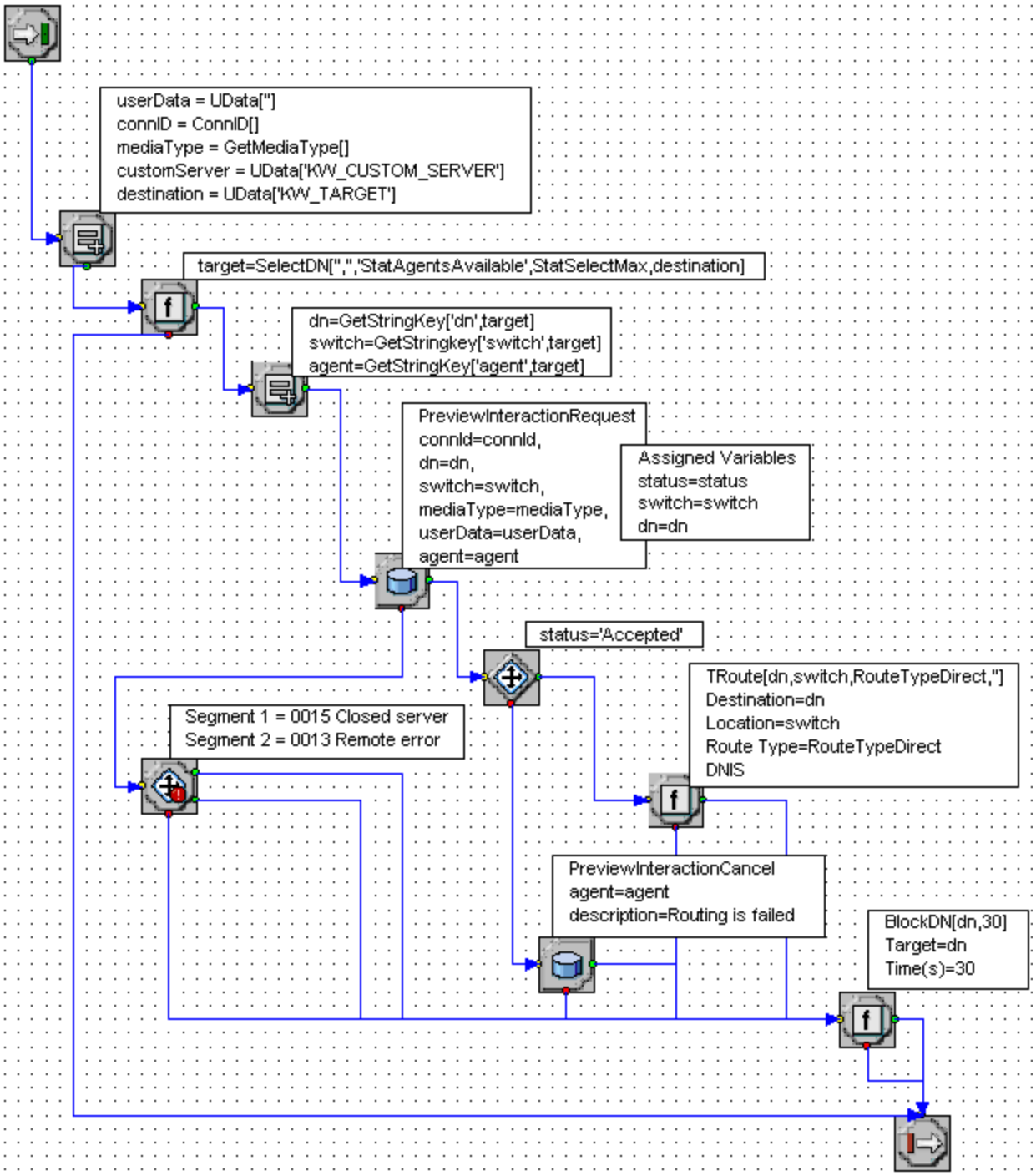
About the Preview Interaction Protocol

The following table shows the various `PreviewInteraction` protocol messages and the formats that go along with them.

Message	Format
PreviewInteractionRequest Initiates the Preview Interaction with the targeted Knowledge Worker.	agent connId dn mediaType switch userData
PreviewInteractionCancel Indicates to the Knowledge Worker that the interaction is canceled.	Contact ThisDN ConnID OtherDN MediaType UserData Message Status StatusMessage
PreviewInteractionMultiple Initiates the Preview Interaction with the Knowledge Worker group. This acts like a broadcast to all the agents in the group.	connId—Used as a key for this interaction, and added to any ICO reporting messages. mediaType—Media type as assigned by T-Server/SIP Server. userData—Used for display, this may include the filter third-party window key. targets—A list of agents found from a source (for example, Stat Server). The default delimiter "|" should be replaced with "^".

Routing to a Particular Knowledge Worker

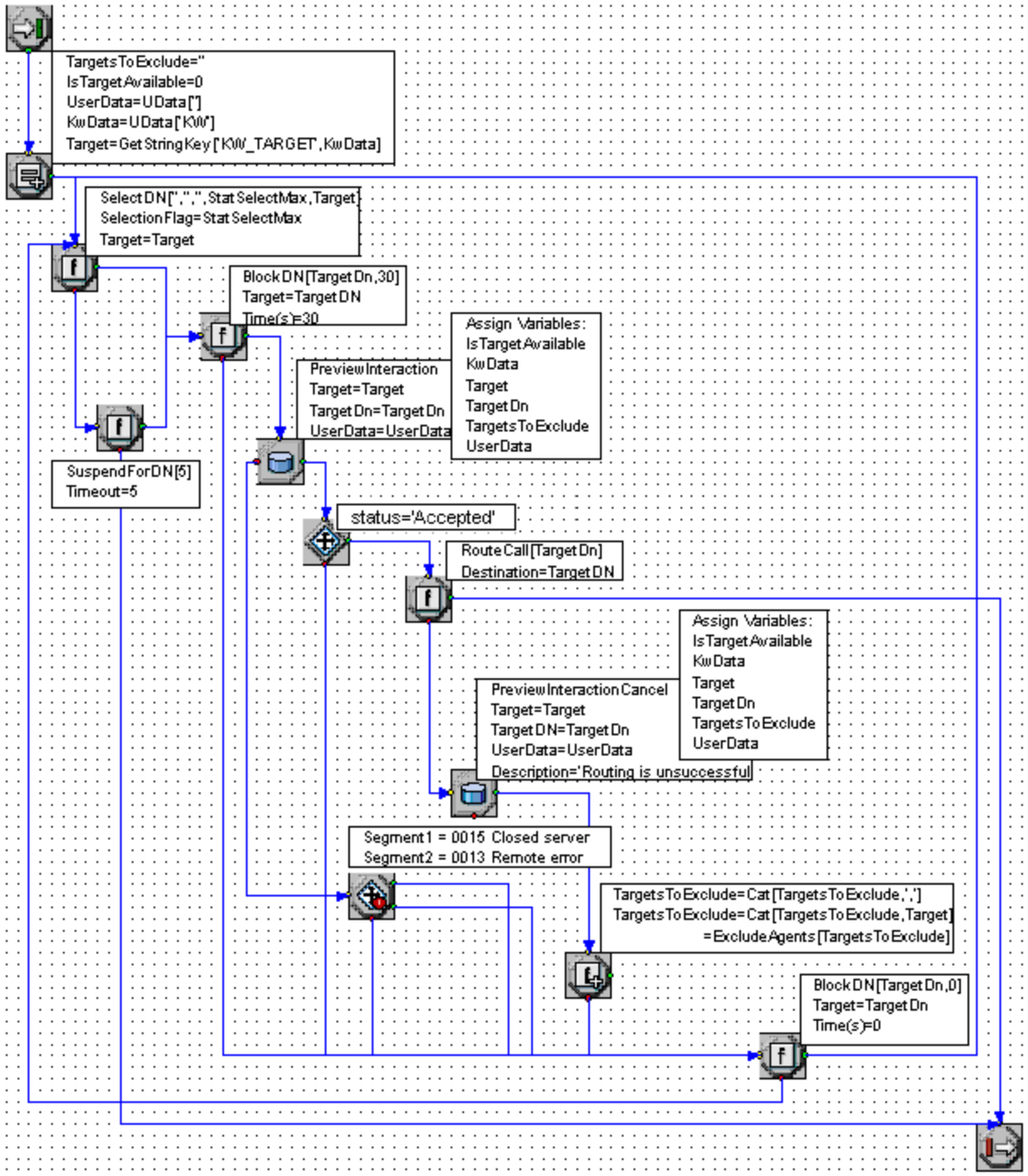
The following shows a sample strategy that routes a call to a particular Knowledge Worker selected by the agent.



For details about the call flow that this strategy supports, see Contact Center to Knowledge Worker.

Routing with Round-Robin Selection

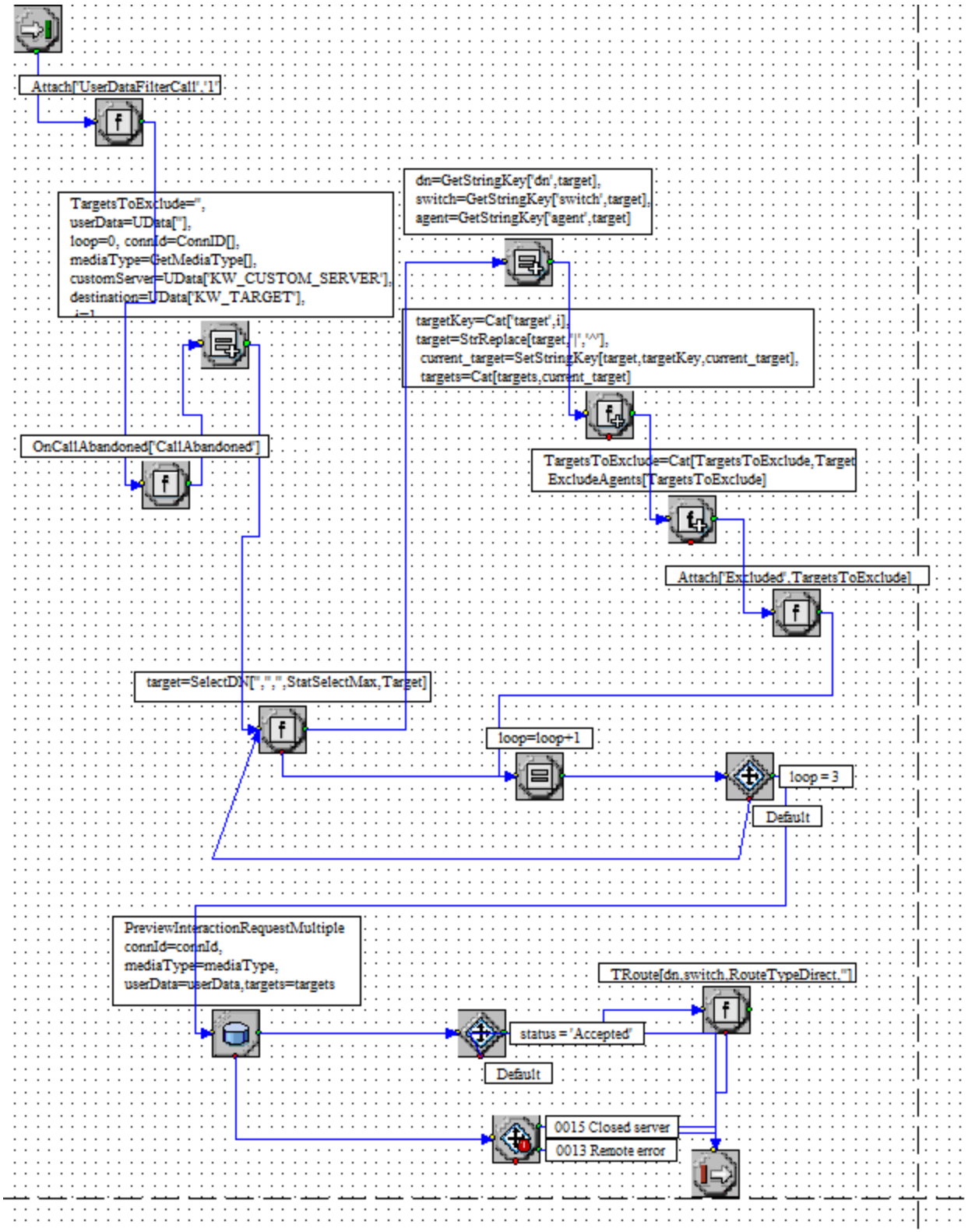
The following shows a sample strategy that routes a call to an available Knowledge Worker using a round-robin selection method.



For details about the call flow that this strategy supports, see Contact Center to Knowledge Worker.

Routing with Broadcast Preview

The following shows a sample strategy that broadcasts preview notifications simultaneous to a set of Knowledge Workers.


Attach['UserDataFilterCall','1']
TargetsToExclude='',
userData=UData[''],
loop=0, connId=ConnID[],
mediaType=GetMediaType[],
customServer=UData['KW_CUSTOM_SERVER'],
destination=UData['KW_TARGET'],
dn=GetStringKey['dn',target],
switch=GetStringKey['switch',target],
agent=GetStringKey['agent',target]
targetKey=Cat['target',i],
target=StrReplace[target,'|','^'],
current_target=SetStringKey[target,targetKey,current_target],
targets=Cat[targets,current_target]
OnCallAbandoned['CallAbandoned']
TargetsToExclude=Cat[TargetsToExclude,Target
ExcludeAgents['TargetsToExclude]
Attach['Excluded',TargetsToExclude]
target=SelectDN['','',StatSelectMax,Target]
loop=loop+1
loop = 3
Default
PreviewInteractionRequestMultiple
connId=connId,
mediaType=mediaType,
userData=userData,targets=targets
TRoute[dn,switch,RouteTypeDirect,'']
status = 'Accepted'
Default
0015 Closed server
0013 Remote error

UC Connector High Availability Deployment

This section describes the steps required to deploy primary and backup UC Connector instances in a High Availability (HA) configuration, using a virtual IP-based architecture provided by Windows Network Load Balancer (NLB).

Note: The information in the sections below present a Network Load Balancer (NLB) cluster approach rather than the recommended IP Address Takeover Approach.

This section contains the following topics:

For HA architecture diagrams, see High Availability in UCC Connector Overview and Architecture.

About HA Through Windows NLB

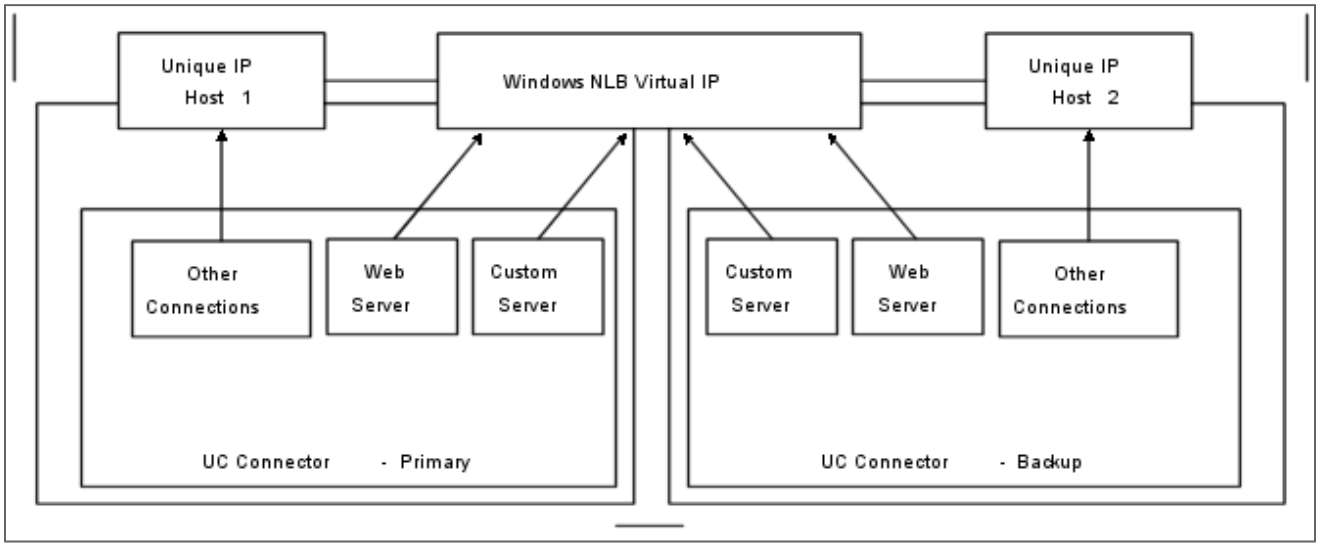
Note: The information below presents an NLB cluster approach rather than the recommended IP Address Takeover Approach.

Windows Network Load Balancer (NLB) is used to provide high-availability for the following connections:

- The interaction web page on the Knowledge Worker desktop—the custom UC Connector tab—and the UC Connector web port.
- Universal Routing Server (URS) and the UC Connector Custom Server port.

The ports used for both of these connections must be switched over as part of the Window NLB mechanism, in order to ensure that both the Preview Notification method and the custom UC Connector tab continue to operate after a switchover from primary to backup instance of UC Connector.

When configured for HA, the HTTP messages from the UC platform are sent to the Windows NLB cluster—using the virtual IP (VIP) address—and the Windows NLB cluster then delivers this traffic to the individual UC Connector instance, according to its unique IP address.



This figure shows an overview of how HA-enabled UC Connector instances can be deployed. While web communication with the UC platform uses a single Virtual IP address to communicate with UC Connector, Genesys Management and Configuration Layer components and T-Library clients use the unique IP address for communication with the UC Connector and the Local Control Agent (LCA) installed at each UC Connector host.

When a failure occurs, Genesys performs a switchover of the failed primary UC Connector instance to the backup instance. The Genesys Management Layer uses a Windows NLB utility (`wlbs.exe` or

`nlb.exe`) to enable and disable the web ports used by UC Connector. To start this utility, special control scripts (.bat files) are required. These scripts are triggered when alarm conditions in the UC Connector log events are generated as the UC Connector instances switch modes from primary to backup.

How The Switchover Works

Genesys recommends an IP Address Takeover approach rather than using an NLB cluster configuration approach as in previous UCC releases. For a primary UC Connector application failure workflow, see the *Framework 8.1 SIP Server High-Availability Deployment Guide*, Deploying IP Address Takeover.

Note: The information below presents an NLB cluster approach rather than the recommended IP Address Takeover Approach.

The following steps describe a primary UC Connector failure workflow for a Windows NLB cluster configuration.

1. The primary UC Connector (UC Connector 1) fails.
2. The LCA detects the primary UC Connector application failure and reports it to the SCS.
3. Through the LCA, SCS instructs the backup UC Connector (UC Connector 2) to go into primary mode.
4. When backup UC Connector (UC Connector 2) goes into primary mode, a log event occurs, which indicates that the backup UC Connector has changed to primary mode. The log event triggers an associated alarm condition.
5. The alarm condition triggers associated alarm reaction scripts.
6. The alarm reaction scripts trigger the associated VIP control script application objects.
7. The control scripts run Windows NLB utilities that disable the Web and Custom Server ports on the primary UC Connector and enable the web port on the backup UC Connector.

Deploying HA Instances of UC Connector

The following table provides an overview of the tasks you must complete to deploy a highly available configuration of UC Connector in a Windows NLB cluster environment.

Note: The information below presents an NLB cluster approach rather than the recommended IP Address Takeover Approach.

Step	Related procedures and Information
Ensure that your system meets the deployment prerequisites.	See Windows NLB Cluster HA Deployment Prerequisites.
Configure Windows Network Load Balancing (NLB) Parameters.	Use the Windows NLB Configuration Manager to configure load balancing parameters, as described in Configuring Windows NLB cluster parameters.
UC Connector HA Deployment.	Complete the following procedures to deploy your UC Connector HA configuration: 1. Configuring the primary UC Connector (Windows NLB cluster). 2. Configuring the Backup UC Connector (Windows NLB cluster). 3. Configuring HA for Custom Server. 4. Creating Virtual IP Interface control scripts (Windows NLB cluster). Virtual IP (VIP) interface control scripts are used to enable and disable UC Connector ports when UC Connector change modes. 5. Creating application objects for VIP control scripts (Windows NLB cluster). Application objects allow the VIP control scripts to be run as applications. 6. Creating alarm reaction scripts (Windows NLB cluster). Alarm reaction scripts are called when HA-related alarm conditions are activated. 7. Creating alarm conditions (Windows NLB cluster). When an HA-related log event occurs, such as a log event that records when a UC Connector changes from primary to backup mode, Alarm Conditions are activated. 8. Testing alarm conditions (Windows NLB cluster).

UC Connector HA Deployment Procedures

Note: The information below presents an NLB cluster approach rather than the recommended IP Address Takeover Approach.

Windows NLB Cluster HA Deployment Prerequisite

Windows NLB Cluster HA Deployment Prerequisites

- Two separate physical host computers, one for the primary UC Connector and one for the backup UC Connector.
- Software requirements:
  - UC Connector must be installed and configured on both host computers.
  - A Local Control Agent (LCA) must be installed and configured on both host computers.
  - A Message Server must be installed.
- Networking requirements:
  - A name resolution method such as Domain Name System (DNS), DNS dynamic update protocol, or Windows Internet Name Service (WINS) is required.
  - Both host computers must be members of the same domain.
  - A domain-level account that is a member of the local Administrators group is required on each host computer. A dedicated account is recommended.
  - Each host computer must have a unique NetBIOS name.
  - A static IP address is required for each of the network interfaces on both host computers. Server clustering does not support IP addresses assigned through DHCP.
  - A dedicated network switch or separate VLAN for cluster adapters is recommended to reduce switch flooding that may be caused by Windows Network Load Balancing.
  - Access to a domain controller is required. If the cluster service is unable to authenticate the user account used to start the service, the cluster may fail. It is recommended that the domain controller be on the same Local Area Network (LAN) as the cluster to ensure availability.
  - Each node must have at least two network adapters; one for the connection to the public network and the other for the node-to-node private cluster network.
  - A dedicated private network adapter is required for HCL certification.
  - All nodes must have two physically independent LANs or Virtual LANs for public and private communication.
  - If you are using fault-tolerant network cards or network adapter teaming, verify that firmware and drivers are up to date and check with your network adapter manufacturer for Windows NLB cluster

compatibility.

Configuring Windows NLB cluster parameters

Configuring Windows NLB cluster parameters

Purpose: To configure Windows Network Load Balancing (NLB) parameters required for a UC Connector HA deployment.

1. Open the Microsoft Network Load Balancing Manager tool.

2. Select a cluster host and open the `Cluster Properties` window.

3. On the `Cluster Parameters` tab, select the `Cluster operation mode`. You can choose `Unicast` (default) or `Multicast` mode. For information about Windows NLB Unicast and Multicast modes, refer to your Microsoft Windows Server documentation.

4. Click the `Port Rules` tab.

- Specify a `Port range` that includes the port that you will assign as the web port.
- In the `Protocols` section, select `Both` (for both UDP and TCP).
- In the `Filtering mode` section, select `Multiple host` and set `Affinity` to `None` or `Single`.
- Set `Load weight` to `Equal`.

5. Click the `Host Parameters` tab. In the `Initial host state` section, set the `Default state` to `Stopped`.

For more information about Windows NLB cluster parameters, refer to your Microsoft Windows Server documentation.

Configuring the primary UC Connector (Windows NLB cluster)

Configuring the primary UC Connector (Windows NLB cluster)

Purpose: To configure the primary UC Connector Application object for high availability.

1. Stop the UC Connector service on the primary and backup hosts. Genesys UC Connector services can be stopped using the `Windows Services` dialog box.

2. Change the HTTP host to the virtual IP address for the Windows NLB cluster. In the UC Connector

Application object, go to the Start Info tab and modify the Command Line Arguments as follows:
-ucc_host <Virtual_IP_address_of_NLB_cluster>

3. Make sure that the HTTP port is one that can be shared on both primary and backup UC Connector hosts. To check the primary HTTP port, go to the Command Line Arguments and take note of the port number specified by the following parameter:
-http_port <shared_port_number>

> **Important**
>
> Modifying the Command Line Arguments is suggested for enabling HA on existing UC Connector instances only. If you are deploying new instances of UC Connector for HA, you can specify these Host and Port parameters in the User Parameters page of the Installation wizard. The same rules apply:
>
> - Set ucc_host for both primary and backup to the same virtual IP address of the Windows NLB cluster.
> - Set http_port for both primary and backup to the same value.

4. Open Configuration Manager.

5. Select the Applications folder and right click the UC Connector Application object that you want to configure as the primary UC Connector. Select Properties.

6. Click the Options tab, Log section.

- Set the standard option to network.
- Set the verbose option to all.

> **Important**
>
> Setting logging options is required for this UC Connector HA configuration. HA-related log events pass through the Message Server to activate alarm conditions and reaction scripts necessary for managing failover between the primary and backup instances of UC Connector.

- Click Apply to save the configuration changes.

7. Click the Server Info tab.

- Set the Redundancy Type to Warm Standby.
- For the Backup Server option, select the UC Connector Application object you want to use as the backup UC Connector. If necessary, browse to locate the backup UC Connector Application object.
- Click Apply to save the configuration changes.

8. Click the Start Info tab.

- Select Auto-Restart.
- Click Apply to save the configuration changes.

9. Click the Connections tab, and then click Add to create a connection to the Message Server.

10. Click Apply and OK to save the configuration changes.

Configuring the Backup UC Connector (Windows NLB cluster)

Configuring the Backup UC Connector (Windows NLB cluster)

Purpose: To configure the backup UC Connector Application object for high availability.

1. Stop both primary and backup UC Connectors if they are running. You can stop the UC Connector service using the Windows Services dialog.

2. Change the HTTP host to the virtual IP address for the Windows NLB cluster. In the UC Connector Application object, go to the Start Info tab and modify the Command Line Arguments as follows:
`-ucc_host to ucc_host <Virtual_IP_address_of_NLB_cluster>`

3. Assign the same HTTP port as used in the primary UC Connector host. Go to the Command Line Arguments and enter the shared port number in the following parameter:
`-ucc_port <shared_port_number>`

> **Important**
>
> Modifying the Command Line Arguments is suggested for enabling HA on existing UC Connector instances only. If you are deploying new UC Connectors for HA, you can specify these Host and Port parameters in the User Parameters page of the Installation wizard. The same rules apply:

- Set `ucc_host` for both primary and backup to the same virtual IP address of the NLB cluster.
- Set `http_port` for both primary and backup to the same value.

4. Open Configuration Manager.

5. Select the `Applications` folder and right click on the UC Connector application object that you want to configure as the backup UC Connector.

6. Click the `Start Info` tab.

- Select `Auto-Restart`.
- Click `Apply` to save the configuration changes.

7. Click the `Options` tab, Log section.

- Set the `standard` option to `network`.
- Set the `verbose` option to `all`.

Important

Setting Log options is required for this UC Connector HA configuration. HA related log events pass through the Message Server to activate alarm conditions and reaction scripts necessary for managing failover between the primary and backup UC Connectors.

- Click `Apply` to save the configuration changes.

8. Click `Apply` and `OK` to save the configuration changes.

Configuring HA for Custom Server

Configuring HA for Custom Server

Purpose: To complete the configuration steps required to support integration of Custom Server with the Windows NLB virtual IP address.

Custom Server does not need to be deployed in an HA pair. However, the Custom Server application must be configured on a host created for the virtual IP address.

1. In Configuration Manager, create a new Host object, specifying the IP address that you configured as the virtual IP for the NLB cluster.

2. Create a new Custom Server Application object, specifying this virtual IP-based Genesys host. For details about creating this object, see Creating the Custom Server Application object.

Creating Virtual IP Interface control scripts (Windows NLB cluster)

Creating Virtual IP Interface control scripts (Windows NLB cluster)

Purpose: To create Virtual IP (VIP) control scripts for each of the UC Connectors. Each UC Connector host requires VIP control scripts to enable or disable the Virtual IP (VIP) interface on the host computer when the role of the UC Connector changes. The scripts are used to enabled the VIP interface on the host where the UC Connector is in primary mode and disabled the VIP interface on the host where the UC Connector is in backup mode.

In this procedure, you will create the following four VIP Control Scripts:

- `uc_connector_prime_up.bat`: Enables the VIP interface on the primary host.
- `uc_connector_prime_down.bat`: Disables the VIP interface on the primary host
- `uc_connector_backup_up.bat`: Enables the VIP interface on the backup host
- `uc_connector_backup_down.bat`: Disables the VIP interface on the backup host

> **Important**
>
> You can use the script names listed above or you can specify your own script names. If you get security-related error messages for these scripts, you may need to add a password parameter to the `wlbs.exe` commands. For example, add `/PASSW <your_password>` to the command: `wlbs.exe enable 5060 123.45.68.90:2 /PASSW yourpass123`

1. On the primary UC Connector host, create a batch file named `uc_connector_prime_up.bat` and

input the following commands:

```
@title Enable Virtual IP Control Script
@echo ************** Primary VIP Enabled ************** >> vip1.log
@echo %time% >> vip1.log
wlbs.exe start uccluster:1 >> vip1.log
wlbs.exe enable <your_web_port> uccluster:1 >> vip1.log
wlbs.exe enable <your_Custom_Server_port> uccluster:1 >> vip1.log
wlbs.exe disable <your_web_port> uccluster:2 >> vip1.log
wlbs.exe enable <your_Custom_Server_port> uccluster:2 >> vip1.log
exit
```

2. On the primary UC Connector host, create a batch file named `uc_connector_prime_down.bat` and input the following commands:

```
@title Disable Virtual IP Control Script
@echo *************** Primary VIP Disabled ************ >> vip1.log
@echo %time% >> vip1.log
wlbs.exe disable <your_web_port> uccluster:1 >> vip1.log
wlbs.exe disable <your_Custom_Server_port> uccluster:1 >> vip1.log
ping –n 2 127.0.0.1
exit
```

3. On the backup UC Connector host, create a batch file named `uc_connector_backup_up.bat` and input the following commands:

```
@title Enable Virtual IP Control Script
@echo ************** Backup VIP Enabled *************** >> vip2.log
@echo %time% >> vip2.log
wlbs.exe start uccluster:2 >> vip2.log
wlbs.exe enable <your_web_port> uccluster:2 >> vip2.log
wlbs.exe enable <your_Custum_Server_port> uccluster:2 >> vip2.log
wlbs.exe disable <your_web_port> uccluster:1 >> vip2.log
wlbs.exe disable <your_Customer_Server_port> uccluster:1 >> vip2.log
exit
```

4. On the backup UC Connector host, create a batch file named `uc_connector_backup_down.bat` and input the following commands:

```
@title Disable Virtual IP Control Script
@echo ***************** Backup VIP Disabled ************ >> vip2.log
@echo %time% >> vip2.log
wlbs.exe disable <your_web_port> uccluster:2 >> vip2.log
wlbs.exe disable <your_Custom_Server_port> uccluster:2 >> vip2.log
ping –n 2 127.0.0.1
exit
```

> **Important**
>
> The scripts above include commands to log script execution. The logs are created in the directory where the script is located.

Creating application objects for VIP control scripts (Windows NLB

cluster)

Creating application objects for VIP control scripts (Windows NLB cluster)

Purpose: To create the four “Third Party Server” application objects listed below; one for each of the VIP control scripts created in Creating Virtual IP Interface control scripts (Windows NLB cluster).

- uc_connector_Prime_Up
- uc_connector_Prime_Down
- uc_connector_Backup_Up
- uc_connector_Backup_Down

Creating application objects for the VIP control scripts allows the scripts to be run as applications within the Genesys framework.

Prerequisites
The `Third Party Server` template must already exist in the `Application Templates` folder. If not, right-click this folder, select `Import Application Template`, and import the `Third Party Server` template from your Management Framework CD.

1. In Configuration Manager, select `Environment > Applications`.

2. Right click and select `New > Application`.

3. Select the `Third Party Server` template from the `Application Templates` folder and click OK.

4. On the `General` tab, enter a name for the application object.

> **Important**
> You can use the application object names listed above or you can specify your own.

5. Select the `Server Info` tab.

- Select the host name of the UC Connector where the corresponding VIP control script is located.
- If necessary, specify a valid communication port number using the `Edit Port` option.

> **Important**
>
> This port will not be used. However, because of the way the application works, the port may have to be specified in order to save the application.

6. Select the `Start Info` tab.

- Set the `Working Directory` to the location of the control script and enter name of the script in the `Command Line` field.
- If you are configuring an application object that disables a VIP interface (`uc_connector_Prime_Down` and `uc_connector_Backup_Down`), set the `Timeout Startup` value to 8.

7. Repeat the steps in this procedure to create application objects for each of the four VIP control scripts.

Creating alarm reaction scripts (Windows NLB cluster)

Creating alarm reaction scripts (Windows NLB cluster)

Purpose: To create alarm reaction scripts for HA-related alarm conditions. When an HA-related alarm condition occurs, the associated alarm reaction script is run. Alarm reaction scripts are configured to call the application objects you created in Creating application objects for VIP control scripts (Windows NLB cluster).

1. Open Configuration Manager.

2. Select `Resources > Scripts`.

3. Right click and select `New > Script`.
4. Create four scripts, one for each of the applications objects you created earlier. Select `Alarm Reaction` as the `Script Type`. For example, create the following four Alarm Reaction scripts:

- AR_Script_Prime_Up
- AR_Script_Prime_Down
- AR_Script_Backup_Up
- AR_Script_Backup_Down

5. For each of the Alarm Reaction scripts, use the Alarm Reaction Wizard to configure the `Alarm Reaction Type`.

- Select an Alarm Reaction script and right-click to open the `Alarm Reaction Wizard` (select `Wizard > Configure`).
- In the Alarm Reaction Wizard, click `Next`.
- In the `Alarm Reaction Type` dialog, select `Start a specified application` and click `Next`.
- Browse to select the corresponding application object. For example, for the `AR_Script_Prime_Up` Alarm Reaction script, select the `uc_connector_Prime_Up` Third Party Server application object.
- Repeat the previous steps to configure each of the Alarm Reaction scripts you created.

Creating alarm conditions (Windows NLB cluster)

Creating alarm conditions (Windows NLB cluster)

Purpose: Alarm Conditions are required to handle log events that occur when a UC Connector changes its mode from primary to backup or backup to primary. When you create the Alarm Conditions, you configure them to trigger the alarm reaction scripts you created in Creating alarm reaction scripts (Windows NLB cluster).

Four alarm conditions are required for your HA configuration, two for the primary UC Connector application and two for the backup. Refer to the procedure that follows to create the alarm conditions required for your configuration.

Alarm Conditions for Warm Standby

Name	Log Event ID	Application	Reaction Script
ALRM_Primary_down_4560	4560	<Primary UC Connector>	AR_Script_Prime_Down
ALRM_Primary_up_4562	4562	<Primary UC Connector>	AR_Script_Prime_Up
ALRM_Backup_down_4560	4560	<Backup UC Connector>	AR_Script_Backup_Down
ALRM_Backup_up_4562	4562	<Backup UC Connector>	AR_Script_Backup_Up

1. Open Configuration Manager.

2. Navigate to the `Environment > Alarm Conditions` folder.

3. Right click and select `New > Alarm Condition` to open the `New Alarm Condition Properties` dialog.

4. On the `General` tab:

- Enter a `Name` for the `Alarm Condition`.
- Optionally, enter a description.

- For the Category value, select Critical.
- Set Cancel Timeout to 3.

5. On the Detect Event tab:

- Set the Log Event ID.
- Set the Selection Mode to Select By Application.
- For the Application Name field, click the folder icon to browse for the UC Connector Application object. If you are creating an Alarm Condition for the primary UC Connector, select the primary UC Connector application object. If you are creating an Alarm Condition for the backup UC Connector, select the backup UC Connector application object.

6. Click OK.

7. On the Reaction Scripts tab, add the alarm reaction script as defined according to the table at the beginning of this procedure.

8. Repeat the steps in this procedure to create each of the four Alarm Conditions for your hot or warm standby configuration.

Testing alarm conditions (Windows NLB cluster)

Testing alarm conditions (Windows NLB cluster)

Purpose: To verify that the alarm conditions work as expected.

1. Open the Solution Control Interface (SCI).

2. Under Alarm Conditions, select the ALRM_Primary_4561 Alarm Condition, right click, and click Test. The ALRM_Primary_4561 Alarm Condition indicates that the primary UC Connector is in backup mode which triggers the alarm reaction scripts that disable the Virtual IP interface at the primary UC Connector and disable the VIP interface at the backup UC Connector.

3. Use an wlbs queryport <your_web_port> or <your_Custom_Server_port> command to verify that the Virtual IP interface is active on the backup UC Connector and that the Virtual IP interface is inactive on the primary UC Connector.

Configuration Options

This section describes the configuration options that are modified during the procedures included in this guide. Options are organized according to component type, and include the following:

- UC Connector Application Options
- Other Options
- Switch/DN Level Options

UCC Application Options

Configure these options in Genesys Administrator or Configuration Manager.

UC-Connector Section

Configure these options in the `UC-Connector` section of the UCC `Application` object.

audio-on-preview

Default Value: No default value
Valid Values: URL or file name
Changes Take Effect: Immediately
Specifies the location of the audio file that will be played when the Preview pop-up window is displayed.

audio-on-ring

Default Value: No default value
Valid Values: URL or file name
Changes Take Effect: Immediately
Specifies the location of the audio file that will be played when the Ringing pop-up window is displayed.

> **Important**
> The `audio-on-ring` and `audio-on-preview` options are only applicable when UC Connector is used in non-gateway mode (presence-gateway-mode is set to `false`).

chat-title

Default Value: `Chat`
Valid Values: Any string
Changes Take Effect: Immediately
Specifies the name used for the Chat window. By default, the window uses the name `Chat`. You can use any other name for this section by changing the value of this option.

chat-consult-title

Default Value: `Consulting Chat`
Valid Values: Any string
Changes Take Effect: Immediately
Specifies the name used for the Chat window that opens for consultation chat interactions. By

default, the window uses the name `Consulting Chat`. You can use any other name for this section by changing the value of this option.

dnd-off-timeout

Default Value: 300000
Valid Values: Any positive integer
Changes Take Effect: Immediately
Specifies the duration, in milliseconds, that UC Connector will set an agent to Do-Not-Disturb (DND) if the Knowledge Worker rejects the Preview Notification.

> **Important**
>
> If UC Connector receives an agent state change event from SIP Server/T-Server (`EventAgentReady`, `EventAgentNotReady`, or `EventAgentLogout`) while the timer is active, then the timer will be cancelled.

enable-logout-menu

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether the log out menu item is displayed in the UC Connector GUI for the particular user, if no UC system configuration annexes are present in the `Person` configuration in CME.

enable-preview-reporting

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Related Feature: How It Works Reporting Events
When set to `true`, UC Connector creates records in ICON for the interaction Preview events accept, reject, timeout, or withdrawn due to another user in the group accepting the interaction.

> **Warning**
>
> Enabling this option will cause extra network traffic from UC Connector to T-Server/SIP Server, so you should check your network limits.

gla-call-match-window

Default Value: `4000`
Valid Values: `20001500`
Changes Take Effect: Immediately
Specifies the time window, in milliseconds, in which a T-Lib call is matched against a Lync call reported by GLA. Lync and T-Lib call events do not have a common reference and can only be matched by co-incidence in time.

gla-kpl-time

Default Value: 30
Valid Values: 4Integer greater than the value of gla-kpl-response-time
Changes Take Effect: Immediately
Specifies the interval, in seconds, between GLA keep alive messages being sent to UC Connector.

gla-kpl-response-time

Default Value: 4
Valid Values: 3Integer less than the value of gla-kpl-time
Changes Take Effect: Immediately
Specifies the expected time, in seconds, for UC Connector to respond to the keep alive messages sent by GLA. |

help-callcontrol-url

- Default Value: No default value
- Valid Values: a valid path to an .html file
- Changes Take Effect: Immediately
- Specifies the URL path to the .html help file that appears when the user clicks the Help button on the Call Control or Preview windows. For example, if you copy the sample Call Control Help file from the CD to the UC Connector installation folder, enter a path something like the following:

```
help/callcontrol.html
```

If you do not configure this option, the Help button does not appear.

If you are hosting your help file externally, use a fully qualified URL as the value for this option. For example:

```
http://www.companyhelp.com
```

help-interaction-url

Default Value: No default value Valid Values: a valid path to an .html file
Changes Take Effect: Immediately
Specifies the URL path to the .html help file that appears when the user clicks the Help button on the Interaction window. For example, if you copy the sample Help file from the CD to the UC Connector installation folder, enter a path something like the following:

```
help/interaction.html
```

If you do not configure this option, the Help button does not appear.

If you are hosting your help file externally, use a fully qualified URL as the value for this option. For example:

```
http://www.companyhelp.com
```

help-login-url

Default Value: No default value
Valid Values: a valid path to an .html file
Changes Take Effect: Immediately
Specifies the URL path to the .html help file that appears when the user clicks the Help button on the Login screen. For example, if you copy the sample Call Control Help file from the CD to the UC Connector installation folder, enter a path something like the following:

```
help/login.html
```

If you do not configure this option, the Help button does not appear.

If you are hosting your help file externally, use a fully qualified URL as the value for this option. For example:

```
http://www.companyhelp.com
```

itx-window-close-timeout

Default Value: `9000`
Valid Values: Any positive integer
Changes Take Effect: Immediately
Specifies the length of time you want the interaction to remain open after the Knowledge Worker interaction is released or abandoned.

locale

Default Value: en
Valid Values: A two-character country code
Changes Take Effect: Immediately
Related Feature: How It Works Customized Languages
Specifies the default language to be used in the UC Connector user interface, if not otherwise specified by the integrated web browser. By default, UC Connector uses English (en) for all the labels and buttons in the user interface. To set UC Connector to a different default language, enter one of the supported two-character country codes listed in Supported Languages. If you set this option to `default`, then the language of the local operating system where the UC Connector is running will be used. If you do not configure this option at all, then English is used as the absolute default language.

login-queue

Default Value: Blank
Valid Values: A valid DN
Changes Take Effect: Immediately
Specifies the value used to populate the agent login request parameter queue. SIP Server can use this value for default routing in case of URS failure. The effects of this parameter depend on the T-Server and other solution components. See the deployment guide for your T-Server/SIP Server for information on whether it supports this feature.

popup-udata-key

Default Value: Blank

Valid Values: A string representing a User Data Key
Changes Take Effect: Immediately
If the value is blank, UC Connector will display the third-party call control window to the user for all arriving calls. If the option value contains a User Data Key, UC Connector will only display the call control window for calls with the specified User Data Key present in the User Data of the call.

> **Important**
>
> Calls delivered using the Preview window will not be suppressed, regardless of user data filer. Clicking on transaction line in the main UC Connector window will bring up the third-party call control window regardless of user data filter.

presence-gateway-mode

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector prevents sending invite messages to Lync when there is no web client UI connected for the corresponding user, and a new call or preview call is delivered. If `true`, UC Connector does not send SIP "INVITE" to Lync; otherwise, sending the invite is controlled by the invite-message option.

presence-location

Default Value: blank
Valid Values: string format, URL or file location
Changes Take Effect: Immediately
Specifies the location of the XML presence configuration file.

> **Important**
>
> - The configuration file is only reloaded when the option changes.
> - The default definitions will be used if the option is empty.
> - If the XML is not valid, the current definition in use will remain in effect.
> - If the resource directory location is specified, then all the files the `presence.xml` file requires must be in the same directory.

preview-info-keys

Default Value: `UCC_ConnId,UCC_UserId,UCC_AgentId,UCC_Reason`
Valid Values: A comma-separated list of four identifiers:
<keyname>,<keyname>,<keyname>,<keyname>
Changes Take Effect: Immediately
Related Feature: Reporting Events

Specifies the ordered list of key names used for reporting the UC Connector Preview offer parameters.

> **Important**
>
> The `preview-info-keys` values must correspond to the keys provided in the ICON option `AgentUserFields`.

preview-itx-arrival-timeout

Default Value: `9000`
Valid Values: Any positive integer
Changes Take Effect: Immediately
Specifies the length of time, in milliseconds, that the UC Connector will wait for the interaction to arrive after the Preview Notification was accepted by the Knowledge Worker.

preview-expiration-timeout

Default Value: `15000`
Valid Values: Any positive integer
Changes Take Effect: Immediately
Specifies the length of time, in milliseconds, that the UC Connector will wait for the Knowledge Worker response (accept or reject) to the Preview Notification. A countdown timer in the preview window shows how much time is remaining. If the timer runs out, the call is returned to the URS routing strategy.

preview-state-name

Default Value: `3721,UCC_Preview`
Valid Values: A string in the format <number>,<keyname>
Changes Take Effect: Immediately
Related Feature: Reporting Events
Specifies the numeric identifier and the key name of the custom state associated with the UC Connector Preview offer.

> **Important**
>
> The `preview-state-name` values must correspond to the value of the ICON option `AgentRecordUserTypes`.

preview-shortkey-accept

Default Value: Blank
Valid Values: A string in alpha-numeric or ASCII decimal number format
Changes Take Effect: After Restart
Specifies the hotkey used to accept a call when the Preview window is displayed. If left blank, the shortcut key is disabled.For details on the ASCII and alpha-numeric formats, see Configuring Hotkeys

for Interaction Preview.

> **Important**
> The Preview window must be in focus for the hotkey to function.

preview-shortkey-reject

Default Value: Blank
Valid Values: A string in alpha-numeric or ASCII decimal number format
Changes Take Effect: After Restart
The hotkey used to reject a call when the Preview window is displayed. If left blank, the shortcut key is disabled. For details on the ASCII and alpha-numeric formats, see Configuring Hotkeys for Interaction Preview.

> **Important**
> The Preview window must be in focus for the hotkey to function.

redirect-setup-enabled

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
This global option enables all users to set and enable a redirect number. This value can be overwritten by the Person-level redirect-setup-enabled option.

sync-when-logout

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Controls whether UC Connector logs in a user when only the Lync presence is available (that is, there is no independent login from a Genesys desktop client). In general, set this option to true in a back-office environment with complete Smart Link functionality. Set it to `false` when integrating with Lync Voice in the contact center.

- Also see Free Seating.

userdata-preview-format<n>

Default Value: `title: <UserData_DisplayName>, value: [UserData_Key]`
Valid Values: `title: <UserData_DisplayName>, value: [UserData_Key]`
Changes Take Effect: Immediately
Specifies which UserData key-value pair will be displayed in the Preview window, as well as how it will be displayed. For example, to display the UserData kvp `custname` with the title `Customer Name` in the

Interaction window, configure the option as follows:

- `title: Customer Name, value: [custname]`
- You can name the <n> variable in this option in numerical order (1, 2, 3) as you add more kvps, or you can leave it empty.

user-unregister-timeout

Default Value: `60000` (1 minute)
Valid Values: Any positive integer
Changes Take Effect: Immediately
Specifies the length of time, in milliseconds, that UC Connector will wait after Knowledge Worker has closed all browser sessions before it unregisters the Knowledge Worker DN with T-Server/SIP Server.

userdata-call-format<n>

Default Value: `title: <UserData_DisplayName>, value: [UserData_Key]`
Valid Values: `title: <UserData_DisplayName>, value: [UserData_Key]`
Changes Take Effect: Immediately
Specifies which `UserData` key-value pair will be displayed in the Interaction window, as well as how it will be displayed. For example, to display the UserData kvp `cust-account` with the title Account in the Interaction window, configure the option as follows:

- `title: Account, value: [cust-account]`
- You can name the <n> variable in this option in numerical order (1, 2, 3) as you add more kvps, or you can leave it empty.

userdata-contact-format

Default Value: `title: Contact, value: [USER-ID]`
Valid Values: `title: Contact, value: [USER-ID]`
Changes Take Effect: Immediately
Specifies whether the Customer field will be displayed in the Interaction window

- If this option is enabled (with valid values), UC Connector checks the `UserData` attribute for the key name `customer`. If found, UC Connector includes the value for this key in the `Contact` field of the Preview Notification and Interaction windows.
- For example, if the key-value pair `customer=Bank of Nova Scotia` is found in the `UserData`, then UC Connector will display `Customer Bank of Nova Scotia` in the Preview Notification and Interaction windows.

userdata-note-key

Default Value: `KW_ITX_NOTES`
Valid Values: Any text
Changes Take Effect: Immediately
Specifies the key-name to be used for the notes taken by by the Knowledge Worker during the interaction, and returned to the contact center as user data. By default, the key name for Know edge Worker notes in the user data is `KW_ITX_NOTES`.

userdata-onringing

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector will display UserData when the call to the Knowledge Worker is in the ringing state.

userdata-note-onpreview

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector will display the UserData `Notes` (configured in `userdata-note-key`) when the Preview Interaction is initially presented to the Knowledge Worker.

- **Limitation**: For agent notes that will appear in the Preview window, the text cannot contain a single (") mark. URS does not process this quotation mark as regular text, but as a text delimiter. In other words, any text after this quotation park will not be included in the Preview window.

userdata-note-onringing

Default Value: `false`
Valid Values: `true, false</tt`
`Changes Take Effect: Immediately`
`Specifies whether UC Connector will display the UserData Notes (configured in userdata-note-key) when the call to the Knowledge Worker is in the ringing state.`

userdata-contact-onpreview

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector will display the contact information for the caller in the Preview Notification sent to the Knowledge Worker.

userdata-contact-onringing

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector will display the contact information for the caller when the call to the Knowledge Worker is in the ringing state.

userdata-title

Default Value: `Case data`
Valid Values: Any text
Changes Take Effect: Immediately
Specifies the title for the user data that is displayed in the Knowledge Worker Call Control or Preview window. By default, this part of the client UI uses the title `Case data`. You can use any other name for this section by changing the value of this option.

userdata-note-title

Default Value: `Notes`
Valid Values: Any text
Changes Take Effect: Immediately
Specifies the title for the section of the UC client interface where the Knowledge Worker can input notes about the interaction. By default, this area is named `Notes`. You can use any other name for this section by changing the value of this option.

user-auto-registration

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: At application restart
Enables automated DN registration of all Knowledge Workers configured in the Genesys environment, at the moment the UC Connector application starts. If set to `true`, UC Connector will begin monitoring all user DNs and their presence on the UC platform automatically, without requiring individual Knowledge Workers to log in to Genesys. For example, in integrations with Microsoft Lync Server, no custom tab is available for Knowledge Worker log in; in this case, this option must be set to `true`.

- Also see Free Seating.

> **Important**
> The auto-registration will fail if the Knowledge Worker is currently on a call. If the registration does fail, UC Connector will try again after the DN is no longer busy or (in the case of some other login failure) when the Knowledge Worker's UC presence changes.

Microsoft-OCS Section

Configure these options in the `Microsoft-OCS` section of the UCC `Application` object. This section must be created using the correct syntax for the supported UC platform you are integrating with: `Microsoft-OCS`.

agent-onnote-tstatus<x>

Default Value: No default value
Valid Values: `<tserver status>, <note>`
Changes Take Effect: Immediately
Only for Knowledge Workers using Smart Link, ignored for presence-only integration. Specifies the text for the triggering note, as well as the corresponding Genesys status. If enabled, when the Knowledge Worker enters a note that matches the text configured in this option, UC Connector will change the status for this Knowledge Worker to the specified Genesys agent state. To configure this option, enter the value `<tserver status>, <note>` in the following pattern:

<tserver status>	Enter the Genesys status that the note will trigger.

	It can be any of the following Genesys states: ready, not ready, logout.
<note>	Enter the text for the triggering note.

- For example, if you configure `agent-onnote-tstatus1` to the value `NotReady, I am busy`, when the Knowledge Worker enters "`I am busy`" in the Lync / Skype for Business client, the Genesys agent state is changed to `NotReady`.

> **Important**
>
> Use the variable <x> in the name of this option when creating multiple triggering notes (set X to 1, 2, 3 and so on as you add more notes). If you have only one triggering note, you can leave out this variable.

agent-status-ready

Default Value: `3500, 0-4499`
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Used for both UC Connector integration with Lync or Skype for Business Enterprise Voice, and for Enterprise Knowledge Workers. Specifies the presence status on the Microsoft side that will be mapped to the Genesys status of Ready.

agent-status-notready

Default Value: `6500, 4500-17999`
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Used for both UC Connector integration with Lync or Skype for Business Enterprise Voice, and for Enterprise Knowledge Workers. Specifies the presence status on the Microsoft side that will be mapped to the Genesys status of `NotReady`. You can map several status codes to the `NotReady` state, by adding a comma-separate list of status codes. For example, `6500, 9500, 12500, 15500`.

agent-status-logout

Default Value: `18500,18000-`
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Used for both UC Connector integration with Lync or Skype for Business Enterprise Voice, and for Enterprise Knowledge Workers. Specifies the presence statuses on the Microsoft side that will be mapped to the Genesys status of `Logout`. Typically, you will map several Microsoft presence statuses to match the Genesys `Logout` status.

contact

Default Value: No default value

Valid Values: Valid SIP URI
Changes Take Effect: Immediately
Used for both UC Connector integration with Lync or Skype for Business Enterprise Voice, and for Enterprise Knowledge Workers. Specifies the Knowledge Worker name for the UC Connector as configured in Microsoft. This value matches the sign-in name for the Knowledge Worker in Microsoft Lync / Skype for Business. For example, `sip:sfb-ucc@your-sfb-address.com`

enable-push-oncall-status

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Only for Knowledge Workers using Smart Link, ignored for presence-only integration. Enables the overall Push On Call Status feature. If enabled, when the Knowledge Worker receives a call from the Genesys environment, the Microsoft status is set on the Lync / Skype for Business side, according to the value of the `oncall-status` option.

invite-message

Default Value: `"Please use the window on the right to access data about current interactions"`
Valid Values: Any text string
Changes Take Effect: Immediately
Only for Knowledge Workers using Smart Link, ignored for presence-only integration. Specifies the text that will be presented to the Knowledge Worker in the "conversation extension" window when an interaction arrives. The window will only be enabled if this option is present and has a value configured.

oncall-status

Default Value: `9500` (recommended `6500`)
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Only for Knowledge Workers using Smart Link, ignored for presence-only integration. Specifies the status to be updated in the Lync / Skype for Business client when a Knowledge Worker receives a call from the Genesys environment.

> **Important**
> Genesys recommends that you change the value of this option from the default `9500` to the value `6500`. The value `9500` corresponds to the status `DoNotDisturb` on the Microsoft side, in which case interaction sessions cannot be established. Use the value `6500` (Busy) instead.

presence-acw-note

Default Value: `Working after call`
Valid Values: Any string
Changes Take Effect: Immediately

Used for Lync / Skype for Business Enterprise Voice Integration only. Specifies the presence note that UC Connector uses when an agent enters the After Call Work state. For Lync / Skype for Business voice terminals, UC Connector uses this value for the presence update to Lync when the agent enters the After Call Work phase. Note: Smart Link does not support After Call Work (ACW).

> **Important**
>
> The ampersand (&) and less than (<) symbols should not be used in the string value. Microsoft Lync / Skype for Business does not accept presence updates if the `presence-acw-note` option contains an ampersand (&) or less than (<) symbol. It rejects the presence update from UC Connector and the user will not be set into the state specified by the presence-acw-status option.

presence-acw-status

Default Value: `6500`
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Used for Lync / Skype for Business Enterprise Voice Integration only. Specifies the presence state that UC Connector uses when an agent enters the After Call Work state. UC Connector uses this value for the presence update to Lync / Skype for Business when an agent enters the After Call Work phase. Note: Smart Link does not support After Call Work (ACW).

presence-lg-note

Default Value: `Statutory pause`
Valid Values: Any string
Changes Take Effect: Immediately
Used for Lync / Skype for Business Enterprise Voice Integration only. Specifies the presence note that UC Connector uses when an agent exits the After Call Work state and enters the Legal Guard state. UC Connector uses this value for the presence update to Lync / Skype for Business when an agent exits the After Call Work state and enters the Legal Guard state. Note: Smart Link does not support After Call Work (ACW).

> **Important**
>
> The ampersand (&) and less than (<) symbols should not be used in the string value. Microsoft Lync / Skype for Business does not accept presence updates if the value of the `presence-lg-note` option contains an ampersand (&) or less than (<) symbol. It rejects the presence update from UC Connector and the user will not be set into the state specified by the presence-lg-status option.

presence-lg-status

Default Value: `6500`
Valid Values: Any valid `MS-PRES` protocol interoperability code. See Interoperability Values for Lync

Skype for Business Presence States
Changes Take Effect: Immediately
Used for Lync / Skype for Business Enterprise Voice Integration only. Specifies the presence state that UC Connector uses when an agent exits the After Call Work state and enters the Legal Guard state. UC Connector uses this value for the presence update to Lync / Skype for Business when an agent exits the After Call Work state and enters the Legal Guard state. Note: Smart Link does not support After Call Work (ACW).

presence-sync-mode

Default Value: `pull`
Valid Values: `push`, `pull`
Changes Take Effect: After restart
Introduced in UCC 8.0.3. Used for both UC Connector integration with Lync or Skype for Business Enterprise Voice, and for Enterprise Knowledge Workers. Use this option for Presence Connector Mode.

- If set to `pull`, UCC uses Presence Integration.
- If set to `push`, UCC uses Presence Connector Mode.

When UC Connector is working in "push" (Presence Connector) mode, synchronization of Microsoft presence states (Presence Integration mode) is disabled. Instead, UC Connector pushes Microsoft presence states to Lync / Skype for Business when the Genesys agent state changes. UC Connector will push the Microsoft presence state to Lync / Skype for Business regardless of the current Lync / Skype for Business user state, so will push even if the Lync / Skype for Business user is in a signed-out state.

TLib Agent State Push
UC Connector pushes the Microsoft presence state to Lync / Skype for Business based on the following TLib events and options:

TLib Event	Option	Default Value
`EventAgentNotReady`	`agent-status-notready`	`6500,4500-17999`
`EventAgentReady`	`agent-status-ready`	`3500,0-4499`
`EventAgentLogout`	`agent-status-logout`	`18500,18000-`

- UC Connector uses first value from the range for making a presence update request. For example, UC Connector will use `6500` for the `EventAgentNotReady` event.
- For disabling push, set the value of the corresponding option to `-1`. For example, `agent-status-logout=-1`.
- UC Connector cannot sign-out or sign-in a Lync / Skype for Business user. Assuming that option `agent-status-logout` has a value of 18000 or greater then UC Connector updates the Microsoft presence state to "Offline", but the Lync / Skype for Business client will remain in a signed-in state.

On Call, After Call Work States Push
The option `enable-push-oncall-status` controls the push of the above states.

Multiple DNs Push
If a Knowledge Worker is logged into multiple DNs, the Lync contact presence is pushed based on the following table:

DN State	Presence
All DNs in state `Ready`	`Available`
One DN state is `Not Ready`	`Busy`
One DN state is `On Call`	`Busy + note`

registrar-uri

Default Value: No default value
Valid Values: Valid SIP URI
Changes Take Effect: Immediately
Used for both UCC configuration and Lync / Skype for Business Enterprise Voice integration. Specifies the URI that UC Connector uses to connect with the Microsoft Front End Server. For example,

```
sip:pool01.server-address.com
```

subscribe-batch-size

Default Value: 5
Valid Values: Range from 1 to 100
Changes Take Effect: After restart
Starting with release 8.0.300.43, UC Connector can now subscribe agents in batches using the above option. this option specifies the number of agents that are subscribed at one time.

Other Options

License Section

license-file

Default Value: No default value
Valid Values: Any valid port address in the format, `<your_license_server_port>@<your_license_server_host>` or the full path to the license file.
Changes Take Effect: After restart
Specifies the location of the license file.

num-of-seat-licenses

Default Value: `max` (all available licenses)
Valid Values: `0` or string `max`, or any integer from `0-9999`.
Changes Take Effect: After restart
Specifies how many seat licenses UC Connector checks out. UC Connector treats a value of 0 (zero) the same as it treats max—that is, it checks out all available licenses.

The sum of all `num-of-seat-licenses` values for all concurrently deployed UC Connector instances must not exceed the number of seat-related licenses in the corresponding license file. The primary and backup UC Connector share the same licenses, and therefore they need to be counted only once. UC Connector checks out the number of licenses indicated by the value for this option, regardless of the number actually in use.

Log Section

There is one UC Connector-specific option available for the Log section. For the common Log options, see the *Framework 8.1 Deployment Guide*.

internal

Default Value: `error`
Valid Values: `Error, Warn, Info, Debug`
Changes Take Effect: Immediately
Specifies the log priority for internal UC Connector components.

Switch/DN Level Options

Contact Point DNs

The options described in this section concern Routing Point DNs used to create contact points that the Knowledge Worker uses to direct call transfers or conferences to the contact center. All options must be configured in the UC-Connector section of the Annex tab.

attribute<n>

Default Value: No default value
Valid Values: format: <display text>: %s, statistic:<object>, <ObjectType>, <TenantName>, <StatType>, <TimeProfile>, <StatServerName>
Changes Take Effect: Immediately
Specifies the statistic to be displayed when the Knowledge Worker hovers their cursor over the contact point in their Interaction window. You can name the <n> variable in this option in numerical order (1, 2, 3) as you add more statistics, or you can leave it empty.

If this option contains both the format and statistic fields, UC Connector subscribes to retrieve the specified statistic from Stat Server. All statistic types supported by Stat Server are available.

The valid format for this option value is as follows:

- format—Set this option to the text you want to be displayed in the Interaction window. Include the %s, for the statistic to be displayed.
- statistic—Set this option to the parameters required by Stat Server to properly fetch the relevant data: Object, ObjectType, TenantName, StatType, TimeProfile, StatServerName.

> **Important**
> The parameter StatServerName is only required if UC Connector connects to more than one Stat Server.

- An example of a valid configured value is as follows:

```
format: Calls waiting: %s, statistic:1234@YourSwitch, RoutePoint, YourTenantName,
CurrNumberWaitingCalls, Default, StatServer1
```

For details about statistic types, see the Stat Server 8.5 User's Guide.

display-name

Default Value: No default value
Valid Values: Any valid string
Changes Take Effect: After application restart
Specifies the name to be displayed for the configured contact point (typically a Routing Point DN or

ACD Queue) in the Knowledge Worker's Interaction window.

enabled

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether this `Routing Point` DN is enabled for use with UC Connector. Set this option to `true` to enable the contact point.

presence-gateway-mode

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether UC Connector prevents sending invite messages to Lync when there is no web client UI connected for the corresponding user, and a new call or preview call is delivered. If `true`, UC Connector does not send SIP INVITE to Lync; otherwise, sending the invite is controlled by the invite-message option.

Knowledge Worker Person Object

For Knowledge Worker `Person` objects, the following options are available.

UC-Connector Section

enabled

Default Value: `true`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether this `Person` object is enabled for use with UC Connector. Set this option to `true` to enable this Knowledge Worker `Person` object.

redirect-setup-enabled

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Enables a user to set and enable a redirect number. This values takes priority over the global redirect-setup-enabled option.

redirect-enabled

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Specifies whether the configured redirect number can be used to accept previews. If `true`, UC Connector uses the configured redirect number to accept previews. This option can only be

configured for a Person.

redirect-number

Default Value: blank
Valid Values: A string representing a valid phone number
Changes Take Effect: Immediately
Specifies the redirect number available to the Knowledge Worker. This option can only be configured for a Person.

Microsoft-OCS Section

agent-status-ready

Default Value: No default value
Valid Values: Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Specifies the presence status for this Knowledge Worker on the Lync / Skype for Business-side, which will then be mapped to the Genesys status of Ready. Typically, you will map several Lync / Skype for Business presence status to match the Genesys NotReady status. For example, 3500, 3000-4499.

agent-status-notready

Default Value: No default value
Valid Values: Any valid MS-PRES protocol interoperability
Changes Take Effect: Immediately
Specifies the presence status for this Knowledge Worker on the Lync / Skype for Business-side, which will then be mapped to the Genesys status of NotReady. Typically, you will map several Lync / Skype for Business presence status to match the Genesys NotReady status. For example, 6500,9500,12500,15500,4500-17999.

agent-status-logout

Default Value: No default value
Valid Values: Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Specifies the presence statuses for this Knowledge Worker on the Lync / Skype for Business-side, which will then be mapped to the Genesys status of Logout. Typically, you will map several Lync / Skype for Business presence statuses to match the Genesys Logout status. For example, 18500,0-2999,18000-.

contact

Default Value: No default value
Valid Values: Valid SIP URI
Changes Take Effect: Immediately
Specifies the principal for the Knowledge Worker as configured in Lync / Skype for Business. This value matches the sign-in name for the Knowledge Worker in Lync / Skype for Business. For example,

```
sip:ucc_user1@your-LSfB-address.com
```

enable-push-oncall-status

Default Value: `false`
Valid Values: `true, false`
Changes Take Effect: Immediately
Enables the overall Push On Call Status feature. If enabled, when the Knowledge Worker receives a call from the Genesys environment, the status is set on the Lync / Skype for Business-side, according to the value of the `oncall-status` option.

oncall-status

Default Value: `9500` (recommended `6500`)
Valid Values: Interoperability Values for Lync Skype for Business Presence States
Changes Take Effect: Immediately
Specifies the status to be updated in the Lync / Skype for Business client when a Knowledge Worker receives a call from the Genesys environment.

> **Important**
>
> Genesys recommends that you change the value of this option from the default `9500` to the value `6500`. The value `9500` corresponds to the Lync / Skype for Business status `DoNotDisturb` on the Microsoft side, in which case interaction sessions cannot be established. Use the value `6500` (Busy) instead.

Log Events

This section describes the UCC log events, including log events that are generated by UC Connector in a warm standby high-availability (HA) configuration.

Log Events for HA Warm Standby

00-04560
Level: Standard
Text: Warm Standby (backup) mode activated
Attributes: None
Description: Management Layer command: reports that the backup server is working in Warm Standby mode.

00-04562
Level: Standard
Text: Warm Standby (Primary) mode activated
Attributes: None
Description: Management Layer command: reports that the primary server is working in Warm Standby mode.

When you configure your UC Connector HA deployment, you will create Alarm Conditions (two on the primary UC Connector and two on the backup UC Connector) for warm standby HA log events. You will configure the Alarm Conditions to trigger Alarm Reaction scripts, which will in turn run application objects for scripts that execute the SIP Server switchover.

SIP Stack Log Messages

UC Connector can detect if the SIP Stack is not running, and generate the appropriate Genesys log messages:

- `31401—SIP Layer Creation Failure`
- `31402—SIP Layer Created` (To cancel the alarm)

To activate the alarm functionality, perform the following steps:

1. On the Options tab in the log section of the UC Connector Application, add the following key-value pairs:
   - `MessageFile=`<path to the UCC.lms file>
   - `standard=network`
2. Add the connection to the Message Server. Open the connection of a Solution Control Server and make sure that you are using the same Message Server.

3. Create a new Alarm Condition configuration object with the following properties:
    - On the `Detect Event` tab, enter the following:
        - Log Event ID: = `31401`
        - Selection Mode: = `Select by Application`
        - Application = The appropriate UC Connector application name.
    - On the Cancel Event tab, enter Log Event ID: = `31402`

T-Server Compatibility with UC Connector

This section lists T-Server support for the emulated agent functionality in UC Connector.

T-Server	Version	UC Connect Compatibility
Alcatel A4200	7.6	No
Alcatel A4400/OXE	8.0+	Yes
Aspect ACD	8.0	No
Avaya Communication Manager	8.0+	Yes
Avaya INDeX	8.0+	Yes
Avaya TSAPI	8.0+	Yes
Cisco UCCE	8.0+	Yes
Cisco UCM	8.0+	Yes
Digitro AXS/20	7.5	No
EADS Intercom M6880	8.0	No
Ericsson MD110	8.0+	Yes
Huawei NGN	7.6	No
Mitel SX-2000/MN-3300	7.2	No
NEC NEAX/APEX	8.0	No
Nortel CS1000	8.0+	Yes
Nortel CS2000	8.0+	Yes
Rockwell Spectrum	8.0	No
Siemens Hicom 300/HiPath 4000 CSTA I	7.6+	Yes
Siemens HiPath 4000 CSTA III	8.0+	Yes
Siemens HiPath DX	8.0+	Yes
Tadiran Coral	8.0+	Yes
Genesys SIP Server	8.0+	Yes