Outbound Option Installation: SCCP Dialer

Note The SCCP Dialer is deprecated for release 10.0 and will reach end-of-sale in an upcoming release.

This chapter, intended for system administrators performing the initial installation of Outbound Option, describes how to set up and install the Outbound Option platform in an SCCP Dialer deployment.

This chapter groups installation activities to minimize switching between configuration and actual software installation. The general flow lists Unified CCE configuration first, then the Unified CM configuration, and then the Outbound Option component software installation and associated database creation.

Note Cisco Finesse is not supported with the SCCP dialer.

Installation task maps

Unified CCE Outbound Configuration

The first phase of installing Outbound Option is configuring Unified CCE and Outbound Option components. The following table lists the steps that comprise Unified CCE Outbound configuration *in the order that the steps should be performed*, and provides pointers to where the tasks are discussed.

Table 1: IPCC Enterprise Outbound Configuration Steps

Step Number	Task	IPCC Enterprise Procedure	System PG Procedure
1	Configure the IPCC PG	Configure the IPCC PG	Configure the IPCC PG
2	Configure the Dialer component	Configure Dialer Component	Configure Dialer Component
3	Configure the port map	Configure Port Map	Configure Port Map
4	Create a Network VRU	Create a Network VRU	Create a Network VRU
5	Configure the Media Routing PG	Configure Media Routing PG (MR PG)	Configure Media Routing PG (MR PG)
6	Configure a Skill Group	Configure Skill Group	Configure Skill Group
7	Create a Dialed Number	Create Dialed Number	Create Dialed Number
8	Create Translation Route To IVR	IPCC Enterprise Documentation	IPCC Enterprise Documentation
9	Configure System Options	Configure System Options	Configure System Options
10	Enable ECC Variables	Enable ECC Variables	Enable ECC Variables
11	Configure and schedule personal callbacks (optional)	Configure Personal Callbacks	Configure Personal Callbacks

Cisco Unified CM and Gateway Configuration

The following table lists the steps that comprise Unified CM configuration *in the order that the steps should be performed*, and provide pointers to where the tasks are discussed.

Table 2: Cisco Unified Communications CM Steps for Deployments with SCCP Dialer

Step Number	Task	IPCC Enterprise Procedure	System PG Procedure
1	Configure a separate Device Pool for each Dialer	*Cisco Unified Communications Manager Administration Guide*	*Cisco Unified Communications Manager Administration Guide*
2	Configure a separate Unified CM Manager Group for each Dialer's Unified CM subscriber	*Cisco Unified Communications Manager Administration Guide*	*Cisco Unified Communications Manager Administration Guide*
3	Import Dialer Ports and assign to the PG's CTI Application User, assigning Dialer ports for each Dialer component to a distinct device pool	Import and Assign Dialer Ports	Import and Assign Dialer Ports
4	Disable tone on hold/ music on hold for the Dialer	*Cisco Unified Communications Manager Features and Services Guide*	*Cisco Unified Communications Manager Features and Services Guide*
5	Disable ring tone for dialer transfer	Disable Ringback During Transfer to Agent for SIP	Disable Ringback During Transfer to Agent for SIP
6	Set Up Auto Answer on agent phone if zip tone required	Auto Answer Configuration on Agent Phones	Auto Answer Configuration on Agent Phones

Software Installation and Database Creation

The third phase of installing Outbound Option is installing the component software and creating the associated database. The following table lists the steps that comprise software installation and database creation *in the order that the steps should be performed* and provides pointers to where the tasks are discussed.

Table 3: Software Installation and Database Creation Steps

Step Number	Task	IPCC Enterprise Procedure	System PG Procedure
1	Install the Outbound Option private database on the Logger Side A platform	Create Outbound Option Private Database	Create Outbound Option Private Database

Step Number	Task	IPCC Enterprise Procedure	System PG Procedure
2	Install the Dialer component on the PG platform	Install Dialer Component	Install Dialer Component
3	Edit Dialer-related Registry values	Configure Dialer After Installation	Configure Dialer After Installation
4	Modify JTAPI for calls to invalid numbers	Modify JTAPI for Calls to Invalid Numbers	Modify JTAPI for Calls to Invalid Numbers
5	Install the MR PG on the PG platform	Install MR PG	Install MR PG

Unified CCE Outbound Option Configuration

This section provides procedures for the tasks associated with Unified CCE Outbound Option configuration.

Configure IPCC PG

Perform the following steps to configure the IPCC PG (PG1).

Procedure

Step 1 In ICM Configuration Manager, open the PG Explorer tool.
Step 2 Click **Retrieve**, and then click **Add**. Add an IPCC PG.
Step 3 Enter the name (for example, PG1_IPCC).
Step 4 Select the **CallManager** or **PG Generic** PG Type.
Step 5 Add a peripheral.
Step 6 Enter the name (for example, PG1_IPCC_PIM1).
Step 7 On the Peripheral tab, click the **Enable post routing** check box.
Step 8 Select the Default Desk Setting from the drop-down list.
Step 9 On the Routing Client tab, enter the routing client name (for example, IPCC_PIM1_Voice).
Step 10 Select the **Cisco_Voice** option from the **Default media routing domain** drop-down list.
Step 11 Click **Save**.
Step 12 Record the assigned Logical Controller ID for later use: ____________________.
Step 13 Record the assigned Peripheral ID for later use: ____________________.

Configure Dialer Component

Perform the following steps to configure the Dialer component.

Procedure

Step 1 Confirm that all ICM services are running.

Step 2 Open the ICM Configuration Manager.

Step 3 Double-click the **Outbound Option - Dialer** option to open the Outbound Option Dialer configuration window.

Step 4 Click **Retrieve**.

Step 5 Click **Add** to add a new Dialer.

Step 6 Enter the following information in the Dialer General Tab fields.

Field	Description
Dialer Name (required)	The name of the system where the Dialer is located. Maximum 32-character string, including alpha-numeric characters, periods (.), and underscores (_). Alphabetic characters can be upper- or lower-case. The name must begin with an alpha-numeric character, and must not contain spaces.
Computer Name (required)	Maximum 32-character string, including alpha-numeric characters, periods (.), underscores (_), and hyphens (-). Alphabetic characters can be upper- or lower-case. The name must begin with an alpha-numeric character and must not contain spaces.
Enable	Click the check box to enable or disable this Dialer for all campaigns.
ICM Peripheral Name (required)	Select a preconfigured peripheral name. This field is a drop-down list and is not editable.
Dialer Type	Select SCCP (Skinny Call Control Protocol).
Description	Maximum 255 characters. This description appears only on this tab page.
General Telephony	
Include Area Code when Dialing	When this option is enabled, the Dialer uses all digits to reach local telephone numbers rather than not using the area code. The default is Disabled.

Field	Description
Dial prefix	Enter any dialing prefix required by your location or by your campaigns. For example, some locations might require the prefix 9 to reach an outside telephone line.
Long distance prefix	Enter the pre-pended value for all long distance calls. The Dialer checks the local area codes against the contact number. If the configured local area code does not match the area code in the contact number, the Dialer determines this number is a long distance call. The default is 1.
Local area code (comma delimited) (required)	Enter the area/city code used at your location. Enter multiple local area codes separated by commas; for example, "508,978,617" represents three local area codes.
Hangup Delay (1-10)	Enter the number of seconds for the Dialer to wait before reusing a port after a hangup event. The default is one second.
Port Throttle	The maximum calls per second rate at which the Dialer dials outbound calls. Default is 5 calls per second for SCCP Dialer.

Note If the Dialer is installed in a location outside the U.S., either enter the locally-specific long distance prefix in the Long distance prefix field or leave the field blank.

Step 7 Click **Save**.

Configure Port Map

Perform the following steps to configure the port map for each Dialer. This specifies the number of ports available on the Dialer and the extension numbers, which Unified CM assigns to those ports. The maximum number of ports per SCCP Dialer is 120. Each configured port represents a Dialer phone device (Cisco 30 VIP) on Unified CM.

- Extension numbers must be unique across the full enterprise. If there are multiple Unified CM clusters, the extensions (Unified CM directory number) must still be unique. Extension numbers can be up to ten digits in length.
- When selecting extension numbers for Dialer ports, confirm that existing phone numbers in Unified CM and dial numbers in the Device Target Explorer tool are not already done.

Procedure

Step 1 In the ICM Configuration Manager Outbound Option Dialer configuration window, click the Port Map Selection tab to display the port map configuration.

Note Confirm that all agents and skill groups used by Outbound Option are associated with the Unified CM PG, and not the MR PG.

Step 2 To begin adding ports to this Dialer, click **Add**.

Step 3 Configure a set of ports and their associated extensions.

Note Make sure you provide the same number of ports for all the Dialers configured on the same peripheral.

Step 4 Click **OK**. The port mappings appear on the Port Map Selection tab.

Step 5 Click **Save** to save all the configuration information.

Step 6 Click **Export**. The Select CM Version dialog appears.

Step 7 Click the Unified CM option. (Select the latest Unified CM option if you are using a later version of Unified CM.)

Step 8 Click **OK** and specify the path for the port mapping file.

Step 9 Click **Save** to save the file. You will import this file, during Unified CM configuration.

Create a Network VRU

Perform the following steps to create a Network VRU using the Network VRU Explorer tool.

Procedure

Step 1 Open the ICM Configuration Manager application.

Step 2 Open the Explorer tools.

Step 3 Open the Network VRU Explorer tool.

Step 4 Create a type 2 VRU to be used during Media Routing (MR) PIM setup. Record the \ VRU name: ______________.

Step 5 Click **Save**.

Note See the *ICM Configuration Guide for Cisco Unified ICM Enterprise* for detailed information about the ICM Configuration Manager tools.

Configure Media Routing PG (MR PG)

Perform the following steps to configure the MR PG (PG2).

Procedure

Step 1 In ICM Configuration Manager, open the PG Explorer tool.

Step 2 Click **Retrieve**, and then click **Add**. Add an MR PG.

Step 3 Enter the name (for example, PG2_MR).

Step 4 Select the **MR PG** type.

Step 5 Add a peripheral.

Step 6 Enter the name (for example, PG2_MR_PIM1).

Step 7 On the Peripheral tab, check the **Enable post routing** check box.

Step 8 On the Routing Client tab, enter the routing client name (for example, MR_PIM1_Voice).

Step 9 Select the **Cisco_Voice** option from the **Default media routing domain** drop-down list.

Step 10 On the Advanced tab, select the **Network VRU** that you created during system installation from the drop-down list.

Step 11 Click **Save**.

Step 12 Record the assigned Logical Controller ID for later use: ____________________.

Step 13 Record the assigned Peripheral ID for later use: ____________________.

Configure Skill Group

Perform the following steps to create a skill group for the PG using the Skill Group Explorer tool:

Procedure

Step 1 In ICM Configuration Manager, open the Skill Group Explorer tool.

Step 2 Confirm that the PIM created in the section Configure IPCC PG is displayed in the Select filter data section.

Step 3 Click **Retrieve**.

Step 4 Click **Add Skill Group**.

Step 5 Set the Media Routing Domain to the **Cisco_Voice** option.

Step 6 Enter a peripheral name and number (record them):____________________. (You can either enter a name or allow the system to generate the name.)

Step 7 Enable the **ICM picks the agent** check box.

Step 8 Click **Add Route**.

Step 9 Enter a name for the new route (any name is allowed).

Step 10 Click **Save**.

Create Dialed Number

Perform the following steps to create a dialed number for the MR PG.

Procedure

Step 1 In ICM Configuration Manager, open the Dialed Number/Script Selector List tool.

Step 2 Click **Add**, then enter a dialed number for the MR PG.

Step 3 Select the MR routing client from the drop-down list.

Step 4 Select **Cisco_Voice** from the **Media Routing Domain** drop-down list.

Step 5 Enter the dialed number.

Step 6 On the Dialed Number Mapping tab, click **Add**.

Step 7 In the **Calling Line ID** group box, click the **All** radio button.

Step 8 In the **Caller-entered digits** group box, click the **All** radio button.

Step 9 In the **Call type** drop-down list, select the MR call type.

Step 10 Click **OK** on the Dialed Number Map Entry dialog box, and then click **Save**.

Note To use the Personal Callback feature, a second dialed number is required. This dialed number must have the **PersonalCallback** dialed number string. As with the previous dialed number, map all Calling Line IDs and all Caller-entered digits to the call type previously created for the MR routing client. Multiple dialers require multiple dialed numbers—one for each routing client per skill group.

Configure System Options

Use the Outbound Option System Options component in the ICM Configuration Manager to define contact dialing time ranges that apply to all of your Outbound Option campaigns.

Because this component uses 12-hour time notation, be sure to select AM or PM for your start and end times.

Procedure

Step 1 In ICM Configuration Manager, open the Outbound Option System Options component.

Step 2 Select the General Options tab page to define the total dialing time range for all your Outbound Option campaigns to use, and then click **OK**.

Step 3 Select the Bulk Update tab page to define specific dialing time ranges for telephone numbers, and then click **Update All Campaigns**.

Enable ECC Variables

Perform the following steps to enable the Expanded Call Context (ECC) variables using the System Information tool and the Expanded Call Variable List tool.

Procedure

Step 1 Open the System Information tool in the Tools/Miscellaneous folder in the ICM Configuration Manager application.

Step 2 Enable the Expanded call context enabled check box.

Step 3 Click **Save**.

Step 4 Open the List tools.

Step 5 Open the Expanded Call Variable List tool.

Step 6 Click all BAxxxx variables (BAAccountNumber, BABuddyName, BACampaign, BADialedListID, BAResponse, BAStatus, and BATimezone).

Step 7 In the Attributes tab, click the Enabled check box for each variable.

Step 8 Click **Save**.

Configuration and scheduling of personal callback feature

Configure Personal Callbacks

Note All personal callbacks occur in Preview mode. Be aware that only one Dialer on a particular peripheral is assigned personal callback records.

Some personal callback options must be configured through the registry. Furthermore, if a personal callback record is not associated with a campaign, it follows the rules configured within the registry.

Procedure

Step 1 Configure the reschedule callback mode in the Outbound Option Campaign Configuration Component by selecting one of the following options on the Campaign General tab:

- Use the Campaign DN—the call is routed to the skill group DN for the campaign associated with the callback, if the DN is available
- Reschedule the personal callback to the same time the next business day
- Abandon the personal callback

Step 2 Open the HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\<instance name>\LoggerA\BlendedAgent\CurrentVersion folder in the Outbound Option registry.

Step 3 Configure the personal callback registry entries listed in the following table.

Name	Default Value	Description
CallbackTimeLimit	15	Calculates the callback time range for each personal callback in minutes. The Campaign Manager queries the Personal Callback List for callback records where the CallbackDateTime value is between the current time and the sum of the current time minus the CallbackTimeLimit.
PersonalCallbackTimeToRetryBusy	1	Sets the amount of time, in minutes, that the Outbound Option Dialer waits before retrying a personal callback when the customer's phone is busy (minimum value is 1; maximum value is 10).
PersonalCallbackTimeToRetryNoAnswer	20	Sets the amount of time, in minutes, that the Outbound Option Dialer waits before retrying a personal callback when the customer does not answer the phone (minimum value is 5; maximum value is 60).
PersonalCallbackTimeToRetryReservation	5	Sets the amount of time, in minutes, that the Outbound Option Dialer waits before retrying to reserve an agent if the agent is not available (minimum value is 1; maximum value is 10).
PersonalCallbackMaxAttemptsDefault	5	Sets the maximum number of times a personal callback will be attempted (minimum value is 1; maximum value is 20). When the number of maximum attempts reaches 0, the record is not tried again and the status is set to "M" (max-ed out).
PersonalCallbackTimeToCheckForRecords	5	The interval time, in minutes, at which the Outbound Option Dialer checks the Campaign Manager for personal callback records (minimum value is 1; maximum value is 30).
PersonalCallbackDaysToPurgeOldRecords	5	The number of days after the personal callback has been scheduled to keep the record before it is purged (minimum value is 1; maximum value is 30).

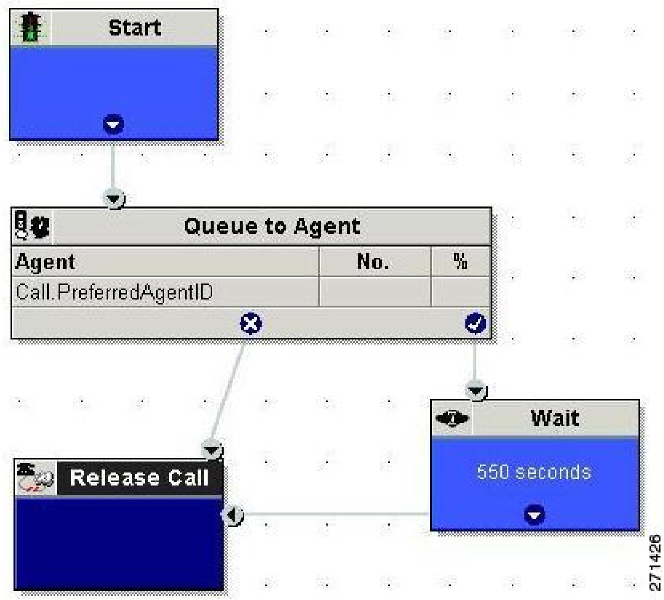
Name	Default Value	Description
PersonalCallbackRecordsToCache	20	The number of personal callback records to send to the Outbound Option Dialer at one time (minimum value is 5; maximum value is 100).
PersonalCallbackSaturdayAllowed	0	Indicates whether personal callbacks are allowed on Saturdays: • 0: Personal callbacks are not allowed on Saturdays and will be scheduled for the next allowable day. For example, a personal callback which fails to reach the customer on a Friday will be rescheduled for the following Monday. • 1: Personal callbacks are allowed on Saturdays.
PersonalCallbackSundayAllowed	0	Indicates whether personal callbacks are allowed on Sundays: • 0: Personal callbacks are not allowed on Sundays and will be scheduled for the next allowable day. For example, a personal callback which fails to reach the customer on a Friday will be rescheduled for the following Monday. • 1: Personal callbacks are allowed on Sundays.
PersonalCallbackCallStatusToPurge	C, M	String containing the call status types to consider when purging old personal callback records. For example, if the string contains “C,M,F,L,I,” all calls with these call statuses will be purged from the database. (If the registry entry is missing, the default is assumed.) **Note** The call status values can optionally be delimited using a comma, a hyphen, a semi-colon, or a colon.
PersonalCallbackNoAnswerRingLimit	4	The number of times a customer phone rings before being classified as an unanswered call (minimum value is 2; maximum value is 10).

Step 4 Set up the Personal Callback reservation script using the Script Editor application.

- Add a Wait node after the Queue to Agent node using a value that is less than the TimeToWaitForMRIResponse Dialer registry setting (default value of 600 seconds equals 10 minutes).
- Like all reservations scripts, the script should end in a Release Node instead of an End Node to avoid cluttering up the Router Log Viewer with “No Default Label” errors.

For example, the following Personal Callback reservation script uses the nodes described above:

Figure 1: Personal Callback Reservation Script



Create Enterprise Skill Group

To use the Personal Callback feature, you need to create the enterprise skill group associated with the agent using the Enterprise Skill Group List tool.

Procedure

Step 1 Open the List tools.

Step 2 Open the Enterprise Skill Group List tool.

Step 3 Create an enterprise skill group. In the **Add Name** field, type the enterprise name, then click **Add**. Select the skill group, and then click **Save**.

Step 4 In the Attributes tab, click **Add** to add the skill group or groups.

Step 5 Click **Save**.

Create Enterprise Route

After you create the enterprise skill group associated with the agent, you need to create an enterprise route using the Enterprise Route List tool. This route should target the enterprise skill group created in the previous step.

Procedure

Step 1 Open the List tools.

Step 2 Open the Enterprise Route List tool.

Step 3 Create an enterprise route. In the **Name** field, type the enterprise route, and then click **Add**. Select the route, and then click **Save**.

Step 4 In the Attributes tab, add the route.

Step 5 Click **Save**.

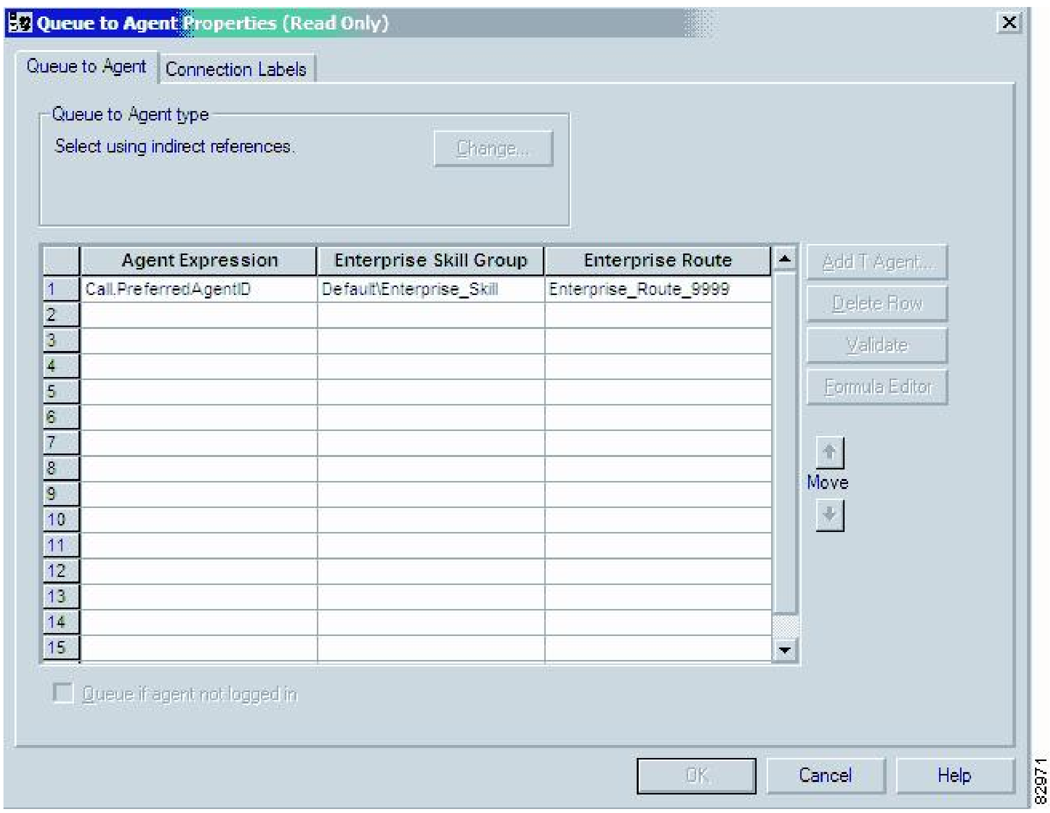
Configure Queue to Agent Node

If you use personal callbacks, complete the following steps to configure the Queue to Agent Node in your reservation script.

Procedure

Step 1 Right-click the Queue to Agent node and select **Properties**.
Step 2 Click **Change** in the “Queue to agent type” section.
Step 3 Select **Lookup agent reference by expression**, and then click **OK**.
Step 4 Enter the agent expression **Call.PreferredAgentID**.
Step 5 Select the enterprise skill group you created in the Creating an Enterprise Skill Group section.
Step 6 Select the enterprise route you created in the Creating an Enterprise Route section.
Step 7 Confirm that the Peripheral column is left blank.
Step 8 Click **OK** to save the Queue to Agent node.
Step 9 Save and then schedule the script.

Figure 2: Scheduling Script



Unified CMr and Gateway Configuration

This section provides procedures for the tasks associated with the Unified CM and gateway configuration.

Ensure that each dialer's ports are contained on their own UCManager subscriber, and the UCManager subscriber is not shared with any other Dialer. Because a Dialer port makes shorter calls at sustained higher call rates, it takes a larger portion of UCManager resources than a normal agent phone. The sizing calculator should have already been used to properly size when designing the solution. The port throttle configuration referenced in Dialer configuration prevents the Dialer from over-using its subscriber. If more than one Dialer points to the same subscriber, then this Dialer throttling mechanism is not effective because it only applies to each Dialer.

Import and Assign Dialer Ports

Perform the following procedure to import Dialer Ports and assign them to the PG's CTI Application User.

Procedure

Step 1 After configuring the Dialer Port Map, click **Select All**, and then click **Export** to save the port map configuration to a CSV-formatted text file. Select the Unified CM version.

Note Be sure to select the Unified CM release that is compatible with the product release.

Step 2 Use the Cisco Unified CM BAT tool to create a new phone template.

1. Select the **Cisco 30 VIP** phone choice.
2. Enter the template name.
3. Set the device pool.
4. Choose the **Standard 30 VIP** phone button template and the device security profile.
5. Save the phone template.
6. Click the line1 template and insert a single line with no speed dials.
7. Click **Save**.

Note When creating a dialer port template using the BAT tool, be careful when selecting the Device pool. Make sure the correct region is set so it works across different audio codecs.

Step 3 Select **Bulk Administration** > **Upload Download**. Click **Add New**. Browse to the CSV file, select **Phones**, select **Insert Phones** > **Specific Details**, and then click **Save**.

Step 4 Select **Bulk Administration** > **Phones** > **Insert Phones**. Select the file name and the phone template name, click **Run Immediately**, and then click **Submit**.
To see the status of this job, select **Bulk Administration** > **Job Scheduler**, and then click the **Find** button.

Step 5 Associate the newly created devices with a PG user. In the Unified CM Administration window, select **User Management** > **Application User**, and then click **Find**.

Step 6 Select the **Device Association** link. In the Device List Filter, select the **Directory Number** and then enter the first few digits of the newly created Dialer ports.

Step 7 Click **Select Devices**. Make sure the check box next to each Dialer port is checked.

Step 8 Click **Save**.

Disable Ringback During Transfer to Agent for SIP

The configuration for the SCCP Dialer does not work for the SIP Dialer. When the SIP Dialer is handing off the call to an agent, it sends REFER to the voice gateway. The voice gateway initiates a new SIP call (new INVITE) to CUCM, and then receives a 180 RINGING response. As a result, the gateway generates a ringback tone to the customer. With CUCM 8.5 and later, you can disable the ringback by applying a SIP normalization script to the CUCM SIP trunk. This script manipulates the 180 ringing to a 183 SESSION PROGRESS message to prevent the gateway from generating a ringback.

Note Apply this script only to the SIP trunk that is handling the inbound call from voice gateway for agent transfer. If you use the same gateway for both PSTN calls and the SIP Dialer, you must configure separate trunks in CUCM and apply this normalization script only to the Dialer SIP trunk. The trunk for PSTN calls still needs a 180 ringing response for inbound calls to trigger the gateway to play ringback to the PSTN.

Note Skip step 1 if a dedicated SIP trunk already exists for handling agent transfer dial. Perform step 1 if the same SIP trunk is used for normal inbound PSTN calls and Dialer agent transfer calls.

Procedure

Step 1 To create a SIP trunk in CUCM with a SIP security profile for the Dialer agent transfer calls, select **Communications Manager GUI > System > Security >SIP Trunk Security Profile>[Add New]**.

Step 2 Click **Save**.

Step 3 Create a new IP trunk and associate the created SIP trunk Security Profile.

Step 4 Click **Save**.

Step 5 Click **Reset**.

Step 6 In **Communications Manager GUI > Device Settings > SIP Normalization Scripts [Create New]**, enter the following SIP normalization script into the content field. All other values remain set to default.

```
M = {}function M.outbound_180_INVITE(msg) msg:setResponseCode(183, "Session
in Progress") endreturn M
```

Step 7 Click **Save**.

Step 8 Click **Reset**.

Step 9 Associate the created normalization script with the SIP trunk.

Step 10 Click **Save**.

Step 11 Click **Reset**.

Auto Answer Configuration on Agent Phones

The dialer component is preconfigured during installation to auto answer Outbound Option related calls to the Outbound Option agent. However, this default configuration does not provide a zip tone to the agent (which notifies of incoming calls), so agents must monitor the agent application for incoming customer calls.

To enable zip tone, enable auto-answer on the agent's phone configuration in Unified CM. This solution adds about a second onto the transfer time. This solution is identical to the solution that is used for Unified CCE.

For Mobile Agents using the nailed connection, the Unified CM auto answer setting does not provide a zip tone, but Unified CCE does provide an option for playing a notification tone to the agent using the agent desk settings.

Enabling auto answer in the agent desk settings or in the dialer component in conjunction with the Unified CM can be problematic. Therefore, Cisco recommends that you disable the auto answer option in the dialer component, and enable it either in the agent desk settings or in Unified CM.

Outbound Option Software Installation Steps

This section describes how to install Outbound Option and related components.

Note **Important:** Before you perform the installation procedures in this section, you *must* stop the Router, the Logger, the AW, and the Agent PGs in ICM Service Control. You must also enable Outbound Option in the Logger setup before creating the Outbound Option database. ICMDBA cannot create the Outbound Option database without enabling it in the Logger.

Create Outbound Option Private Database

Before you use Outbound Option on Unified CCE, estimate the size of the Outbound Option private database and then create it on the Logger Side A platform using ICM's ICMDBA utility.

Note Unified SCCE automatically creates and sizes the Outbound Option database. Skip this step if you are deploying Outbound Option with Unified SCCE.

Procedure

Step 1 Collect the following information:

- What is the size, in bytes, of each customer record in the import file? If the size is less than 128 bytes, use 128. (The size of a record cannot be less than 128 bytes.) (RecordSize)
- How many records will be imported? (RecordCount)
- Will new imports replace or append records already imported?

Step 2 Estimate the contact table size using one of the following formulas:

- If imports overwrite imports: Do not change record count
- If imports append imports: RecordCount = total number of rows kept in a customer table at any one time
- contact-table-size = RecordSize * RecordCount * 1.18

Step 3 Estimate the dialing list table size using one of the following formulas:

- If imports overwrite imports: RecordCount = number of rows imported * 1.5 (50% more rows will be inserted into the dialing list than imported)
- If imports append imports: RecordCount = total number of rows kept in all customer table at any one time * 1.5
- dialing-list-table-size = rows in dialing list * 128 bytes * 4.63

Step 4 Calculate the database size using this formula: contact-table-size + dialing-list-table-size.

Step 5 Start ICMDBA by entering **ICMdba** in Microsoft Windows' Run dialog box or command window.

Step 6 Select the Logger and select **Database** > **Create** (or click the right mouse button and select **Create**).

Step 7 In the Create Database window, specify the Outbound Option database type.

Step 8 Click **Add**. The Add Device window opens.
Use this window to create a new data device and log device for the Outbound Option database. Specify the disk drive letter and size in megabytes for each new device. Click **OK** to create the device, and then click **Create**. Click **Start**.

At a later time, if necessary, you can edit the device to change storage size, or remove a device, using the **Database** > **Expand** option.

Step 9 Click **Close**.

Caution No manual changes to the contents of the outbound database are allowed. Do not use triggers in the outbound database. Triggers for the dialing lists or personal callback list should not be added or modified. The Dialer_Detail table in the HDS contains the information required by custom applications. Extract the information from the HDS to a separate server where the custom application can process the data without impacting the HDS.

Upgrade of Outbound Option from Previous Release

If you are upgrading from a previous CCE/CCH release, you must run the Enhanced Database Migration Tool (EDMT) to upgrade your Outbound Option database. Otherwise, Campaign Manger will not start, and an alarm is triggered to indicate an incorrect private database version. See the *Cisco Unified Contact Center Enterprise Installation and Upgrade Guide* at http://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html for instructions on running EDMT.

Install Dialer Component

Perform the following steps to install the Dialer component on the Side A PG platform.

Procedure

Step 1 Make sure all ICM Services are stopped.

Step 2 Run Peripheral Gateway Setup.

Step 3 In the Cisco Unified ICM/Contact Center Enterprise & Hosted Setup dialog box, in the left column under Instances, select an instance.

Step 4 Click **Add** in the Instance Components section.
The ICM Component Selection dialog box opens.

Step 5 Click **Outbound Option Dialer**.
The Outbound Option Dialer Properties dialog box opens.

Step 6 In the initial Dialer Properties dialog box, check **Production mode** and **Auto start at system startup** unless you are specifically told otherwise by your Unified ICM support provider. These options set the Dialer Service startup type to Automatic, so the Dialer starts automatically when the machine starts up.

Step 7 For Dialer Type, select **SCCP (Skinny Call Control Protocol)**.

Step 8 Click **Next**.

Note After you create a Dialer, you cannot change the **Dialer Type**. To switch Dialer types, delete the existing Dialer and create a new Dialer.

Step 9 On the last Outbound Option Dialer Properties dialog box, specify the following information:

- **Outbound Option server**: The host name or IP address of the Outbound Option server. This server is typically the same machine where the Outbound Option Campaign Manager is located.
- **CTI server A**: The host name or IP Address of the machine that has side A of CTI server installed.
- **CTI server port A**: The port number the Dialer uses to interface with CTI server side A. The default is 42027.
- **CTI server B**: For duplexed installations, the host name or IP Address of the machine that has side A of CTI server installed.
- **CTI server port B**: For duplexed installations, the port number the Dialer uses to interface with CTI server side B. The default is 43027.
- **Heart beat**: How often the dialer checks its connection to the CTI server, in milliseconds. The default value of 500 is acceptable.
- **Media routing port**: The port number the Dialer uses to interface with the Media Routing PIM on the Media Routing PG. The default is 3800 ot 3801.
- **Call Manager TFTP server**: The host name or IP address of the CallManager TFTP server. This server is the same machine used for the CallManager publisher.

Step 10 Click **Next.** A Summary screen appears.

Step 11 Verify that you have specified the correct information. Click **Back** to make corrections if needed; otherwise, click **Next** to begin Dialer installation.

Configure Dialer After Installation

After you finish installing the Dialer component, edit the following Dialer-related Registry values:

- Configure the Dialer throttling on each Dialer in the system. Open ICM Configuration Manager, select **Outbound Option** > **Dialer**, and then enter a value in the Port Throttle field. This field indicates the number of ports to throttle, which helps determine the calls per second rate at which the Dialer dials outbound calls. For example, a port throttle count=10 and a time=2 indicates that no more than 5 calls can be started during a one second period. If 5 calls are ready to be dialed, they will be spaced evenly over that one second period. The total call capacity of Unified CM is dependent on several different factors, including the Unified CM version, inbound call rate, and outbound call rate.
  For more details, see the *SNMP Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted*.
- After the Dialer process runs for the first time, you also need to change the value of the AutoAnswerCall entry to 0, disabling the auto answer setting in the Dialer registry.
  See the Auto Answer Configuration on Agent Phones section in this chapter for details about other options for auto answer that support agent notification of an incoming call.

Modify JTAPI for Calls to Invalid Numbers

You must change the jtapi.ini file on the peripheral gateway so that dialed calls are recorded with progress codes, and not as No_Answer. Progress codes 1, 4, 22, and 28 represent Unallocated_Number, Send special information tone, Number changed, and Invalid Number Format, respectively. To make this change, perform the following steps.

Procedure

Step 1 From the IPCC PG, access a command prompt and set the path to `C:\Windows\java\lib`. Enter the command `java CiscoJtapiVersion -parms> Jtapi.ini`.

Step 2 Go to `C:\Windows\java\lib`.

Step 3 Open the jtapi.ini file in a text editor.

Step 4 Add the following line, if not already present: `UseProgressAsDisconnectedDuringErrorEnabled=1,4,22,28`.

Step 5 Save and close the file.

Step 6 Reboot the PG machine.

Install MR PG

Perform the following steps to install the MR PG on the Side A platform.

Procedure

Step 1 Run ICM Setup to install a PG that corresponds with PG2, which was configured earlier.

Step 2 In the Peripheral Gateway Properties window, select the **PG2** PG Node ID and the **MediaRouting** Client Type.

Step 3 Click **Next**.

Step 4 Add a PIM, **PIM1**.

Step 5 In the MediaRouting Configuration window, enable the PIM.

Step 6 Enter the peripheral name and the peripheral ID (that you recorded at the end of the Configuring the Media Routing PG (MR PG) procedure) of the MR_PIM.

Step 7 Set both Application Hostname fields to the computer name of the Outbound Option Dialer.

Step 8 Set the Application Connection Port to the port number used by the Outbound Option IPCC Dialer (usually 38001).

Step 9 Click **Next** until Setup finishes. When Setup finishes, click **Finish**.

Step 10 Repeat the preceding steps to install the MR PG on the Side B PG platform.

Installation of Cisco CTI Controls

This section describes the installation process for the Cisco CTI controls. It also describes the Cisco CTI Toolkit Outbound Desktop (Win32) for Unified CCE.

Perform the following procedures to install CTI controls to support Outbound Option on the desktop.

See the CTI documentation available online at http://www.cisco.com.

Integrate Outbound Option with CTI OS

Outbound Option works with CTI OS, which provides an object-based interface to the CTI Server using the COM and C++ interfaces. These interfaces permit development of agent desktop applications that interface with Unified ICM software.
Outbound Option is fully compatible with the CTI OS CIL library and the CTI Toolkit Agent Desktop (Win32). While there are no Outbound Option-specific controls available for the CTI Toolkit Agent Desktop (Win32), a sample CTI OS Desktop (known as the "Cisco CTI Toolkit Outbound Desktop (Win32)"), which supports Outbound Option, is shipped with the product (located in <*Drive Letter*>:\Program Files\Cisco Systems\CTIOS Client\CTIOS Toolkit\Win32 CIL\Samples\CTI Toolkit Outbound Desktop). In addition, the standard CTI Toolkit Agent Desktop (Win32) can be modified to display all Outbound Option ECC variables in the call variable grid.

Note Be aware that CTI OS Release 7.0(0) and greater uses CTI Protocol 11. As a result, there are more CTI fields available in CTI OS (for example, call type, CampaignID, and QueryRuleID).

When installing the CTI OS Client, select the **CTI Toolkit SDK** and the **Win32** check boxes to access the CTI Toolkit Outbound Desktop (Win32) sample. (See the "How to Install the CTI Toolkit Outbound Desktop (Win32)" section for more details.)

If you are running Outbound Option with CTI OS, perform the following procedure to add Outbound Option ECC variables to the CTI OS Server.

Procedure

Step 1 Rename the C:\ICM\CTIOS_bin\blendedagent_addecc.reg.txt file to **blendedagent_addecc.reg**.

Step 2 Save the blendedagent_addecc.reg read-only file. Right-click the file, select **Properties**, and then uncheck the Read Only check box.

Step 3 Edit the **blendedagent_addecc.reg** file and globally change "InstanceName" to the real system instance name and save it.

Step 4 Double-click on the blendedagent_addecc.reg file to add the Outbound Option ECC variables to CTI OS.

Step 5 In the Node Manager, restart the CTI OS service.

Step 6 Restart all CTI OS Desktop clients to download the new ECC variables.

What to Do Next

See the *CTI OS System Manager's Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted* for more information. See CTI OS Outbound Option ECC Variable Settings for a sample .REG file which creates the applicable Outbound Option ECC registry entries. (This registry file must be edited and run on the CTI OS server.)

After the Outbound Option ECC variables have been added to the standard CTI Toolkit Agent Desktop (Win32), the values can be set through the grid. (See the "Outbound Option Extended Call Context Variables" section in Chapter 2 for a description of each ECC variable.)

Install CTI Toolkit Outbound Desktop (Win32)

Procedure

Step 1 Install CTI OS Client and confirm that the **CTI Toolkit SDK** and the **Win32** check boxes are selected.

Note See the *CTI OS System Manager's Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted* for detailed information about installing the CTI Toolkit SDK.

Step 2 Access the CTI Toolkit Outbound Desktop (Win32) from the following location:
<*Drive Letter*>:\Program Files\Cisco Systems\CTIOS Client\CTIOS Toolkit\Win32 CIL\Samples\CTI Toolkit Outbound Desktop

Step 3 Double-click the **CTIOSOutOptSSoftphone.exe** file to display the CTI Toolkit Outbound Desktop (Win32).

Setup of Outbound Option in Cisco Desktop Administrator

This section provides information about setting up Outbound Option with Cisco Desktop Administrator. When using Outbound Option with Cisco Agent Desktop, outbound calls appear as inbound calls to the agent, and information about the call appears in the Enterprise Data pane.

See the CAD documentation available online at http://www.cisco.com for more information.

Outbound Option Enterprise Data

To enable Outbound Option enterprise data to appear in the Cisco Agent Desktop Enterprise Data window, the administrator must edit the Default layout to include some or all Outbound Option variables. These variables are prefixed with "BA." (Edit the default enterprise data layout in the Cisco Desktop Administrator.)

- BAAccountNumber [200]
- BABuddyName [201]
- BACampaign [202]
- BADialedListID [203]
- BAResponse [204]
- BAStatus [205]
- BATimeZone [206]

Note

- The BAStatus field is required. All other BA fields are optional for Progressive and Predictive modes. In Preview mode, the **Skip** button will not work if BADialedListID is not enabled.
- The BABuddyName field is required, if you want to see the customer's name being called.
- If a call is part of a Preview dialing mode campaign, the first letter in the BAStatus field entry is **P**. If a call is part of a Direct Preview dialing mode campaign, the first letter in the BAStatus field entry is **D**.

Add Enterprise Data Fields to Layout List

Use the following procedure to add the Outbound Option variables.

Procedure

Step 1 Start Cisco Desktop Administrator.

Step 2 In the navigation tree, navigate to the Layout Editor in the Enterprise Data window: **Location** > **(logical contact center name)** > **Enterprise Data Configuration** > **Enterprise Data**. Click **Edit**.

Step 3 Add the following fields to the Layout List by selecting the field from the Available Fields List, and then clicking the left arrow button.

- BAAccountNumber
- BABuddyName
- BACampaign
- BADialedListID
- BAResponse
- BAStatus
- BATimeZone

Step 4 Click **OK**.

Step 5 Click **Apply** to save your changes.

Verification

This section provides a series of verification steps to determine if the system has been installed properly. These steps are designed to pinpoint problems that might exist in the setup before actually attempting to deploy the Dialer. If problems occur while using this product, please see this section before contacting Cisco Technical Support (TAC).

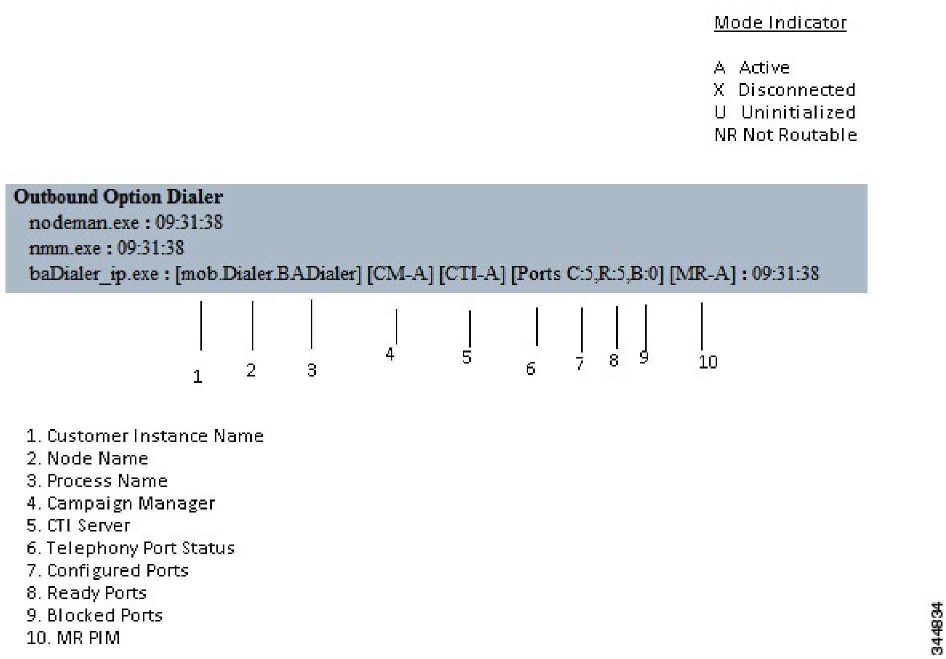
Note This section assumes that the Outbound Option application is installed and at least one Dialer has been configured along with its associated port map. This section also assumes that the Dialer port map has been exported and configured on Unified CM using the BAT tool.

Troubleshoot Connections

Dialer Component Status

The Dialer component process status provides a lot of details about the health of the installation even before any campaign configuration is initiated or before any call is placed. You can view the Dialer component status in the Diagnostic Framework Portico.

Figure 3: SCCP Dialer Component Status



Troubleshoot Dialer Connections

Dialer customer instance, node name, and process name

This information is useful if TAC asks you to interrogate the system while debugging a problem for a case.

Campaign Manager connectivity status

This status is either A for active or X for disconnected. If the Campaign Manager connectivity status is X, the Dialer is not connected to the Campaign Manager.
Try pinging from the Dialer to the Campaign Manager machine by hostname and by IP Address.

- If the ping fails for the IP address, recheck that the IP address is correct, and then troubleshoot network connectivity.
  - Check to see whether the Logger Side A node is running.
  - Check to verify whether Outbound Option has been enabled in the Logger Side A setup, and that the Campaign Manager process is running.
- If the ping is successful for the IP address but not for the DNS hostname, check that the DNS hostname is correct and that it is properly configured in the system's DNS server.
- If the ping is successful, recheck the Dialer component setup to see if the Dialer component setup contains the wrong address or port number for the side A Logger.

CTI Server connectivity status

This status is either **A** for active or **X** for disconnected. If the status is **X**, then the Dialer cannot connect to either CTI Server on side A or side B.

Try pinging from the Dialer to the CTI Server/PG machines by hostname and by IP address.

- If the ping fails for the IP address:
  - Recheck that the IP address is correct, and then troubleshoot network connectivity.
  - Check to see if the CTI Server processes are running.
- If the ping is successful for the IP address but not for the DNS hostname, check that the DNS hostname is correct and that it is properly configured in the system's DNS server.
- If the ping is successful, then recheck the Dialer component set up to see if the Dialer component set up contains the wrong address or port number for the CTI Server.
- Confirm that the PG is online. Check that the PG has been enabled properly in the ICM Router setup.

Dialer ports states

The first value, C, shows the total configured ports derived from the port map configuration. The second value, R, shows the total number of ports registered with Unified CM. Finally, the third value, B, indicates the number of Dialer ports that failed to register with Unified CM. The third value also reports the number of Dialer ports that are blocked. (This is a runtime activity; it is unusual for ports to be blocked.)

If the number of ports Configured is zero, then the Dialer is not receiving port configuration from the Campaign Manager component. Check to verify that ports are configured properly.

If the number of ports Registered is zero, then the Dialer component is having trouble registering with Unified CM.

- Check the TFTP server address in the Dialer component setup configuration.
- Confirm that the Unified CM is configured correctly. In particular, check if the port map has been imported and the ports have been registered to the JTAPI user for the IPCC PG.
- Confirm that the IPCC PG has been started.
- Confirm that the JTAPI Gateway has finished configuring. If it has not, wait for it to finish.
- Verify that Unified CM and CTI Manager are running.
- Check to see if DNS name (of your PG) is resolving the CUCM IP address

MR PIM connectivity status

This status is either **A** for active, **X** for disconnected, or **NR**, which means connected but not yet able to route. (The **U** status is rarely seen and indicates that a particular connectivity object within the Dialer has not been created yet.)

- If the MR Status is **X**, check the connectivity by performing the following steps:

- Ping the MR PG address by hostname or IP address.
- Double check the MR PG address and port configured in the Dialer component setup.

If the MR PG status is **NR**, then the Media Routing connection is established. Check to see if the MR PG is online by looking at its status window.

Verify Critical Configuration Steps

In the Dialer Configuration Component, click the Port Map Selection tab and ensure the Dialer is assigned to a Unified CM PG.

Verify Connectivity

First, verify that each Dialer can place calls on Unified CM. A diagnostic utility, DialogicTest, is installed on the Dialer machine in the \icm\bin directory. From the \icm\bin directory, execute DialogicTest to verify connectivity on Unified CCE installation.

Procedure

Step 1 For an Unified CCE installation, determine the Dialer's peripheral ID before executing the DialogicTest utility. This value can be obtained from the Dialer table stored in the Side A database of the ICM Logger. Using the SQL query analyzer, run the following query on the Side A database:

```
Select * from Dialer
```

Match the DialerName column with the Dialer that is being configured and note the peripheral ID (stored in the DialerID column). This ID is used when launching DialogicTest.

Note The Outbound Option IP Dialer *must* be shut down before running DialogicTest.

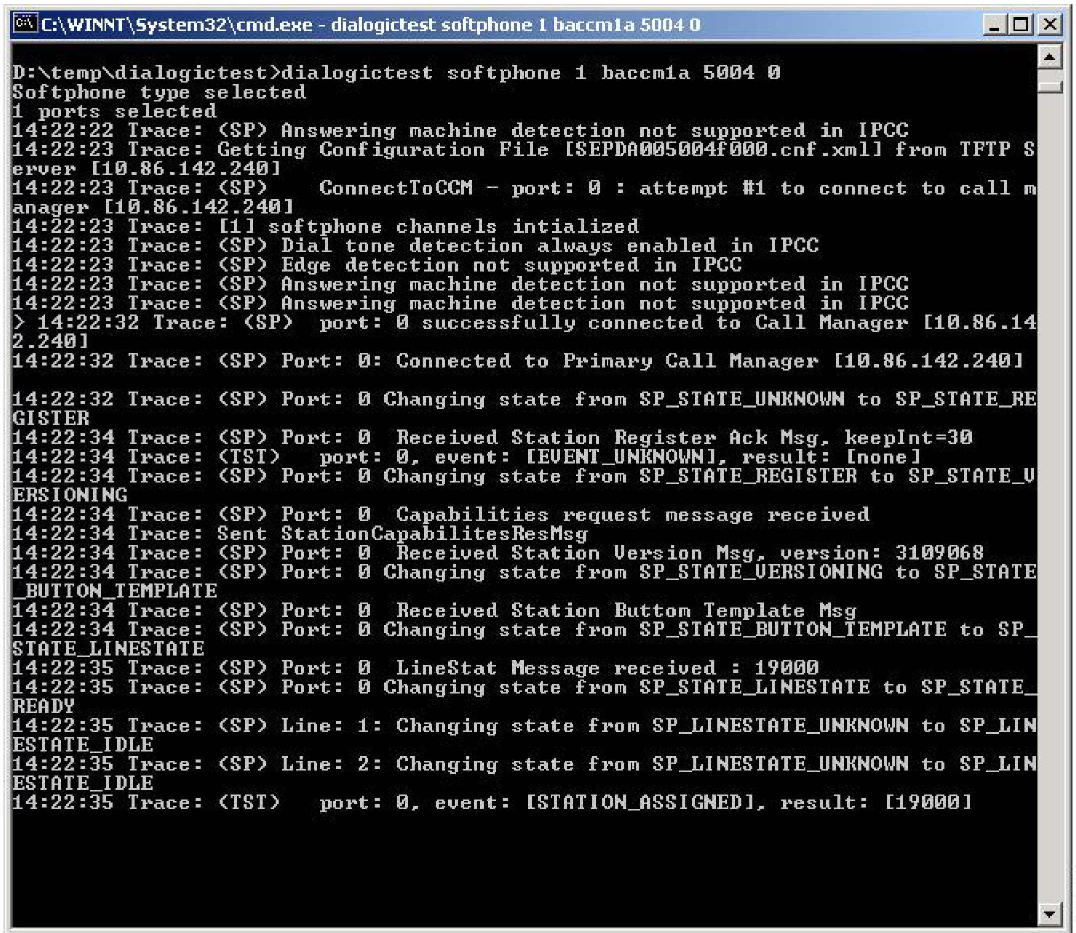
Step 2 From the \icm\bin directory on the Dialer, type the following to run the DialogicTest utility, type

```
Dialogictest softphone <number of ports in the Dialer port map> <CallManager name or IP
address> <dialer ID> <starting channelID> <custname>
```

where:

a) The *CallManager name or IP address* indicates the Unified CM TFTP server machine.
b) The *dialer ID* is the numeric identifier obtained above from the Dialer table.
c) The *starting channel ID* indicates the first port ID in the Dialer (usually 0). This creates simulated Dialer ports based on the port map configuration.
d) The *custname* is the ICM customer name.

Example:
The following example displays the command syntax and the output log messages.



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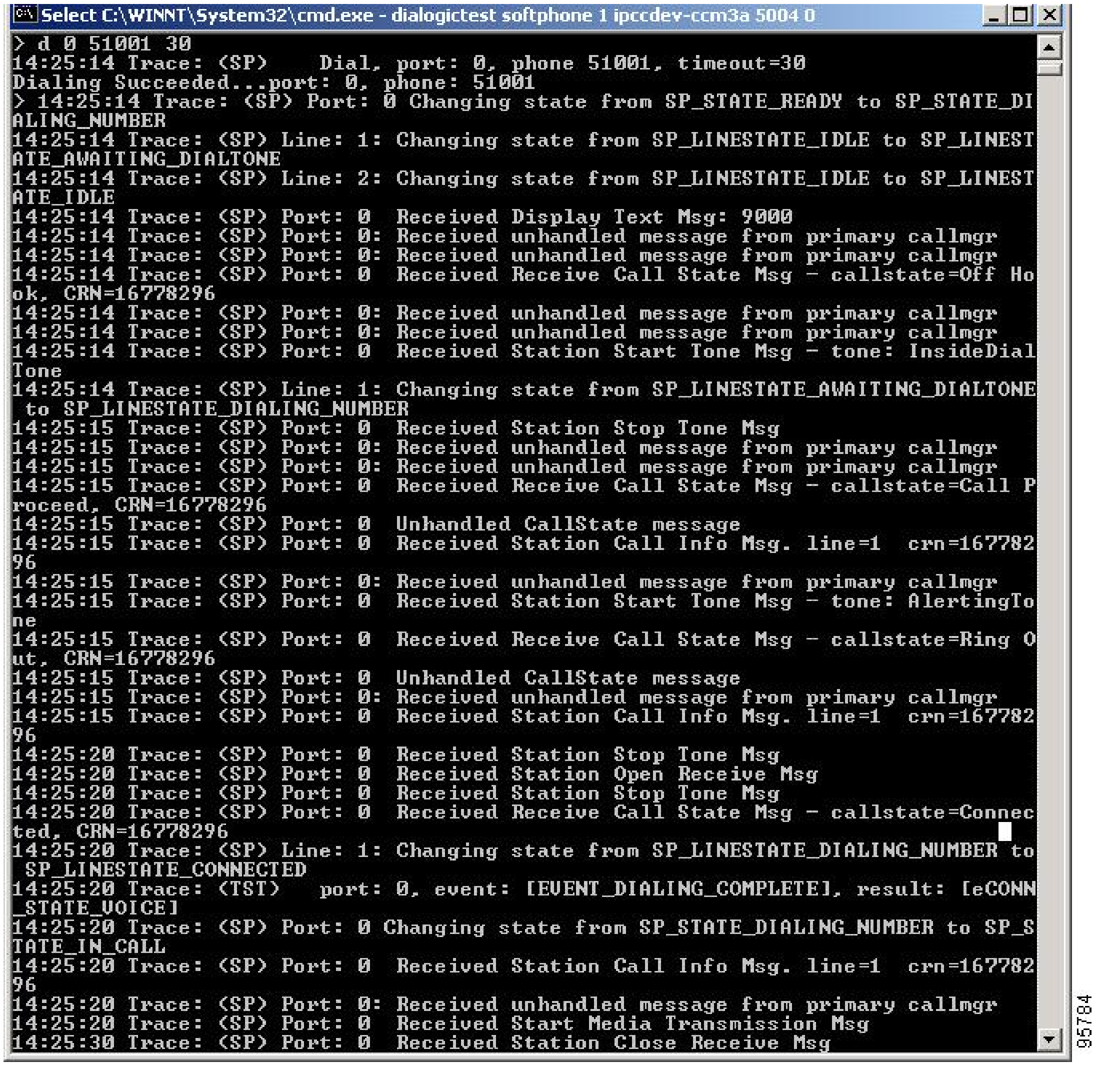
Step 3 Choose a phone station on the ACD that has a "caller ID" display and note its phone number. This phone station is called to validate connectivity between the Dialer and the station. Using DialogicTest, dial this station using the following syntax:

```
>d 0 <station #> 30
```

where *d* is the abbreviation for "Dial," *0* is the first channel in the port map, *station #* is the actual number to reach the phone station, and *30* represents the amount of time DialogicTest attempts to ring the phone station. For example, to dial station 51001, the command is >d 0 51001 30.

Example:

The following example displays the command syntax and the output log messages.



This syntax causes the phone station to ring and display the calling number, which is the station identifier of the first port in the Dialer port map. Answer the phone station and speak into the receiver. The DialogicTest utility notes that voice was detected. If the phone does not ring, the Dialer does not have basic connectivity with the switch and will not work properly. See the Cisco Docwiki for troubleshooting assistance.

Verify Dialer Port Map Configuration

Now that basic connectivity has been verified, it is important to verify that the port map which was configured in the Unified ICM configuration matches the configuration of the switch (or Unified CM for Unified CCE). The DialogicTest utility is also used for this process.

Note The Outbound Option IP Dialer *must* be shut down before running DialogicTest.

How to Verify the Dialer Port Map Configuration

Procedure

Step 1 Beginning with the first port of the port map (channel 0 in DialogicTest), dial the phone station used for testing above and verify that the calling number displayed on the station matches the first port configured in the Dialer port map in Unified ICM software.

Example:
For example, to dial station number 1234, use the following command:

```
>d 0 1234 30
```

Step 2 Hang up this channel by typing `>h 0` and move to the next channel (channel 1). Dial the phone station again, using a command similar to the following example:

Example:

```
>h 0 >d 0 1234 30
```

Verify that the calling number shown on the station matches the station number configured in the ICM Dialer port map.

Step 3 Hang up this channel by typing `>h 1` and move to channel 2. Continue this procedure for the entire port map to verify that the station numbers configured in Unified ICM software match the actual numbers on the switch. If there is a mismatch in this configuration, the Dialer will not work properly.
If the configuration is a Unified CCE configuration and the BAT tool was used to configure the devices on Unified CM, it is satisfactory to test only a few ports in the range. If the Dialer is connected to a switch using an Analog link, each port must be tested because it is possible to wire this connection incorrectly for a small number of ports. Incorrect wiring creates problems in the Dialer that are difficult to find.

Verify Database Configuration

The procedure varies for verifying that the database configuration is properly set up for SQL Server, depending on the installed version of SQL Server.

Procedure

For SQL Server 2008 R2 64bit, perform the following steps:

a) Open the SQL Server Management Studio.
b) Expand the databases.
c) Select the <*cust instance_baA*> Outbound Option database. Right click and select **Properties**.
d) Select the **Files** page.
e) In the database file row, click the button in the Autogrowth column. A Change Autogrowth dialog box appears.
f) Ensure that the Enable Autogrowth box is checked. Click **OK**.

g) In the log file row, click the button in the Autogrowth column. A Change Autogrowth dialog box appears.
h) Ensure that the Enable Autogrowth box is checked. Click **OK**.
i) Click the Options page.
j) On the Recovery Model drop-down menu, select **Simple**.
k) Click **OK**.

Verify Router Registry Key

If you are using the Transfer to IVR feature, verify that the following router registry key on Side A and Side B of the Router has a value of 2:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\<customer
      instance>\RouterA/B\Router\
      CurrentVersion\Configuration\Global\SkillGroupCallsInQTimerInterval = 2
```