



# Cisco Contact Center Gateway Deployment Example

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## Example Topology

This chapter provides an example of how to deploy a Cisco Contact Center Gateway. The procedures create a working example of a Parent/Child system. This example introduces you to the concepts and tasks that are involved in a successful deployment.



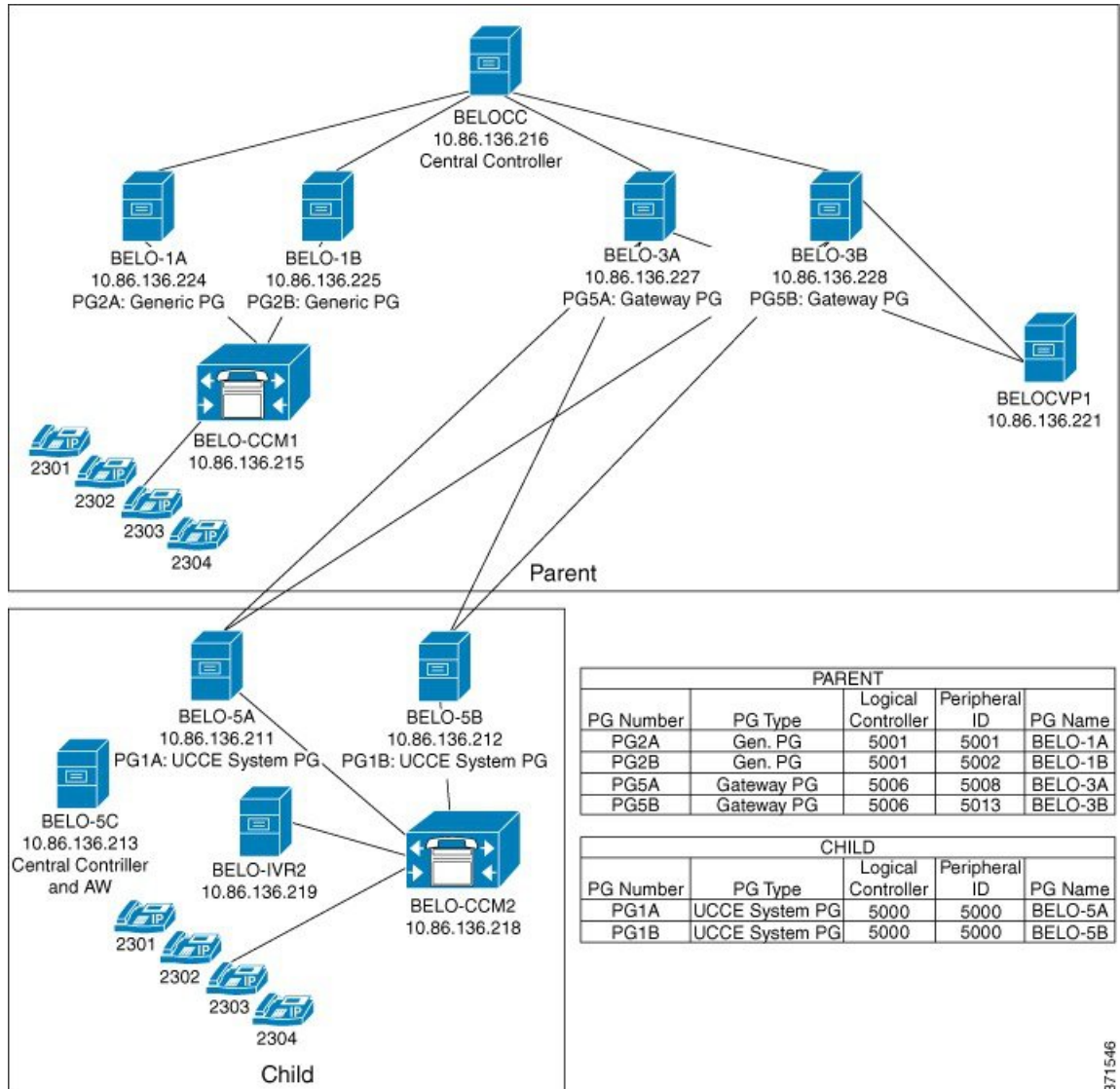
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**Note** The procedures show how to set up and configure one side of the redundant components. Set up and configure the other side on your own.

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The example is based on the illustrated deployment.

Figure 1: Example Deployment



The Parent site consists of these components:

- Central Controller (BELOCC)
- Redundant Generic PGs, PG2A (BELO-1A) and PG2B (BELO-1B), which interface with the parent Unified Communications Manager (BELO-CCM1)
- Unified Communications Manager (BELO-CCM1), which routes calls to these extensions: DNs 2301-2304
- CVP (BELO-CVP1)
- Redundant Unified CCE Gateway PGs, PG5A (BELO-3A) and PG5B (BELO-3B), which interface with the child redundant System PGs (PG1A and PG1B)

The Child site consists of these components:

- Redundant Unified CCE System PGs, PG1A (BELO-5A) and PG1B (BELO-5B), which interface between the parent redundant Unified CCE Gateway PGs (BELO-3A and BELO-3B) and the Unified Communications Manager (BELO-CCM2)
- Unified Communications Manager (BELO-CCM2), which routes calls to the local extensions (DNs 2301-2304) and to the IP IVR (BELO-IVR2)
- IP IVR (BELO-IVR2)
- A Central Controller and an Administration & Data Server (BELO-5C)

## Example Prerequisites

The example assumes that you:

- Installed the appropriate contact center software on each machine as described in *Cisco Unified Contact Center Enterprise Installation and Upgrade Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-guides-list.html>. The installation places the files into a machine's `\bin` directory.
- Are familiar with using the Domain Manager.
- Installed and configured the Unified Communications Manager.
- Configured the extensions (DNs) from 2301 to 2304.
- Configured the local route points in this table:

Route point	Target
2500	Any available skill group
2501	SG01
2502	SG02

- Added the Facility and the Instance.

## Deploy the Child System

To deploy the example child system, you perform the following tasks:

1. Run the Web Setup Tool to set up the child Administration & Data Server on BELO-5C.
2. Run the Web Setup Tool and ICMDBA to set up the child Central Controller (CC) on BELO-5C.
3. On the Administration & Data Server, run the Configuration Manager to add the System PGs. This task assigns the Logical Controller IDs (LCID) and the Peripheral IDs (PID) that are required during setup.
4. Run the PG Setup Tool on BELO-5A and BELO-5B to setup PG1A and PG1B, respectively.
5. Install and configure JTAPI, the CTI Server, and a desktop application on the System PGs.
6. Use the Configuration Manager tools to configure the Agents, Skill Groups, Skill Group Members, Dialed Numbers, and Call Types.
7. Use the Script Editor to manage Call Types, and to create and schedule routing scripts.

## Set Up Child Administration & Data Server

To set up the Administration & Data Server, run the Web Setup Tool for the Administration & Data Server on BELO-5C.

### Procedure

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- Step 1** Run the **Web Setup Tool** on the computer designated as the child Central Controller (BELO-5C).
- Step 2** Click **Instance Management**, then click **Add**. The **Add Instance** dialog appears.
- Step 3** Select **BELO** (the Facility), then **bh03** (the Instance to add).
- Step 4** Click **Save**.
- Step 5** Select **Administration & Data Server**, then click **Add**. The **Add Administration & Data Server** dialog appears.
- Step 6** Set the deployment model.
- Select **bh03** (the Instance) from the drop-down menu.
  - Select **Enterprise** as the deployment type.
  - Select **Small to Medium** for the deployment size.
  - Click **Next**.
- Step 7** Set the role for the Administration & Data Server.
- Select **Administration Server** and **Real-time Reporting**.
  - Click **Next**.
- Step 8** Set the Administration & Data Server connectivity.
- Select **Primary Administration & Data Server**.
  - Enter **BELO-5C** as the **Secondary Administration & Data Server**.  
You use the same Administration & Data Server as the primary for the secondary since there is only one.
  - Enter **BELO-5C-Site1** for the site name.
  - Click **Next**.
- Step 9** Set the database and options by accepting the default settings, then click **Next**.
- Step 10** Set the Central Controller connectivity.
- Enter **BELO-5C** into each name field.
  - Ensure that the Central Controller Domain is set to **BELODC.cisco.com**.
  - Select **Side A Preferred**.
  - Click **Next**.  
The Summary window appears.
- Step 11** Verify that all settings are correct, then click **Next**.  
The system configures the Administration & Data Server. Then the **Administration & Data Server** window appears and displays the Administration & Data Server information.
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## Set Up Child Central Controller

To set up the child Central Controller, you first run the Web Setup Tool for the CallRouter and then run the ICMDDBA to create the Logger database. You perform both tasks on the Central Controller virtual machine (BELO-5C).

### Set Up Child CallRouter

Run the Web Setup Tool on BELO-5C.

#### Procedure

---

- Step 1** Run the Web Setup Tool.
- Step 2** Click **Routers**.
- Step 3** Click **Add** to set up the CallRouter.  
The **Deployment** dialog appears.
- Step 4** On the **Deployment** dialog:
- Ensure that the **Instance** is set to **bh03**.
  - Select **Side A**.
  - Select the appropriate **Fault Tolerance** mode, either **Simplex** or **Duplex**.
  - Click **Next**.
- The **Router Connectivity** dialog appears.
- Step 5** Ensure all the fields indicate **BELO-5C**, then click **Next**.  
The **Enable Peripheral Gateways** dialog appears.
- Step 6** Enter **1** to indicate the number of PGs that you are deploying, then click **Next**.  
The **Router Options** dialog appears.
- Step 7** Leave all settings at the default (nothing selected) and click **Next**.  
The **Summary** dialog appears.
- Step 8** Ensure that the Router summary is correct, then click **Finish**.  
When the CallRouter setup completes, the **Router successfully saved** window appears.
- 

### Set Up Child Logger

To set up the child Logger on BELO-5C, you create a Logger database and then run the Web Setup Tool.

#### Procedure

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- Step 1** Choose **Start > All Programs > Unified ICM-CCE Tools > ICMDDBA**.
- Step 2** Create the Logger database.  
For detailed information on creating a Logger database, see the *Administration Guide for Cisco Unified Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-maintenance-guides-list.html>.
- Step 3** Run the Web Setup Tool.

- Step 4** Click **Loggers**.  
The **Logger** dialog appears.
- Step 5** Click **Add** to set up the Logger.  
The **Deployment** dialog appears.
- Step 6** On the **Deployment** dialog:
- Ensure that the **Instance** is set to **bh03**.
  - Ensure that the **Logger Type** is set to **Enterprise**.
  - Select **Side A**.
  - Select the appropriate **Fault Tolerance** mode, either **Simplex** or **Duplex**.
  - Click **Next**.
- The **Central Controller Connectivity** dialog appears.
- Step 7** Ensure that the **Router Private Interfaces** (Side A and Side B) and the **Logger Private Interfaces** (Side A and Side B) are set to **BELO-5C**. Then, click **Next**.  
The **Additional Options** dialog appears.
- Step 8** Leave the default settings and click **Next**.  
The **Summary** dialog appears.
- Step 9** Ensure that the Logger summary is correct, then click **Finish**.  
When the Logger setup completes, the **Logger successfully saved** window appears.

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### What to do next

You have added an Administration & Data Server and a Central Controller to the Child system. Exit the Web Setup Tool. On the child Administration & Data Server, open the ICM Service Control and start the distributor, logger, and router processes.

## Add System PGs on Child Administration & Data Server

On the Administration & Data Server, run the Configuration Manager to add the System PGs.

### Configure System PGs

Use the Configuration Manager tools to add and configure the System PGs.

#### Procedure

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- Step 1** Choose **Start > All Programs > Cisco Unified CCE Tools > Administration Tools > Configuration Manager**.
- Step 2** Start the **PG Explorer Tool** and click **Retrieve**.
- Step 3** Click **Add PG** to create both the Peripheral Gateway and the Peripheral.
- Enter **UCCE** for the **Name**.
  - Select **UCCE System** for the **Client Type**.
  - If no desk settings are set, set them and click **OK**.  
The **Agent Desk Settings List Tool** appears.
  - Click **Add**.  
The **Attribute** tab appears.

- e) Enter **default** for the **Name**.
- f) Leave all other settings at their defaults and click **Save**.
- g) Close the **Agent Desk Settings List Tool**.

**Step 4**

Go back to the **PG Explorer Tool**.

- a) Select **UCCE-1** as the **Peripheral**.
- b) On the **Peripheral** tab, set the **Default Desk Settings** to **default**.
- c) On the **Agent Distribution** tab, click **New**.
- d) Set the **Administration & Data Server site name** to **BELO-5C-Site 1** and leave all other settings at their defaults.
- e) On the **Routing Client** tab, enter **UCCE\_RC** for the **Name** and leave all other settings at their defaults.
- f) Click **Save**.  
The Logical Controller tab now indicates the Logical Controller ID (5000) and the Physical Controller ID (5000).

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**What to do next**

The Central Controller setup and configuration is complete. You can now install and set up the Peripheral Gateways to communicate with the Central Controller.

## Add Instances on Child System

Use the Web Setup Tool to add the Instance on the child System PG virtual machines BELO-5A (PG1A) and BELO-5B (PG1B).

**Procedure**

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- Step 1** Enter **http://BELO-5B/setup** (or BELO-5A, for the other side) and log in to the Web Setup Tool to add the Instance.  
The main **Web Setup Tool** window appears.
  - Step 2** Click **Instance Management**, then click **Add**.  
The **Add Instance** dialog appears.
  - Step 3** Select **BELO** (the Facility) and then **bh03** (the Instance to add).
  - Step 4** Click **Save**.
  - Step 5** Click **Log Out**.
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## Set Up System PGs

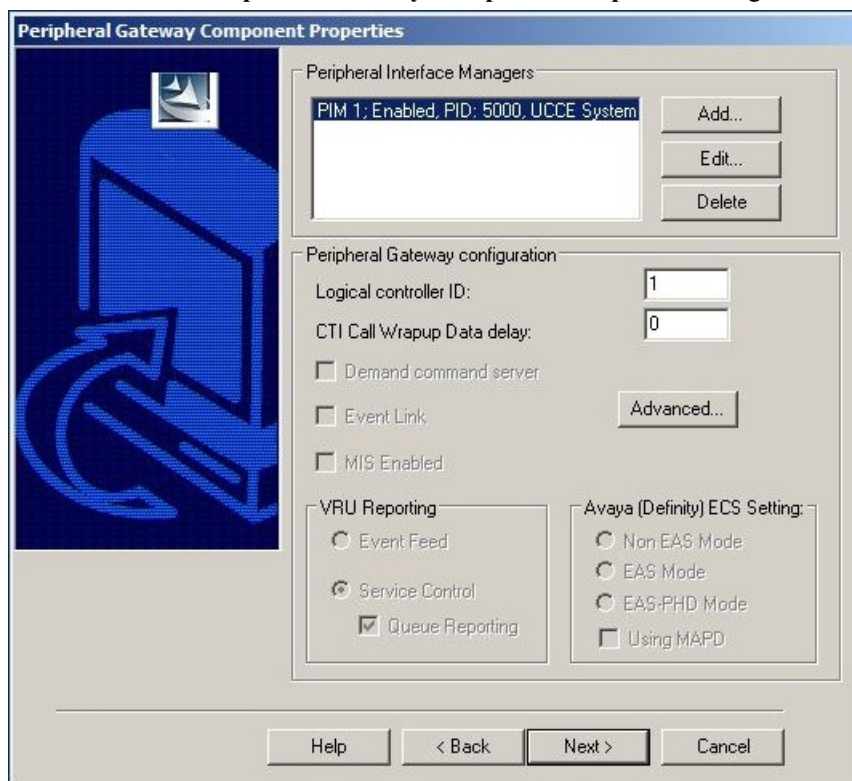
Use the PG Setup Tool to add and configure the System PGs. This example procedure sets up Side B of PG1.

**Procedure**

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- Step 1** Click **PG Setup Tool**.  
The main PG Setup Tool window appears.

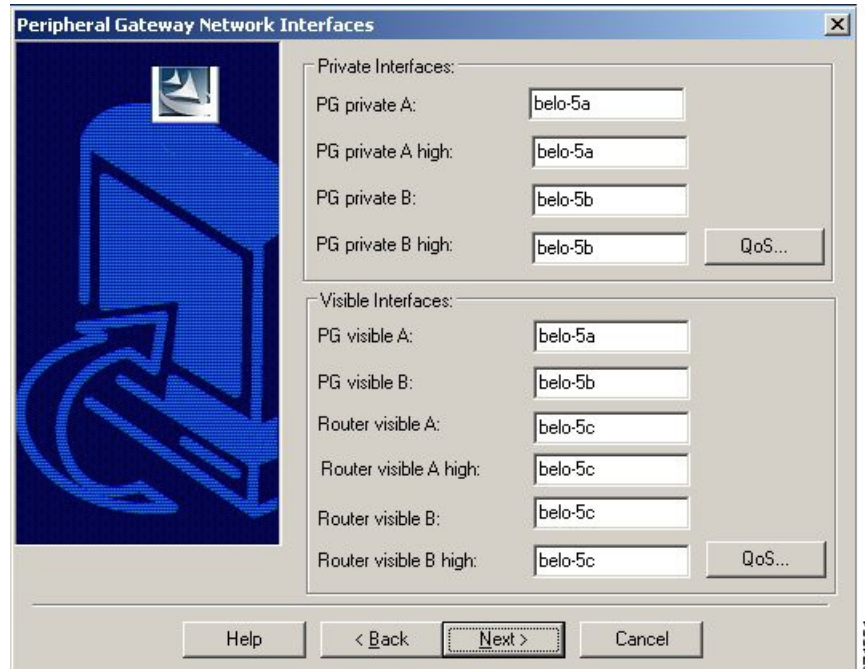
- Step 2** Click **Add** in the **Instance Component** section.  
The **ICM/CCEComponent Selection** dialog appears.
- Step 3** Select **Peripheral Gateway**.  
The **Peripheral Gateway Properties** dialog appears.
- Step 4** Ensure that all check boxes in the **Node Manager Properties** section are checked.
- Step 5** Ensure that **PG1** and the appropriate side are selected in the **PG Node Properties** dialog.
- Step 6** Select **UCCE System** for the **Client Type**, then click **Add**.
- Step 7** Click **Next**.  
The **Peripheral Gateway Component Properties** dialog appears.
- Step 8** Click **Add**.  
The **Add PIM** dialog appears.
- Step 9** Select **UCCE System** and **PIM 1**, then click **OK**.  
The **UCCE System Configuration (PIM1)** dialog appears.
- Step 10** Check **Enabled**.
- Step 11** Add the **PID** of **5000**.
- Step 12** Enter an **Agent Extension Length** of **4**.
- Step 13** Set the **Service** to **10 . 86 . 136 . 218** (the IP address of the Unified Communications Manager BELO-CCM2).
- Step 14** Enter **BELO** for the **User Id** (an application user created on the Unified Communications Manager).
- Step 15** Enter **cisco** for the **User password** (set in the Unified Communications Manager).
- Step 16** Click **OK**.  
You return to the **Peripheral Gateway Component Properties** dialog.



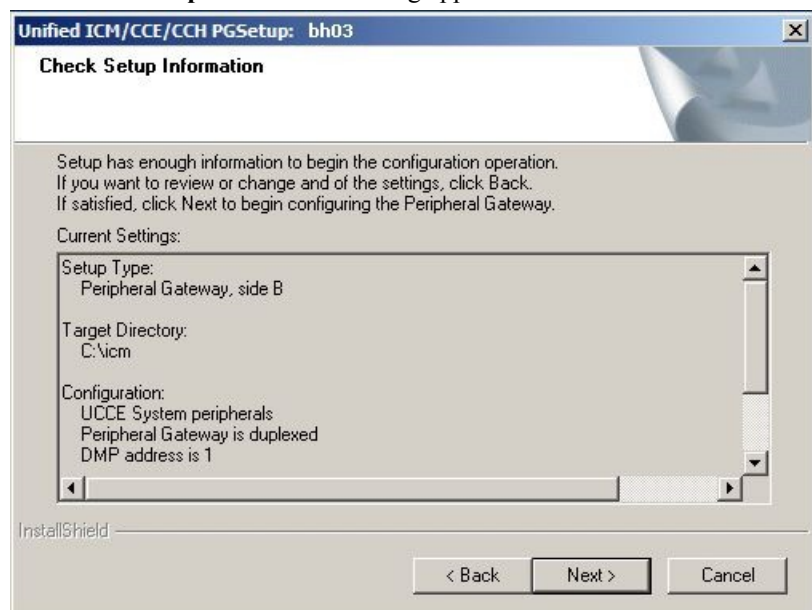
- Step 17** Change the **LCID** to **5000** (the same LCID that you used in the PG Explorer Tool).



- Step 18** Click **Next**.  
The **Device Management Protocol Properties** dialog appears.
- Step 19** Leave all settings at their default values and click **Next**.  
The **Peripheral Gateway Network Interfaces** dialog appears.



- Step 20** Set the PG fields to **BELO-5A** and **BELO-5B**, as applicable.
- Step 21** Set the Router fields to **BELO-5C**.
- Step 22** Click **Next**.  
The **Check Setup Information** dialog appears.



- Step 23** If all the settings are correct, click **Next**.

- After the System PG setup completes, the **Setup Complete** dialog appears.
- Step 24** Click **Finish**.  
You return to the main PG Setup Tool window.
- Step 25** Click **Exit Setup**.
- Step 26** Go to the Unified Communications Manager, then download and install the JTAPI plugin for Windows on the System PGs.
- Select **Application > Plugins**.
  - Click **Find**.
  - Next to **Cisco JTAPI for Windows**, click **Download**.
  - Install the downloaded file, `ciscojtapiclient.exe`, accepting all the default settings.
- Step 27** Start the PG1A and PG1B services on each System PG (BELO-5A and BELO-5B).
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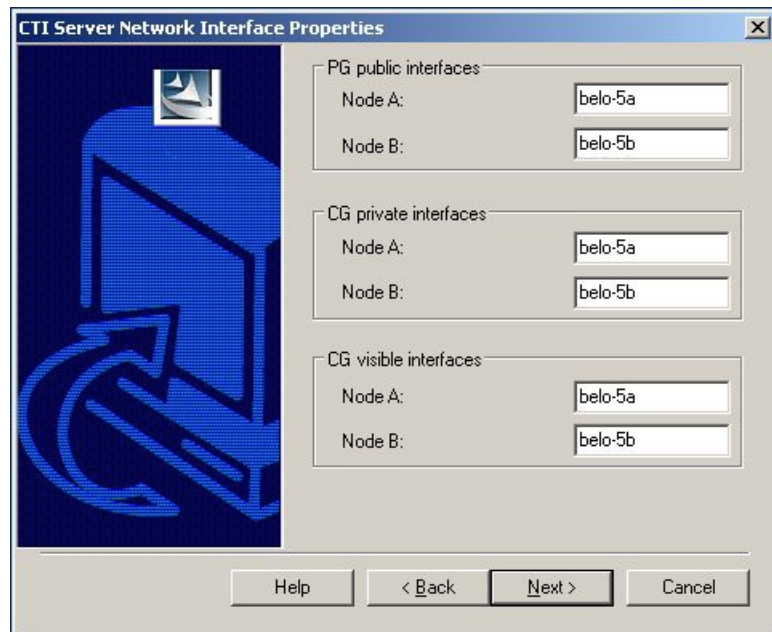
## Install CTI Server on Child System

Use the PG Setup Tool to install CTI Server on the System PGs (BELO-5A and BELO-5B). In this section, you install CTI Server on side B of PG1.

### Procedure

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- Step 1** Using Service Control, stop the PG service.
- Step 2** Start the PG Setup Tool.  
The **Cisco Unified ICM/Contact Center Enterprise Components Setup** dialog appears.
- Step 3** Click **Add** in the **Instance Components** section.  
The **ICM/CCE Component Selection** dialog appears.
- Step 4** Select **CTI Server**.  
The **CTI Server Properties** dialog appears.
- Step 5** Check **Duplexed CTI Server** and ensure that all the other check boxes are checked as well.
- Step 6** Select **CG 1** as the **CG Node ID**.
- Step 7** Enter **1** for the **ICM system ID** (the same as the Device Management Protocol (DMP) and the PG ID).
- Step 8** Click **Next**.  
The **CTI Server Component Properties** dialog appears.
- Step 9** Leave the default port setting of **43147**, then click **Next**.  
The **Network Interface Properties** dialog appears.



- Step 10** Enter **BELO-5A** and **BELO-5B** as applicable, then click **Next**.  
The **Check Setup Information** dialog appears.
- Step 11** Check that all settings are correct, then click **Next**.  
The **Setup Complete** dialog appears.
- Step 12** Click **Finish**.  
You return to the main PG Setup window.
- Step 13** Click **Exit Setup**.
- Step 14** Start the PG and CG services using the ICM/CCE Service Control application and check to ensure that they are running properly.

## Install Desktop Application on System PGs

You can install a desktop application on the PGs to enable testing. You can use any desktop application (CTI OS, or custom desktops) for this purpose.

## Configure Agents on Child Central Controller

Use the Configuration Manager Agent Explorer tool to configure agents on the child Central Controller.

### Procedure

- Step 1** Start the **Agent Explorer** tool.
- Step 2** On the main window of the Agent Explorer tool, click **Retrieve**.
- Step 3** Click **Add Agent**.  
The **Agent** tab appears.

- Step 4** Complete all the fields except the **Password** and the **Peripheral Name** fields. The agent name information appears in the list, as with all Explorer tools.
  - Step 5** Add at least three agents.
  - Step 6** Save your work and close the Agent Explorer tool.
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## Configure Skill Groups on Child Central Controller

Use the Configuration Manager Skill Group Explorer Tool to configure skill groups SG01 and SG02 on the child Central Controller.

### Procedure

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- Step 1** Start the **Skill Group Explorer Tool**.
  - Step 2** On the main window of the Skill Group Explorer Tool, click **Retrieve**.
  - Step 3** Click **Add Skill Group**. The **Skill Group** tab appears.
  - Step 4** Complete all the fields and click **OK**. The skill group name appears in the list, as with all Explorer tools.
  - Step 5** Select the **Skill Group Member** tab and click **Add**. The **Add Skill Group Member** dialog appears.
  - Step 6** Select the agents to add to the skill group, then click **OK**. The agents become members of the skill group.
  - Step 7** Select the skill group in the tree list, then click **Add Route**. The **Route** tab appears.
  - Step 8** Provide the **Route Name** and click **Save**. The route name appears in the tree list and the skill group is added to the peripheral.
  - Step 9** Add one more skill group.
  - Step 10** Save your work and close the Skill Group Explorer Tool.
- 

## Configure Dialed Numbers on Child Central Controller

Use the Configuration Manager Dialed Number/Script Selector List Tool to configure dialed numbers on the child Central Controller.

### Procedure

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- Step 1** Start the **Dialed Number/Script Selector List Tool**.
- Step 2** On the main window of the Dialed Number/Script Selector List Tool, click **Retrieve**.
- Step 3** Click **Add**. The **Dialed Number Attributes** tab appears.
- Step 4** Select **UCCE\_RC** as the **Routing Client**.

- Step 5** Select **Cisco\_Voice** for the **Media Routing Domain**.
- Step 6** Set the **Dialed Number String/Script Selector** to **2500** (the route point set up on the Unified Communications Manager).
- Step 7** Set **UCCE\_RC\_2500** as the **Name**, then select **bh03** as the **Customer** setting.
- Step 8** Check **Permit Application Routing** on the route points controlled by the Parent (the Post route points and the Translation route points).  
This option provides the link between the Parent and the Child. The option gives the Parent visibility to the Dialed Number so that the Parent can handle the DN.
- Step 9** Click **Save**.  
The dialed number appears in the tree list.
- Step 10** Add two more dialed numbers (one for each skill group).  
When complete, you have the following DNs:
- 2500, which is named UCCE\_RC\_2500 and connects to all the skill groups.
  - 2501, which is named UCCE\_RC\_2501 and connects to SG01.
  - 2502, which is named UCCE\_RC\_2502 and connects to SG02.
- Step 11** Save your work and close the Skill Group Explorer Tool.
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## Configure Call Types on Child Central Controller

Use the Configuration Manager Call Type List tool to configure call types on the child Central Controller.

### Procedure

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- Step 1** Start the Call Type List tool.
- Step 2** On the main window of the Call Type List tool, click **Retrieve**.
- Step 3** Click **Add**.  
The **Call Type Attributes** tab appears.
- Step 4** Set **internal\_2500CT** as the **Name**, then select **bh03** as the **Customer** setting.
- Step 5** Click **Save**.  
The call type appears in the tree list.
- Step 6** Add two more call types (internal\_2501CT and internal\_2502CT).  
When complete, you have the following call types: internal\_2500CT, internal\_2501CT, and internal\_2502CT.
- Step 7** Save your work and close the Call Type List tool.
- 

## Create and Schedule Routing Scripts on Child

A routing script determines how a call is handled by establishing the routing rules. In this section, you create a routing script and schedule it. You can then log in agents and have them make and accept calls.

For more information about scripting, see *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-user-guide-list.html>.

### Procedure

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- Step 1** Start the Script Editor application on the Administration & Data Server.
- Step 2** Create the first routing script, named **internal\_2500**.
- Set the **Skill Group** node to **UCCE\_1.Cisco\_Voice.SG01** and **UCCE\_1.Cisco\_Voice.SG02**.
  - Set the **Queue to Skill Group** node to **UCCE\_1.Cisco\_Voice.SG01** and **UCCE\_1.Cisco\_Voice.SG02**.
  - Set the **Wait** node to **10** seconds.
- Step 3** Save the script.
- Step 4** Choose **Script > Call Type Manager**.  
The **Call Type Manager** appears.
- Step 5** Select **Media Routing Domain** and **Dialed Number**.  
This setting associates the call type with the dialed number.
- Step 6** Click **Add**.  
The **Dialed Number Entry** dialog appears.
- Step 7** Associate the dialed number with the call type by selecting **internal\_2500CT** (the call type), then click **OK**.
- Step 8** To schedule the routing script, click the **Schedule** tab.
- Step 9** Click **Add**.  
The **Call Type Scheduling** dialog appears.
- Step 10** Accept all the default settings on each of the rest of the tabs, then click **OK**.  
You return to the **Call Type Manager**.
- Step 11** Click **OK**.  
You now have a system that allows you to log in agents and have them make and accept calls.
- 

## Deploy the Parent System

To deploy the example parent system, you perform the following tasks:

- Run the Web Setup Tool to set up the Administration & Data Server on BELO-CC.
- Run the Web Setup Tool and ICMDDBA to set up the Central Controller (CC) on BELO-CC. You use the Web Setup Tool to set up the CallRouter and Logger and the ICMDDBA to create the Logger database.
- On the Administration & Data Server, run the Configuration Manager to add the Enterprise Gateway PGs (BELO-3A and BELO-3B). This step assigns the Logical Controller IDs (LCID) and the Peripheral IDs (PID) required during setup.
- Run the PG Setup Tool on BELO-3A and BELO-3B to setup PG5A and PG5B, respectively.
- Configure and set up the Generic PGs. Install and configure JTAPI, the CTI Server, and a desktop application on the generic PG.
- Use the Configuration Manager tools to configure the Agents, Skill Groups, Skill Group Members, Dialed Numbers, and Call Types.
- Use the Script Editor to manage Call Types, and to create and schedule routing scripts.

## Set Up Parent Administration & Data Server

To set up the Administration & Data Server, run the Web Setup Tool for the Administration & Data Server on BELO-CC.

Follow the same procedure as [Set Up Child Administration & Data Server, on page 4](#).

## Set Up Parent Central Controller

To set up the parent Central Controller, you first run the Web Setup Tool for the CallRouter and then run the ICMDDBA to create the Logger database. You perform both tasks on the Central Controller virtual machine (BELO-CC).

## Set Up Parent CallRouter

Run the Web Setup Tool on BELO-CC.

Follow the same procedure as [Set Up Child CallRouter, on page 5](#).

## Set Up Parent Logger

To set up the parent Logger on BELO-CC, you create a Logger database and then run the Web Setup Tool.

### What to do next

You have added an Administration & Data Server and a Central Controller to the Parent system. Exit the Web Setup Tool. On the parent Administration & Data Server, open the ICM Service Control and start the distributor, logger, and router processes.

Follow the same procedure as [Set Up Child Logger, on page 5](#).

## Add Enterprise Gateway PGs on Parent Administration & Data Server

On the Administration & Data Server, run the Configuration Manager to add the Enterprise Gateway PGs.

## Configure Enterprise Gateway PGs

Use the Configuration Manager tools to add and configure the Enterprise Gateway PGs.

### Procedure

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- |               |   |
|---------------|---|
| <b>Step 1</b> | Select <b>Start &gt; All Programs &gt; Cisco Systems, Inc. &gt; Administration &amp; Data Server Tools &gt; Configuration Manager</b> .                       |
| <b>Step 2</b> | Start the <b>PG Explorer Tool</b> and click <b>Retrieve</b> .   |
| <b>Step 3</b> | Click <b>Add PG</b> to create both the Peripheral Gateway and the Peripheral.<br>a) Enter <b>ACMI</b> for the <b>Name</b> .<br>b) Select <b>Client Type</b> . |
| <b>Step 4</b> | Go back to the <b>PG Explorer Tool</b> .<br>a) Select <b>ACMI-1</b> as the <b>Peripheral</b> .  |

- b) On the **Agent Distribution** tab, click **New**.
  - c) Set the **Administration & Data Server site name** to **BELO-CC-Site 1** and leave all other settings at their defaults.
  - d) On the **Routing Client** tab, enter **ACMI-1\_RC** for the **Name** and leave all other settings at their defaults.
  - e) Click **Save**.  
The **Logical Controller** tab now indicates the Logical Controller ID (5006), the Physical Controller ID (5006), and the Peripheral ID(5000).
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## Add Instance on Parent System

Use the Web Setup Tool to add the Instance on the parent Enterprise Gateway PG virtual machines BELO-3A (PG5A) and BELO-3B (PG5B).

### Procedure

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- Step 1** Enter **http://BELO-3B/setup** (or BELO-3A, for the other side) and log in to the Web Setup Tool to add the Instance.  
The main **Web Setup Tool** window appears.
  - Step 2** Click **Instance Management**, then click **Add**.  
The **Add Instance** dialog appears.
  - Step 3** Select **BELO** (the Facility) and then **bh01** (the Instance to add).
  - Step 4** Click **Save**.
  - Step 5** Click **Log Out**.
- 

## Set Up Enterprise Gateway PGs

Use the PG Setup Tool to set up the Enterprise Gateway PG virtual machines BELO-3A (PG5A) and BELO-3B (PG5B).

### Procedure

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- Step 1** Click **PG Setup Tool**.
- Step 2** Click **Add** in the **Instance Component** section.  
The **ICM/CCE Component Selection** dialog appears.
- Step 3** Select **Peripheral Gateway**.  
The **Peripheral Gateway Properties** dialog appears.
- Step 4** Ensure that all check boxes in the **Node Manager Properties** section are checked.
- Step 5** Ensure that **PG5** and the appropriate side are selected in the **PG Node Properties** dialog.
- Step 6** Select **UCC Enterprise Gateway** for the **Client Type**, then click **Add**.
- Step 7** Click **Next**.  
The **Peripheral Gateway Component Properties** dialog appears.
- Step 8** Click **Add**.



The **Add PIM** dialog appears.

- Step 9** Select **UCCE Enterprise Gateway** and **PIM 1**, then click **OK**.  
The **UCCE Enterprise Gateway Configuration (PIM1)** dialog appears.
- Step 10** Check **Enabled**.

**Note** The Peripheral ID is for Unified CCE and is set based on your system configuration.

**Note** During the installation of the Unified CCE Gateway PG on a Unified CCE child, the child System PG's Peripheral ID is read from the parent Unified ICM's PG\_ICID registry variable.

- Step 11** Add the **PID** of **5008** for the UCCE Enterprise Gateway PG on the Parent.
- Step 12** Enter **BELO-5A** for the System PGA name.
- Step 13** Enter **42027** for the System PGA port (the CTI Server port).
- Step 14** Enter **BELO-5B** for the System PGB name.
- Step 15** Enter **43027** for the System PGB port (the CTI Server port).
- Step 16** Enter **5000** for the Child System PG **PID**.
- Step 17** Click **OK**.  
You return to the **Peripheral Gateway Component Properties** dialog.
- Step 18** Change the **LCID** to **5006** (the same LCID that you used in the PG Explorer Tool).
- Step 19** Click **Next**.  
The **Device Management Protocol Properties** dialog appears.
- Step 20** Leave all settings at their default values and click **Next**.  
The **Peripheral Gateway Network Interfaces** dialog appears.
- Step 21** Set the PG fields to **BELO-3A** and **BELO-3B**, as applicable.
- Step 22** Set the Router fields to **BELO-CC**.
- Step 23** Click **Next**.  
The **Check Setup Information** dialog appears.
- Step 24** If all the settings are correct, click **Next**.  
The Enterprise Gateway PGs are set up.

- Step 25** Click **Finish**.  
You return to the main PG Setup Tool window.
- Step 26** Click **Exit Setup**.
- Step 27** Start the PG5A and PG5B services on each Enterprise Gateway PG (BELO-3A and BELO-3B).
- 

## Configure and Set up Generic PGs

You have set up the Systems PGs and the Enterprise Gateway PGs. Use the same tools to set up the Generic PGs (PG2A on BELO-1A and PG2B on BELO-1B). You can find the necessary information in the illustration of the example topology.

### Related Topics

[Example Topology](#), on page 1

## Install CTI Server on Parent System

Use the PG Setup Tool to install CTI Server on the Generic PGs (PG2A and PG2B).

### Procedure

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- Step 1** Using Service Control, stop the PG service.
- Step 2** Start the PG Setup Tool.  
The **Cisco Unified ICM/Contact Center Enterprise Components Setup** dialog appears.
- Step 3** Click **Add** in the **Instance Components** section.  
The **ICM/CCE Component Selection** dialog appears.
- Step 4** Select **CTI Server**.  
The **CTI Server Properties** dialog appears.
- Step 5** Check **Duplexed CTI Server** and ensure that all the other check boxes are checked as well.
- Step 6** Select **CG 2** as the **CG Node ID**.
- Step 7** Enter **2** for the **ICM system ID** (the same as the Device Management Protocol (DMP) and the PG ID).
- Step 8** Click **Next**.  
The **CTI Server Component Properties** dialog appears.
- Step 9** Leave the default port setting of **42147**, then click **Next**.  
The **Network Interface Properties** dialog appears.
- Step 10** Enter **BELO-1A** and **BELO-1B** as applicable, then click **Next**.  
The **Check Setup Information** dialog appears.
- Step 11** Check that all settings are correct, then click **Next**.  
The **Setup Complete** dialog appears.
- Step 12** Click **Finish**.  
You return to the main PG Setup window.
- Step 13** Click **Exit Setup**.

- Step 14** Start the PG and CG services using the ICM/CCE Service Control application and check to ensure that they are running properly.
- 

## Install Desktop Application on Generic PGs

You can install a desktop application on the PGs to enable testing. You can use any desktop application (Cisco Finesse, CTI OS, or custom desktops) for this purpose.

## Autoconfiguration with Enterprise Gateway

For Contact Center Gateway deployments with a Unified CCE child, you configure Call Types as Services. By default, autoconfiguration is enabled in the Peripheral tab of the PG Explorer. Autoconfiguration takes effect when the PG starts.

When autoconfiguration occurs between the parent Unified ICM and the child Unified CCE, the following Unified ICM tables are populated:

1. Agent/Person
2. Skill Group
3. Service



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**Note** Autoconfiguration of like entities occur on the parent for Agent and Skill Group, but not for Call Type (child) and Service (parent).

---

Default skill groups on the child, which are not viewable, get created as real skill groups on the parent. Activity done in the default skill group on the child shows up in these real skill groups on the parent.

Set up the Service members on the parent. To set up the service members for any given service, examine the script for a call type on the child. Note the skill groups to which the script offers the call. On the parent, use that list of skill groups to make service members for that Service.



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**Note** Autoconfiguration does not provide complete configuration for Unified ICM software. Autoconfiguration only configures agents, services, skill groups, and skill group members. You must set up many other elements, such as dialed numbers, scripts, peripheral targets, and routes, manually.

---

If any error occurs during autoconfiguration, the keys on the parent do not update. The Unified CCE PIM uploads the entire child configuration for comparison every time that the PIM starts until no configuration errors are encountered.

Configuration changes on the child Unified CCE do not get correctly reflected on the parent while the Unified CCE Gateway PG is stopped. Manually update the parent with any changes to the peripheral numbers (of agents or skill groups) on the child.



**Note** In Parent/Child deployment type, the agent name is automatically configured for the customer. Spaces are not allowed in agent IDs. In a specific scenario, if a child agent is created with a space or a "-", in either the First Name or Last Name field, the name are not created on the parents.

## Configure Dialed Numbers on Parent Central Controller

Use the Configuration Manager Dialed Number/Script Selector List Tool to configure dialed numbers on the parent Central Controller.

### Procedure

- 
- Step 1** Start the **Dialed Number/Script Selector List Tool**.
- Step 2** On the main window of the Dialed Number/Script Selector List Tool, click **Retrieve**.
- Step 3** Click **Add**.  
The **Dialed Number Attributes** tab appears.
- Step 4** Select **ACMI\_RC** as the **Routing Client**.
- Step 5** Select **Cisco\_Voice** for the **Media Routing Domain**.
- Step 6** Set the **Dialed Number String/Script Selector** to **2500** (the route point set up on the Unified Communications Manager).
- Step 7** Set **ACMI\_RC\_2500** as the **Name**, then select **bh01** as the **Customer** setting.
- Step 8** Check **Permit Application Routing** on the route points controlled by the child (the Post route points and the Translation route points).  
This option is enabled on the child system for those route points where the requests are re-directed towards CTI server / parent ACMI PG, instead of the child Router.
- Step 9** Click **Save**.  
The dialed number appears in the tree list.
- Step 10** Add two more dialed numbers (one for each skill group).  
When complete, you have the following DNs:
- 2500, which is named ACMI\_RC\_2500 and connects to all the skill groups.
  - 2501, which is named ACMI\_RC\_2501 and connects to SG01.
  - 2502, which is named ACMI\_RC\_2502 and connects to SG02.
- Step 11** Save your work and close the Skill Group Explorer Tool.
- 

## Configure Call Types on Parent Central Controller

Use the Configuration Manager Call Type List tool to configure call types on the parent Central Controller.

## Procedure

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- Step 1** Start the Call Type List tool.
- Step 2** On the main window of the Call Type List tool, click **Retrieve**.
- Step 3** Click **Add**.  
The **Call Type Attributes** tab appears.
- Step 4** Set **internal\_2500CT** as the **Name**, then select **bh03** as the **Customer** setting.
- Step 5** Click **Save**.  
The call type appears in the tree list.
- Step 6** Add two more call types (internal\_2501CT and internal\_2502CT).  
When complete, you have the following call types: internal\_2500CT, internal\_2501CT, and internal\_2502CT.
- Step 7** Save your work and close the Call Type List tool.
- 

## Link Configuration from Parent to Child

While some autoconfiguration occurs between the Parent and the Child systems, you must perform other setup tasks manually for call flow to work properly. Set up the components necessary to link the Parent and the Child systems.

These setup tasks include configuring:

- Trunk Group
- Network Trunk Group
- Routes
- Peripheral targets
- Labels
- Routing clients for the autoconfigured Services
- Route points
- Dialed numbers (with Permit Application Routing enabled)
- Autoconfigured Skill Groups as Service members
- Autoconfigured Services (from the Child call types)

Use the Script Editor to create and schedule routing scripts.

## Configure Other Elements on Parent

Use the appropriate tools to set up these additional elements.



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**Note** See the Configuration Manager online help and the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-and-configuration-guides-list.html> for additional information.

---

## Procedure

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- Step 1** Use the Network Trunk Group Explorer to configure a Network Trunk Group on the Enterprise Gateway PG.
- Step 2** Use the Network Trunk Group Explorer to set up a Trunk Group on the Enterprise Gateway PG.
- Step 3** Configure Routes, Peripheral Targets, and Labels for the Enterprise Gateway PG.
- Configure the routes with either the Route Bulk tool, Agent Explorer, Skill Group Explorer, Service Explorer, Service Array Explorer, or Translation Route Explorer.
  - Configure the peripheral targets with the appropriate explorer tool for the services, service arrays, skill groups, translation routes, agents, announcements, or network VRUs.
  - Configure the labels with either the Label Bulk tool or the Label List tool.
- Step 4** Configure the parent Unified IP IVR routing clients for the autoconfigured services (child call types). The routing client can be a public network interexchange carrier (IXC) or a A private network peripheral. Each routing client must be associated with an interface controller, such as a NIC or a PG.
- Step 5** In Unified Communications Manager, configure the corresponding route points that match the labels. Add the labels to the child as dialed numbers with **Permit Application Routing** enabled.
- Step 6** Add autoconfigured Skill Groups as Service Members.
- Note** If you do not add these Service Members, then you cannot use MED.
- Step 7** Create the translation routes, routes, peripheral targets, and labels for the Unified CCE Gateway PG and the parent routing clients.
- Note** To pass call context from the parent to the child, use translation routing for all calls.
- 

## Create and Schedule Routing Scripts on Parent

A routing script determines how a call is handled by establishing the routing rules. In this section, you create a routing script and schedule it. You can then log in agents and have them make and accept calls.

For more information about scripting, see *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-user-guide-list.html>.

For instructions on creating a Translation Route, see the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-and-configuration-guides-list.html>

## Procedure

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- Step 1** Start the Script Editor application on the Administration & Data Server.
- Step 2** Create the first routing script, named `internal_2500`.
- Set the **Skill Group** node to `ACMI_1.Cisco_Voice.SG01` and `ACMI_1.Cisco_Voice.SG02`.
  - Set the **Queue to Skill Group** node to `ACMI_1.Cisco_Voice.SG01` and `ACMI_1.Cisco_Voice.SG02`.
  - Set the **Wait** node to **10** seconds.

- Step 3** Save the script.
- Step 4** Choose **Script > Call Type Manager**.  
The **Call Type Manager** appears.
- Step 5** Select **Media Routing Domain** and **Dialed Number**.  
This setting associates the call type with the dialed number.
- Step 6** Click **Add**.  
The **Dialed Number Entry** dialog appears.
- Step 7** Associate the dialed number with the call type by selecting **internal\_2500CT** (the call type), then click **OK**.
- Step 8** To schedule the routing script, click the **Schedule** tab.
- Step 9** Click **Add**.  
The **Call Type Scheduling** dialog appears.
- Step 10** Accept all the default settings on each of the rest of the tabs, then click **OK**.  
You return to the **Call Type Manager**.
- Step 11** Click **OK**.  
You now have a system that allows you to log in agents and have them make and accept calls.
- 

## Start Unified ICM Service

Start the Unified ICM Service for the Enterprise Gateway PG.

### Procedure

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In the **Unified ICM Service Control** dialog, select the **Services name** for the Enterprise Gateway PG and click **Start**.  
After the child and the parent Unified ICM establish a connection, the child configuration propagates to the parent Unified ICM Configuration Manager. Agent configuration information on the child propagates to the parent. The agent information is grayed out on the parent because you cannot modify or delete that information at the parent level.

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### What to do next

For general information about Unified ICM Service Control, see the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-and-configuration-guides-list.html>.

## Enable Dropping Call Participants from a Conference Call

In a Parent/Child deployment, the function of dropping any call participant from a conference call is disabled by default.



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**Note** This function is available only if Cisco Unified CCE Release 12.0(1) or later release is deployed on both the parent and child PGs.

The parent PG deployed with a Cisco Unified CCE release earlier than Release 12.0(1) results in a mismatch in the Termination Call Detail (TCD) reporting.

---

Complete the following steps in the *child PGs* to enable the function to drop any call participant from a conference call:

### Procedure

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- Step 1** Set the *HandleCVPCConnectionUpdate* registry key to *2* in `HKLM\SOFTWARE\Cisco Systems, Inc.\ICM<Instance><Component>\PG\CurrentVersion\JGWS\Processes<process>\JGWData\Dynamic`
- Step 2** Set the *DropAnyPartyEnabled* registry key to *1* in `HKLM\SOFTWARE\Cisco Systems, Inc.\ICM<Instance><Component>\CG\CurrentVersion\CTIServer\Dynamic`
-