



Agent Request

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Agent Request Feature Description

The Agent Request feature allows a customer to initiate a request on the web that results in a call from an agent.

To use Agent Request, your solution requires the Cisco Customer Collaboration Platform optional component. Cisco Customer Collaboration Platform works in a Contact Center Enterprise (Unified CCE) solution to process the request from its inception through the delivery of the callback.



Important The Agent Request feature can be used only if the customer or a partner develops a custom application. There is sample code on DevNet (formerly Cisco Developer Network) that you can use to understand how to start building your custom application to submit callback requests to Customer Collaboration Platform.

Customer Collaboration Platform and Agent Request

Customer Collaboration Platform provides the Callback API used by a custom application to request a phone call from a contact center agent.

The API works in conjunction with Customer Collaboration Platform callback feeds, campaigns, and notifications to pass callback requests to the contact center for routing.

The Callback API:

- Allows custom applications to initiate a callback.
- Forwards the callback request and callback details to Unified CCE using a notification mechanism (the Connection to Unified CCE notification type) through a Media Routing (MR) connection.

- Allows custom applications to retrieve the state of the callback as well as the estimated wait time (EWT) until an agent becomes available.
- Allows custom applications to cancel a requested callback.

The Callback API supports the use of Call variables and ECC variables for callback requests. Call variables and ECC variables send customer-specific information with the request. When you create a callback contact, the social contact associated with the callback contact includes all of the specified variables as extension fields.

Unified CCE and Agent Request

When it receives an Agent Request, Unified CCE performs these tasks:

- Process the callback request.
- Route the callback request to an agent and place a call from the agent's phone to the customer.
- Notify Customer Collaboration Platform that the agent has been selected.

Agent Desktops and Agent Request

Cisco Finesse supports Agent Request.

Enterprise Chat and Email and Agent Request

To configure prefixes and filters for dialed numbers in Enterprise Chat and Email, you must use the Unified CCE Script Editor.

Unsupported Environments

Agent Request is not supported:

- In a Parent/Child deployment
- With Mobile Agents
- In a hybrid deployment

Agent Request Prerequisites

Install and configure Customer Collaboration Platform before implementing Agent Request. Customer Collaboration Platform must be geographically colocated with one side of the Media Routing Peripheral Gateway (MR PG).

The customer or partner must build a custom application for the Agent Request feature. See [Use the Sample Code to Create a Customer Callback Request, on page 10](#).

Customer Collaboration Platform is always deployed in a DMZ. Remember to open the port you have configured for the MR PG. See [Set up the Media Routing PG and PIM, on page 6](#).

Agent Request Call Flow

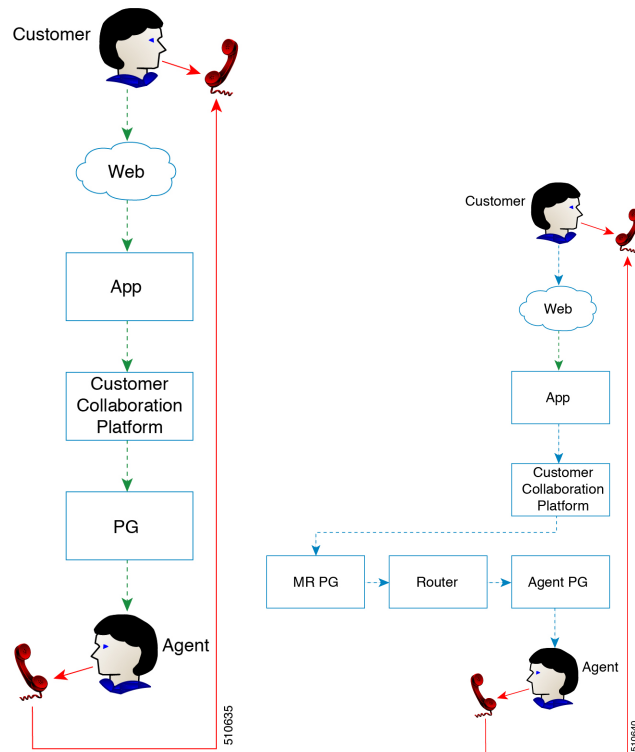
The flow proceeds as follows:

1. The customer application initiates an agent request by requesting a callback.
2. Customer Collaboration Platform sends the request to the Media Routing PG.
 - a. The Media Routing PG sends the request to the Router.
 - b. The Router sends the request to the Agent PG.
 - c. The Agent PG sends the request to the agent.
3. A call is initiated from the agent's phone, on behalf of the agent, dialing the customer's phone number.



Note The agent does not control when the call is placed.

Figure 1: Agent Request Call Flow



Agent Request Scenarios

1. From the web, the customer requests to speak to an agent.
2. The customer receives feedback that the request is accepted.
3. The customer receives feedback that the call is queued and the estimated wait time.
4. The customer receives feedback that a call is on its way.

5. The agent's phone places an outbound call.
6. The agent is presented with call context.

If	Then
The customer is available	The customer receives and answers the call, and speaks to the agent
The customer is busy when the callback occurs	The agent receives a busy tone
The customer does not answer when the callback occurs	The agent hears ringing
The customer cancels the callback before an agent is selected	There is no impact on the agent

Configure Unified CCE for Agent Request

The following information describes how to configure Agent Request for a Unified CCE deployment.



Important Configure Unified CCE before you configure Customer Collaboration Platform.

Configuration Manager

Use these Configuration Manager tools and procedures to configure Agent Request.

Configure Network VRU and Network VRU Script

Procedure

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- Step 1** In the Configuration Manager, use the Network VRU Explorer tool to configure and save a type 2 VRU. The Network VRU is used to queue voice callback tasks if an agent is not available to handle them.
 - Step 2** In the Configuration Manager, use the Network VRU Script List tool to add a Network VRU Script that references the Network VRU that you configured in Step 1. The Network VRU Script is used for Estimated Wait Time.
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Configure the Media Routing PG and PIM

Procedure

- Step 1** In Configuration Manager, open the PG Explorer tool to configure a media routing PG.
 - Step 2** Create a media routing PIM and routing client for Customer Collaboration Platform.
Write down the Logical Controller ID and the Peripheral ID. You will use them when you set up the PG.
 - Step 3** On the Peripheral tab in the PG Explorer tool, check the **Enable post routing** check box.
 - Step 4** On the Routing Client tab in the PG Explorer tool, select the **Multichannel** option from the **Routing Type** drop-down list box.
 - Step 5** On the Advanced tab in the PG Explorer tool, select the type 2 Network VRU that you created.
-

Configure Call Type

Procedure

Open the Call Type List tool, and create a call type to handle calls from an agent request voice callback.

Configure Dialed Number/Script Selector

Procedure

- Step 1** Open the Dialed Number/Script Selector List tool, and create a script selector on the routing client that you configured. Customer Collaboration Platform uses this script selector to request agents for voice callback. (The script selector configured here must be the same as the one entered in the Customer Collaboration Platform notification.)
 - Step 2** On the Attributes tab, select **Cisco_Voice** from the **Media routing domain** drop-down list box.
 - Step 3** On the **Dialed Number Mapping** tab, map the script selector to the call type you created.
-

Configure ECC Variables

Procedure

- Step 1** Open the **Expanded Call Variable List** tool.
- Step 2** Add one or more ECC Variables for the callback request.

Note Arrays are not supported with the Agent Request feature.

CCE solutions support the Latin 1 character set only for Expanded Call Context variables and Call variables when used with CVP, Finesse, and Customer Collaboration Platform. CCE also supports the use of multi-byte character sets in limited usage for ECC and call variables when setting them in Script Editor using double quotes.

Set up the Media Routing PG and PIM

Procedure

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- Step 1** Navigate to **Unified CCE Administration > Overview > Infrastructure Settings > Peripheral Gateways**. Determine the Peripheral ID for a Multichannel peripheral for the customer collaboration platform, as mentioned in the [Cisco Packaged Contact Center Enterprise Administration and Configuration guide](#).
- Step 2** From Cisco Unified CCE Tools, select **Peripheral Gateway Setup**.
- Step 3** On the Components Setup screen, in the Instance Components panel, select the PG Instance component. If the PG does not exist, click **Add**. If it exists, click **Edit**.
- Step 4** In the Peripheral Gateways Properties screen, click **Media Routing**. Click **Next**.
- Step 5** Click **Yes** at the prompt to stop the service.
- Step 6** From the Peripheral Gateway Component Properties screen, click **Add**, select the next PIM, and configure with the Client Type of Media Routing as follows.
- Check **Enabled**.
 - In the **Peripheral Name** field, enter **MR**.
 - For **Application Hostname (1)**, enter the hostname or IP address of Customer Collaboration Platform.

Note The system does not support IP address change. Use the hostname if you foresee a change in IP address. This is applicable for all the **Hostname/ IP Address** fields.
 - By default, Customer Collaboration Platform accepts the MR connection on **Application Connection Port** 38001. The Application Connection Port setting on Customer Collaboration Platform must match the setting on the MR PG; if you change the port on one side of the connection, you must change it on the other side.
 - Leave the **Application Hostname (2)**, field blank.
 - Keep all other values.
 - Click **OK**.
- Step 7** On the Peripheral Gateway Component Properties screen, enter the Logical Controller ID that you recorded when you configured the Media Routing PG and PIM.
- Step 8** Accept defaults and click **Next** until the Setup Complete screen opens.
- Step 9** At the Setup Complete screen, check **Yes** to start the service. Click **Finish**.
- Step 10** Click **Exit Setup**.
- Step 11** Repeat from Step 1 for Side B.
- Step 12** Navigate to **Unified CCE Administration > Infrastructure Settings > Inventory**.
- Step 13** Add Customer Collaboration Platform as an external machine.

- a) Click **Add**.
- b) Select Customer Collaboration Platform from the drop-down list.
- c) Enter the required information.
- d) Click **Save**.

The system automatically enables and completes the **CCE Configuration for Multichannel Routing** settings in Customer Collaboration Platform Administration, including the **Application Connection Port** you specified.

Configure Customer Collaboration Platform for a Voice Callback Agent Request

To support a callback request, Customer Collaboration Platform must be configured with:

- A callback feed
- A campaign
- A Connection to CCE notification configured for the campaign mentioned above that will be triggered by incoming callback requests with a matching tag.

Create Feed

Procedure

- Step 1** Sign in to Customer Collaboration Platform.
 - Step 2** Click **Configuration**.
 - Step 3** On the **Manage Feeds** panel, click **New**.
 - Step 4** For **Type**, select **Callback**.
 - Step 5** Name the feed.
 - Step 6** For **Reply Template**, retain the default, *No reply template*.
 - Step 7** Configure the feed to automatically tag all callback requests that come in on that feed. For example, autotag with 'sendtocontactcenter'.
Make a note of the tag. It is used to trigger the notification to CCE.
 - Step 8** Click **Save**.
-

Create Campaign

Procedure

- Step 1** Sign in to Customer Collaboration Platform.

- Step 2** Click **Configuration**.
 - Step 3** On the **Manage Campaigns** panel, click **New**.
 - Step 4** Name the campaign.
 - Step 5** Enter an optional description.
 - Step 6** Make no selection in the **Chat Invitation Feed** drop-down list.
 - Step 7** Locate the Callback feed in the **Available** panel and move it to **Selected**.
 - Step 8** Click **Save**.
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Create Notification

Procedure

- Step 1** Sign in to Customer Collaboration Platform.
 - Step 2** Click **Administration**.
 - Step 3** On the **Manage Notifications** panel, click **New**.
 - Step 4** For **Type**, select **Connection to CCE**.
 - Step 5** Name the notification.
 - Step 6** From the **Campaigns** drop-down list, select the campaign that you created for the callback.
 - Step 7** In the **Tags** field, enter the tag that is automatically applied to callback requests by the feed. In our example 'sendtocontactcenter'.
 - Step 8** For **Request Type**, select **Callback**.
 - Step 9** In the **Dialed Number/Script Selector** field, enter the dialed number string that you have configured.
See [Configure Dialed Number/Script Selector, on page 5](#).
 - Step 10** Click **Save**.
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Agent Request Script

The Agent Request Script is used to implement an optional dial-plan, queue a call to the skill group node, and calculate the estimated wait time for a voice callback to a customer.

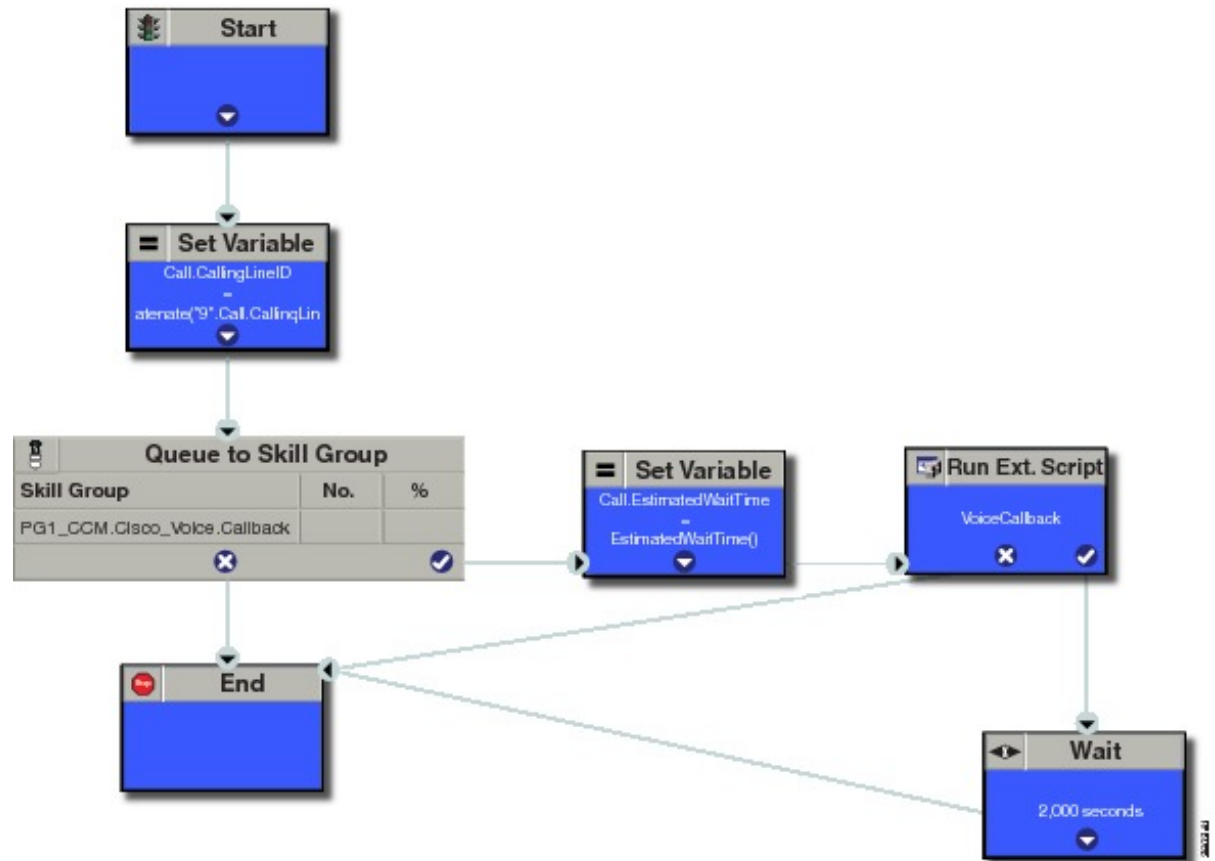
A customer who requests a voice callback might want to know approximately how long it will be before the call is returned. You can configure voice callback to provide an estimate of the wait time back to the customer. The estimated wait time is calculated once, when the call enters the queue. The time is not updated as the position in the queue changes.

The default estimated wait time algorithm is based on a running five minute window of the rate of calls leaving the queue. Any calls that are routed or abandoned during the first five minutes are taken into account as part of the rate leaving queue. For Precision Queues, the rate leaving queue represents the rate at which calls are delivered or abandoned from the entire Precision queue, not any individual Precision Queue steps. The algorithm computes the wait time for each of the queues against which the call is queued (Skill Groups or Precision Queues) and then returns the minimum estimated wait time. Queue to Agent is not supported.

While the queue builds, the small number of calls in the queue makes the estimated wait time less accurate and the value fluctuates rapidly. As the queue operates with more calls over time, the estimated wait time is more accurate and consistent.



Note The built-in function also applies to inbound calls that queue.



Create Agent Request Script

To create a Agent Request script:

Procedure

- Step 1** **Start node:** Create the **Start** node by selecting a new Routing Script from the Script Editor.
- Step 2** **Set Variable (Call.Calling Line ID) node:** (optional). If required, you can set the CallingLineID (CLID/ANI) variable to implement a "dial-plan," pre-pending a set of digits to the phone number provided by the customer so that it can be correctly routed. For example, it is often necessary to add 9 to the phone number to reach an outside line. In other cases, more pre-pended digits may be required to reach the end customer.

You can also set up Unified Communications Manager Route Patterns to respond to a certain set of digits by routing the call to an outside line with a specified area code. To implement a dial-plan, add a Set Variable node before the queue, as shown in this example. In this case, a 9 is pre-pended to the customer phone number using the built-in concatenate function.

- Step 3 Queue to Skill Group node:** The Agent Request call can be queued against one or more Skill Groups, Precision Queues, or a queue-to-agent node. In the example script, the call is queued against a single skill group.
- Step 4 Set Variable (Call.Estimated Wait Time) node:** Set the Call Wait time as follows:
- From the Set Variable node, select **Call** from the **Object type** drop-down menu.
 - From the **Variable** drop-down menu, choose **Estimated Wait Time()**. You can then work with the Formula Editor to use the default estimated wait value or create a formula and use your own value.
 - Click **Formula Editor**. You can either use the default estimated wait value, by clicking the **Built-In Functions** tab and choosing **EstimatedWaitTime()**. Or to create a formula and use your own estimated time value, click the **Variables** tab, and choose an entry in the **Object type** list and **Object** list. Then double-click a variable in the **Variable** list.
- Step 5 Run Ext Script node:** Apply the **Network VRU** script as follows:
- Click the **Queue** tab.
 - Click **Run External Script**.
 - Click inside the script. A Run External Script node appears.
 - Double-click the node and choose the Network VRU script from the list and then click **OK**. The call variable Estimated Wait Time now contains a value in the **EstimatedWaitTime** field and can be passed to peripherals.
- Note that a Run External Script node is required to send the EstimatedWaitTime to Customer Collaboration Platform.
- Step 6 Wait node:** The wait period for an agent becomes available.
- Step 7 End node:** The script ends if no agent becomes available.

Use the Sample Code to Create a Customer Callback Request

Cisco Systems has made sample callback application code available to use as a baseline in building your own application. This sample includes retrieving and displaying the estimated wait time, assuming it has been configured in Unified CCE. You can find the sample code on DevNet.



Note You cannot copy and paste this code to achieve a working application. It is only a guideline.

For more information about how to use the Callback API, see the [Cisco Customer Collaboration Platform Developer Guide](#).

Procedure

Step 1 Retrieve the feed id by entering this URL in a browser: **https://<Customer Collaboration Platform_Hostname_or_Ip>/ccp-webapp/ccp/feed**.

In the example output below, note that the value in the <name> field is "Callback." Look for the number of the feed id identified at the end of the refURL path (in this case, it is 100000) just before the </refURL> tag. Copy this number.

```
<feeds>
<Feed>
<changeStamp>0</changeStamp>
<name>Callback</name>
<pushFeedURL>https://128.107.81.27/ccp/callback/feed/100000</pushFeedURL>
<refURL>https://128.107.81.27/ccp-webapp/ccp/feed/100000</refURL>
<status>1</status>
<tags>
<tag>trial</tag>
</tags>
<type>10</type>
</Feed>
</feeds>
```

Step 2 Access the sample application from DevNet: <https://developer.cisco.com>.

Step 3 Enter values in the fields:

- Title: A title or subject for the callback request.
- Author: The name of the person submitting the callback request.
- Phone: The phone number to call back.
- Feed Id: The value from the refURL above.

Step 4 Click **Call me back**.

Agent Request Reporting

Cisco Unified Intelligence Center CCE reports include data for Agent Requests



Note Agent requests that fail before being routed to CCE will not be included in the CCE solution-level reports. The Customer Collaboration Platform search function can be used to identify these requests.

Call Type and Call Type Skill Group Metrics

- **Calls Offered** — Incremented when Call Type is entered (through Script Selector or Call Type node).
- **Calls Abandoned in Queue** — Incremented when a Queued Callback request is canceled by the customer prior to when an Agent is selected to handle the Voice Callback call.

- **Calls Answered** — Incremented if the call is placed from the agent and represents work accepted by the agent.
- **Calls Handled** — Incremented if the customer answers the call. Calls Answered minus Calls Handled indicates how many calls failed to reach the intended customer.
- **Service Level Offered** — Incremented for all routed calls, including voice callback calls initiated through the agent request API.
- **ServiceLevelCalls** — Incremented if the call is presented to the agent within a service level.
- **Answer Intervals (1 - 10)** — The appropriate bucket is incremented based on how long the call was in the queue.

Skill Group Metrics

Call Type Skill Group and Skill Group metrics are not counted in the same way. The skill group metric treats each call as agent-initiated; therefore, Calls Answered and Calls Handled are not incremented. AgentOutCallsTime, AgentOutCalls, AgentOutCallsTalkTime, AgentOutCallsOnHold, and AgentOutCallsOnHoldTime are incremented.

Agent Real Time

The direction in the Agent Real Time table is listed as Outbound.

Termination Call Detail

For custom reporting, the Termination Call Detail records contain a PeripheralCallType of 41 -Voice Callback. Calls which do not successfully connect to a customer have a call disposition of **10 - Disconnect/Drop no answer**. This includes agent request calls to busy numbers.