



Example Scripts

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Example Collaboration Scripts

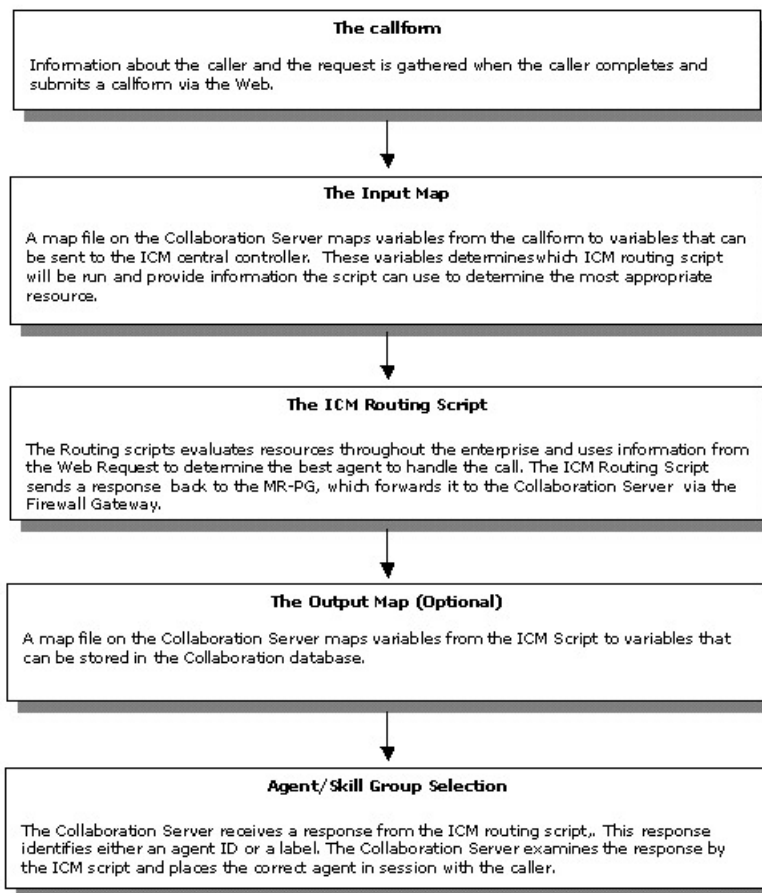
You can configure the Unified ICM and Enterprise Chat and Email so that the Unified ICM routes Web Collaboration requests that are processed by Enterprise Chat and Email.

Overview of ECE Web Request Routing Through Unified ICM

With the ECE integrated with the Unified ICM, the Unified ICM can route chat requests.

The process for routing Web requests through the Unified ICM can be divided into 5 parts, as shown in the following image:

Figure 1: Web Request Routing Process



Web Requests and Media Routing Domains

Enterprise Chat and Email can take advantage of the following types of Media Routing Domains (MRDs):

- Non-voice MRDs
- Voice MRD

For more information about MRDs, see the *Administration Guide for Cisco Unified Contact Center Enterprise*.

Non-Voice MRDs

The Enterprise Chat and Email uses Non-voice MRDs for chat requests.

The Voice MRD

The Voice MRD handles these types of requests:

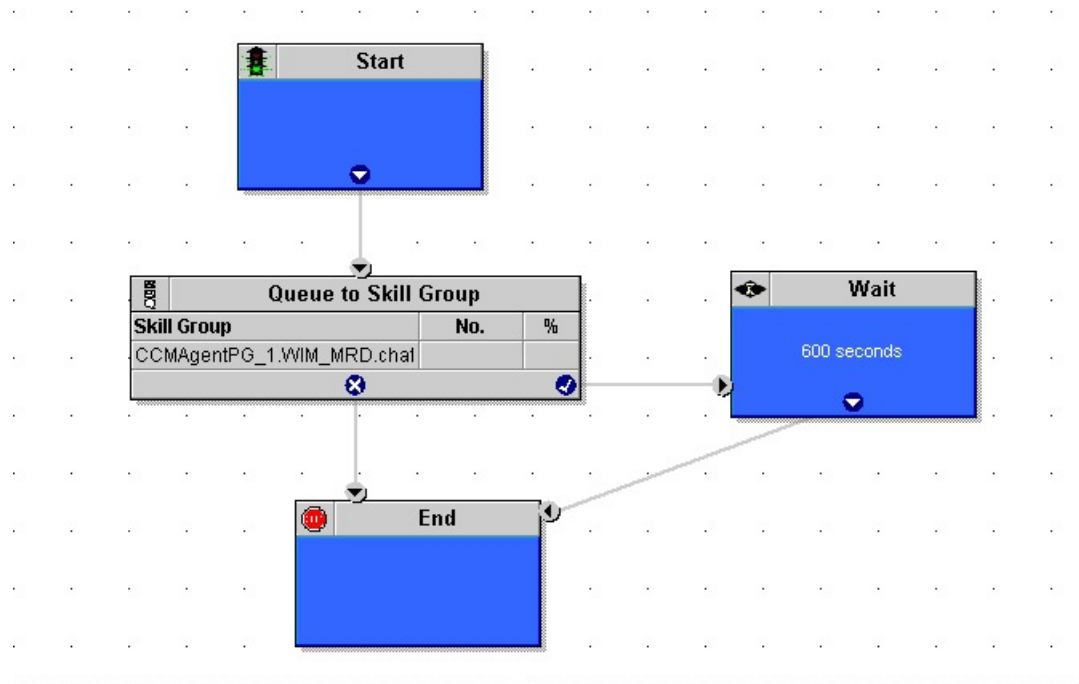
- Blended chat with legacy ACDs (these are requests for chat, but with agent reservation on the ACD)

- Web callback and delayed callback with both ACDs and Unified CCE

Script That Queues a Web Request to a Skill Group

The following script example shows how a Web request can be queued to a skill group:

Figure 2: Example - Queuing a Web Request to a Skill Group



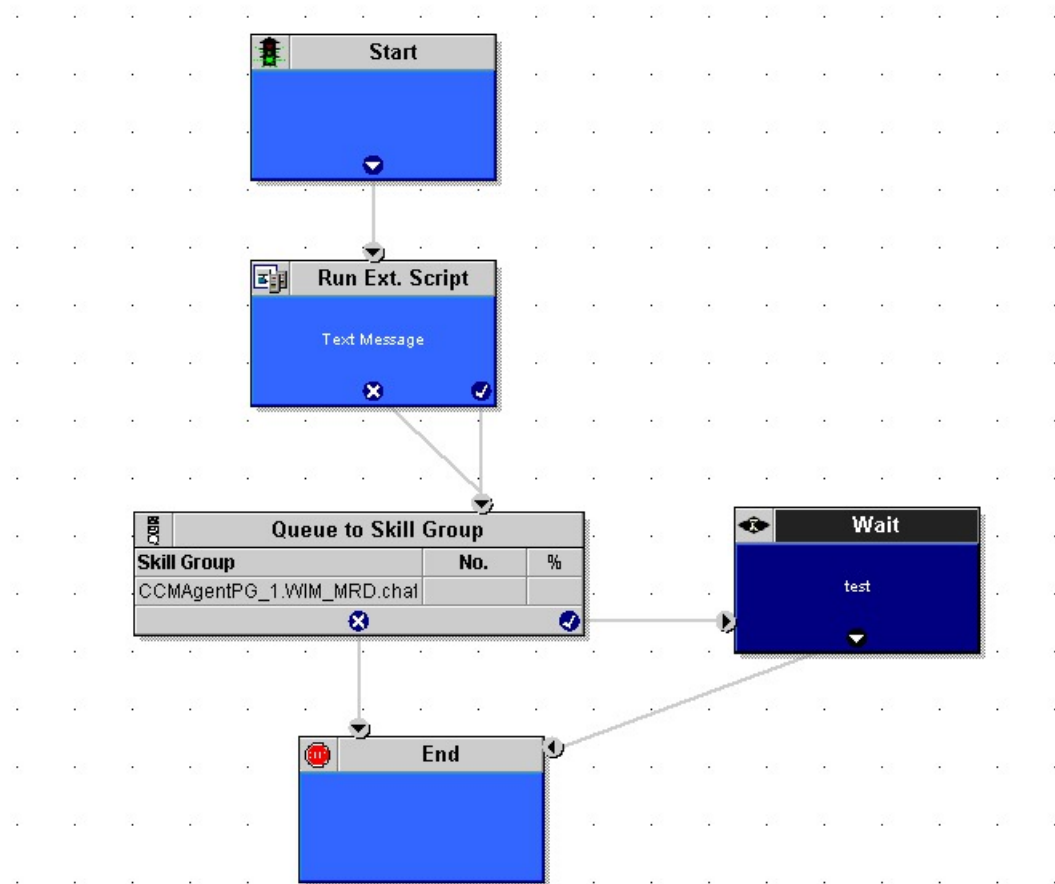
In this example:

1. This script is scheduled to run for web chat requests. For more information about call types and scheduling Web requests routing scripts, see [Example - How Unified ICM Determines the Call Type for Web Request](#).
2. The script queues the request to a chat skill group. At this time, Unified ICM attempts to find an available agent who is a member of that skill group. When the agent is found, the system software returns the agent ID to the Cisco Interaction Manager.
3. The script is run and the Enterprise Chat and Email processes a new chat request. This script is scheduled to run for chat requests.
4. The script queues the request to a chat skill group. At this time, the Unified ICM attempts to find an available agent who is a member of that skill group. When the agent is found, the Unified ICM returns the agent ID to the Enterprise Chat and Email.

Script That Pushes a URL to a Waiting Caller

The following script example shows how a script can push a URL to a waiting caller before the Web request is queued to a skill group:

Figure 3: Pushing URL to Waiting Caller



In this example, the Run External Script node pushes the selected URL to the caller's browser.

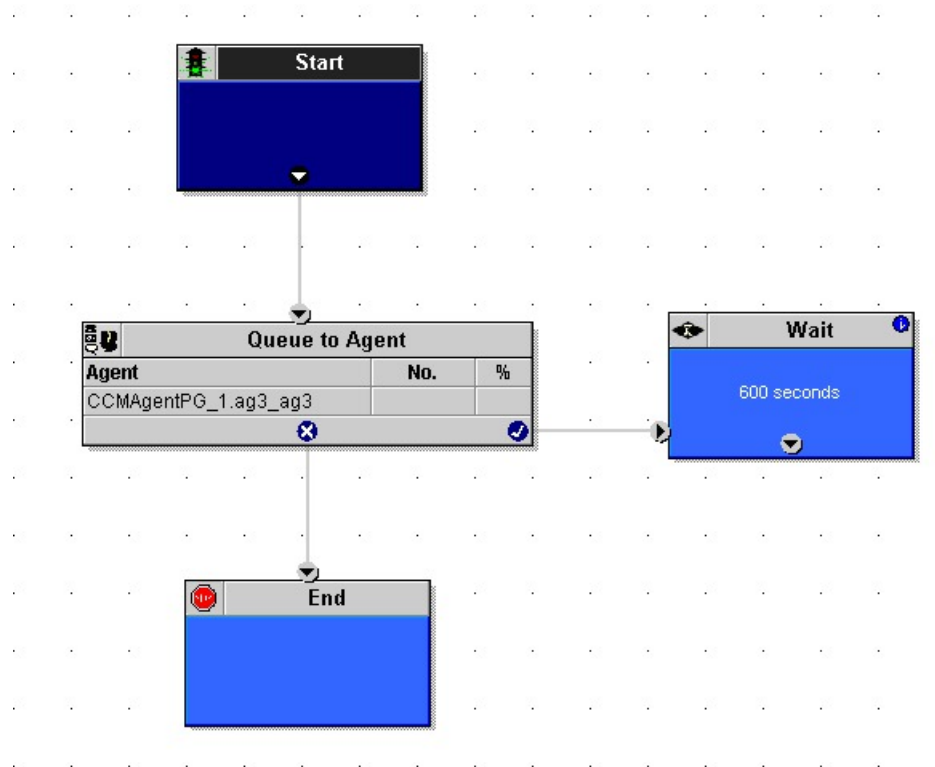


Note For the Run External Script node to work, there must be an entry in the Network VRU list pointing to the URL map file. After the Run External Script node, the script functions just as the preceding example.

Script That Queues Directly to an Agent

The following script example shows how you can queue a Web request directly to an agent:

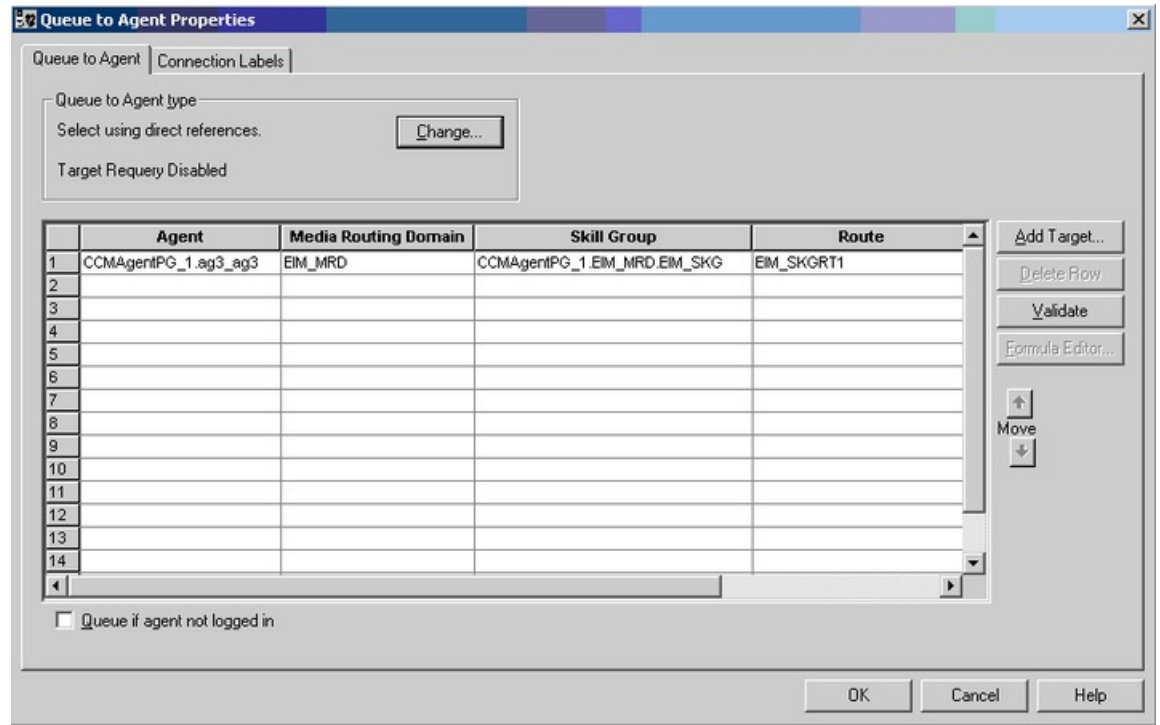
Figure 4: Queuing Directly to an Agent



In this example:

1. You can schedule this script to run for a particular type of request.
2. The script attempts to queue the request directly to an agent using the Queue to Agent node. The Queue to Agent node uses a direct reference to the agent, as shown in its Properties dialog box:

Figure 5: Direct Reference to Agent

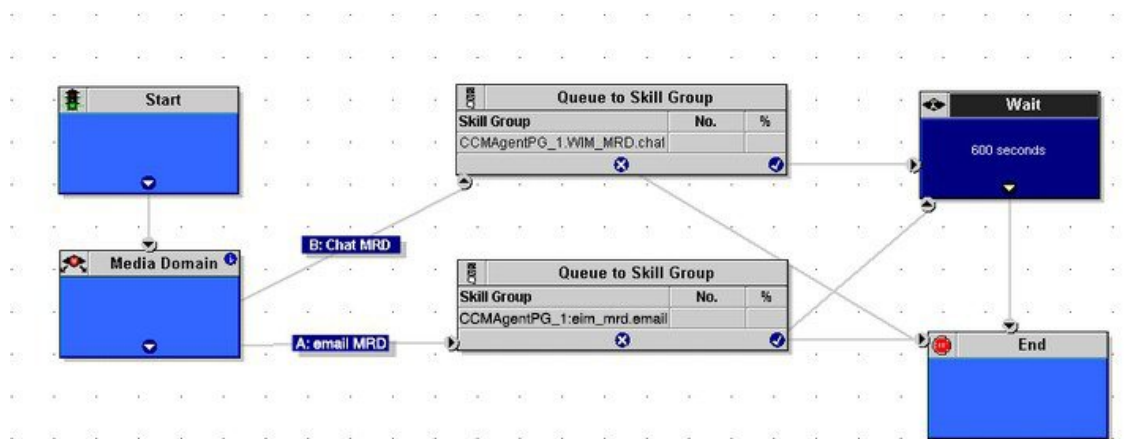


- The script tries to do this for 600 seconds before ending, as defined in the Wait node.

Script That Routes Based on the Media Routing Domain

The following script example shows how you can queue Web requests from different MRDs to different skill groups:

Figure 6: Routing Based on MRD



In this example:

1. The script is run to process a chat request. This script is scheduled to run for all these types of requests.
2. The script first detects the MRD of the request using the Media Routing Domain node. This node has two branches for the MRDs of the request: the email MRD (branch A) or chat MRD (branch B).
3. The script queues the request to the appropriate skill group for that type of request. At this time, the Unified ICM attempts to find an available agent who is a member of that skill group. When the agent is found, the system software returns the agent ID to the Cisco Interaction Manager.

Modify CCE Scripts for Experience Management Voice, SMS, and Email Surveys

In Script Editor, modify your CCE call routing scripts for incoming calls as follows:

Add nodes to invoke the call studio survey script, if needed. The following example explains when you might need to explicitly add nodes to call the survey script.

A script is called that asks callers if they want to participate in a survey. The script then sets the `user.microapp.isPostCallSurvey` variable according to the caller's response.

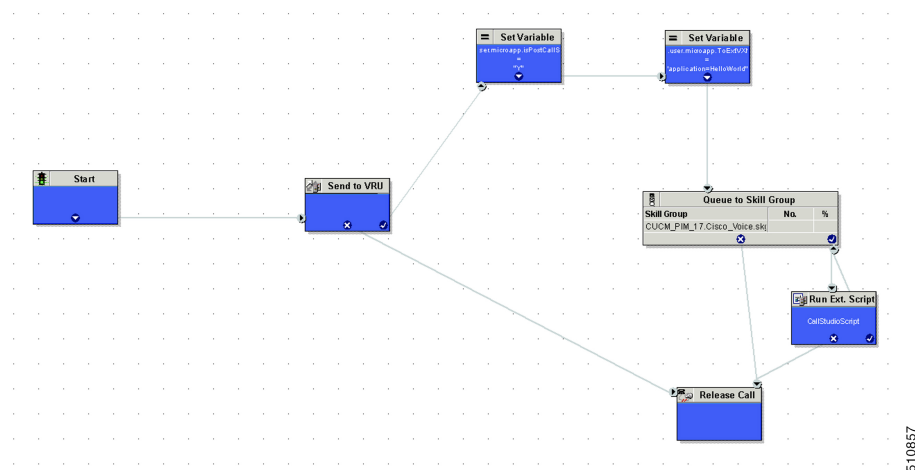


Note You can use `POD.ID` to send `cc_CustomerID`, and this `cc_CustomerID` can be used to filter the data in finesse gadget.

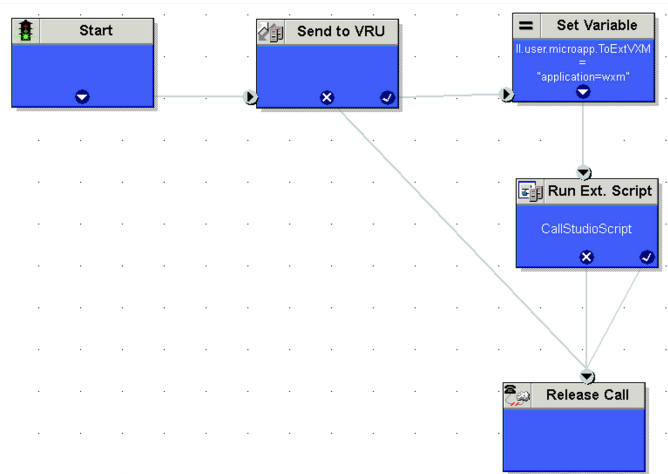
`POD.ID` is an optional field in Experience Management voice survey and the supported `POD.ID` format will be `xxx`, where `xxx` is the `Customer_id`.

Create Experience Management Routing Script for Voice

Create the following CCE call routing scripts for incoming calls.



Create the following routing script for the **Experience Management** Call Type to play your survey script or application to the caller.



Procedure

Step 1 In Script Editor, create the routing script as shown in the example.

Step 2 Do the following to ensure the routing script is mapped to the call type you created for Experience Management.

- a) Navigate to **Script > Call Type Manager**.
- b) On the **Schedules** tab, from the **Call Type** drop-down list, select the call type that you created for Experience Management.

For more information refer to the topic *Call Type and Survey Association in Unified CCE Admin* in *Cisco Unified Contact Center Enterprise Features Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-feature-guides-list.html>

- a) Click **Add**.
- b) Click **OK**.

For more information on optimizing the threshold values for SMS and Email batch processing, refer to the topic *Configure SMS/Email Thresholds* in *Configuration Guide for Cisco Unified Customer Voice Portal* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-installation-and-configuration-guides-list.html>

Create Experience Management Routing Script for SMS and Email

Experience Management Deferred (SMS/Email) survey is used for getting feedback on the overall customer journey experience. For invoking this survey, the caller's mobile number, email address, and other details have to be collected from Call Studio and passed to ICM. To configure this, refer to the following sections:

Configure Call Studio App Data Format

Procedure

Create Call Studio application with the use of CVP `SubDialogReurn` element and fill the customer data as external VXML variables.

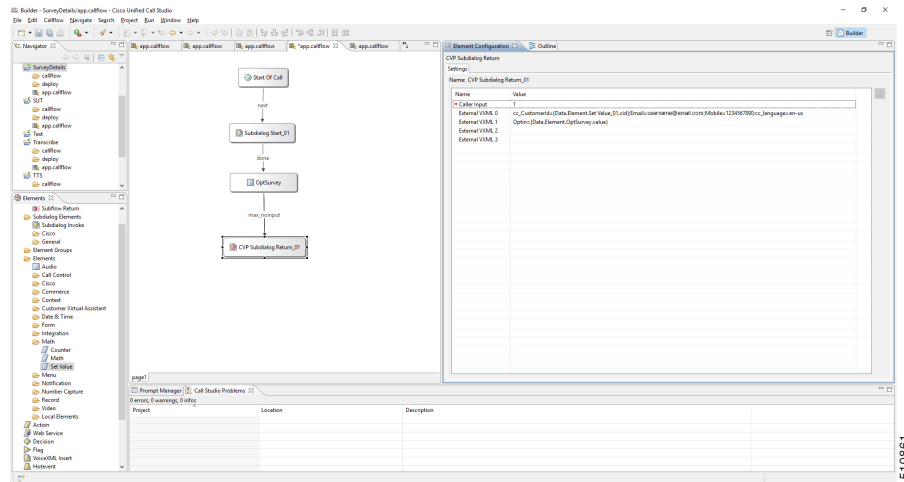
Example: External VXML 0 =

Email=abcd@cisco.com;cc_CustomerId=xyz;cc_language=en-US;Optin=yes;Mobile=911234567890;

Note Each key-value pair is separated by a semi colon.

Note The variable names are case sensitive.

Figure 7: Example



Refer to the following table for the variables and their descriptions.

Table 1: Variables and their descriptions

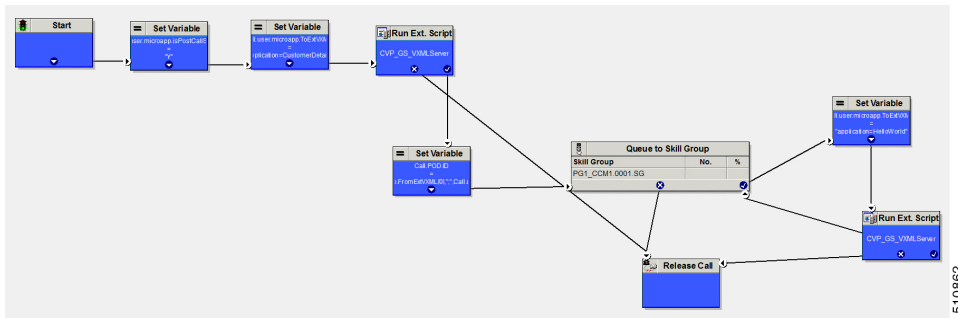
Variable Name	Description	Required/Optional
cc_CustomerId	Unique ID for a customer across multiple channels.	Required
Email	Customer email ID	Either email or phone number is required
Mobile	Customer mobile number with country code. Example: 919911223344	Either email or phone number is required
cc_language	Survey language Example: en-US	Optional

Variable Name	Description	Required/Optional
Optin	Option to check if customer wants to opt for the survey: Values: <i>yes/no</i> Default value is <i>yes</i> when the value is not captured from Call Studio.	Optional

Configure ICM Script

Procedure

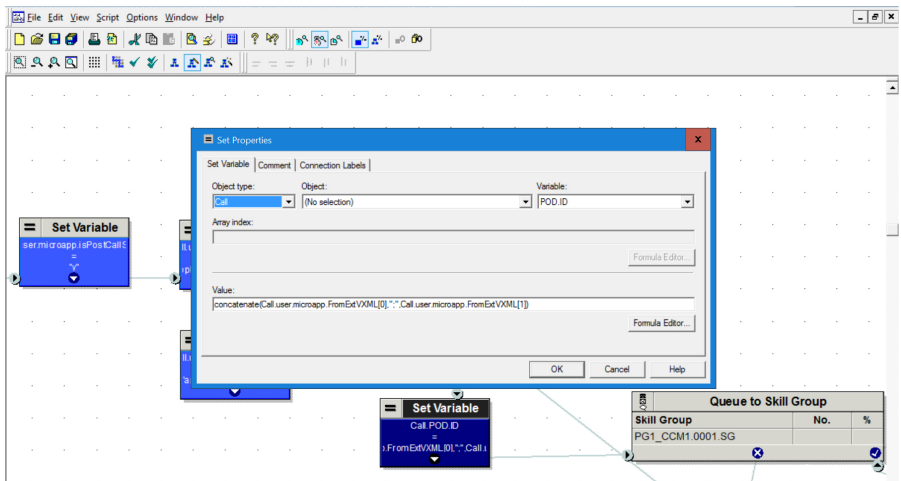
Step 1 Create the ICM script as shown in the following screen shot:



Step 2 Fill the ECC variable **POD.ID** values from `user.microapp.FromExtVXML` array and pass it to ICM.

Example:

`POD.ID=cc_CustomerId=xyz;Email=abcd@cisco.com;cc_language=en-US;Optin=yes;Mobile=911234567890;`



Step 3 Save the script.

Example Enterprise Chat and Email - Email Scripts

You can configure the Unified ICM and the Enterprise Chat and Email so that the system software routes email messages that are processed by Enterprise Chat and Email.

For more information about configuring Unified ICM and Enterprise Chat and Email in an integrated environment, see the following documents:

- *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise*
- *Cisco Unified Web and E-Mail Interaction Manager Installation Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-email-interaction-manager/products-installation-guides-list.html>
- *Cisco ICM Multichannel Software Implementation Map*
- *Cisco ICM Multichannel Software Overview*

Overview of ECE E-mail Routing Through Unified ICM

When the ECE is in an integrated environment, the administrator can choose to defer message assignment to Unified ICM. The administrator determines if skill groups can initiate message routing through the system software when the skill groups are created. The administrator then defines rules to assign messages to those Unified ICM Routing skill groups.

In this situation:

1. A message enters the ECE.
2. A rule assigns the message to a Unified ICM Routing skill group.
3. ECE sends a request for assignment to Unified ICM.



Note In a Unified ICM integrated with the ECE, the allowed responses for an invoked route request are: Return an Agent, Return a Label, or Failure (the script could not be found or something is wrong). The ECE deals with this by placing the e-mail message into the externalRoutingError system queue.

4. The Router runs a routing script to determine which ECE agent to assign the message to. The routing script can also determine that the message should be assigned to a local ECE routing skill group.



Note To assign a message directly to an agent, the Unified ICM script must use the Queue to Agent node to route e-mail messages, not the Agent node.



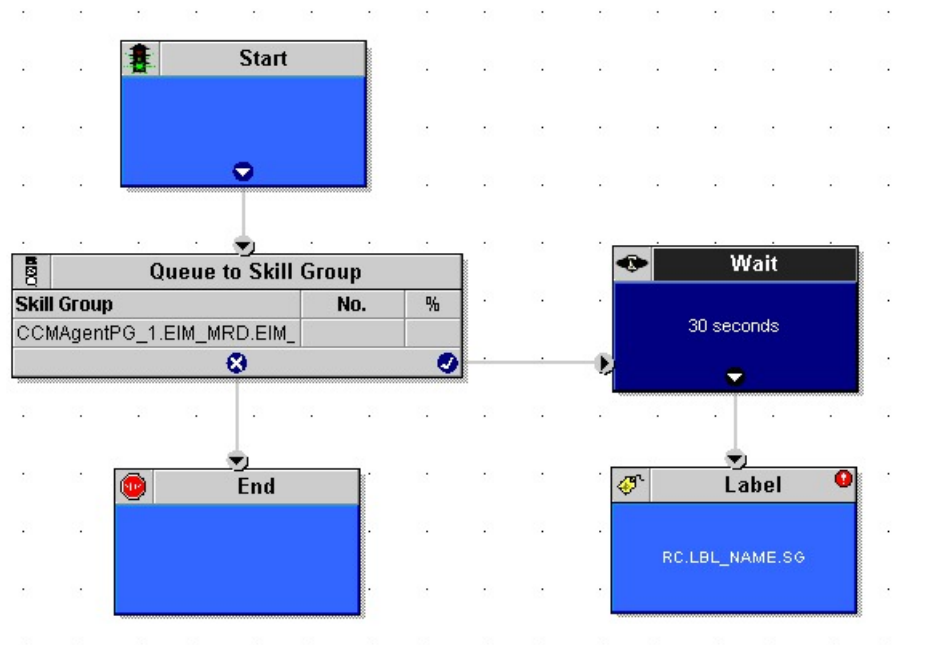
Note While the system software can assign a message directly to a local ECE routing skill group, you would not typically design a script to do this without first trying to queue the message to a skill group or directly to an agent. If the message, based on its content, is meant to be assigned to a local ECE routing skill group, you could make that assignment directly through ECE rules, and not use the software.

5. Based on the routing script's determination, the Unified ICM instructs the ECE to assign the message to a particular agent or ECE routing skill group.
6. The message is placed in the agent's or skill group's queue.
7. If the message is assigned to an agent by the Unified ICM, it is presented to the agent in push mode; if the message is assigned to an ECE routing skill group, it is placed in that skill group's queue.

Script That Queues E-mail to a Skill Group

The following script example shows how an e-mail message can be queued to a skill group:

Figure 8: Queuing E-mail to Skill Group



In this example:

1. The script is run when a e-mail message is assigned to a Unified ICM Routing skill group. This script is scheduled to run for messages assigned to that skill group. For more information about call types and scheduling e-mail routing scripts, see [Example - How Unified ICM Determines the Call Type for an E-Mail contact](#).
2. The script queues the request to the skill group. At this time, the Unified ICM attempts to find an available agent who is a member of that skill group. When the agent is found, the system software instructs the Enterprise Chat and Email to push the e-mail message to that agent, so the agent can respond to the customer.
3. If no agent is found within 30 seconds, as defined in the Wait node, the script uses the Label node to return a label associated with the Enterprise Chat and Email local skill group. The Enterprise Chat and Email then places the message in that local skill group. Enterprise Chat and Email load balances the e-mail assignments to the available agent, based on load balancing.

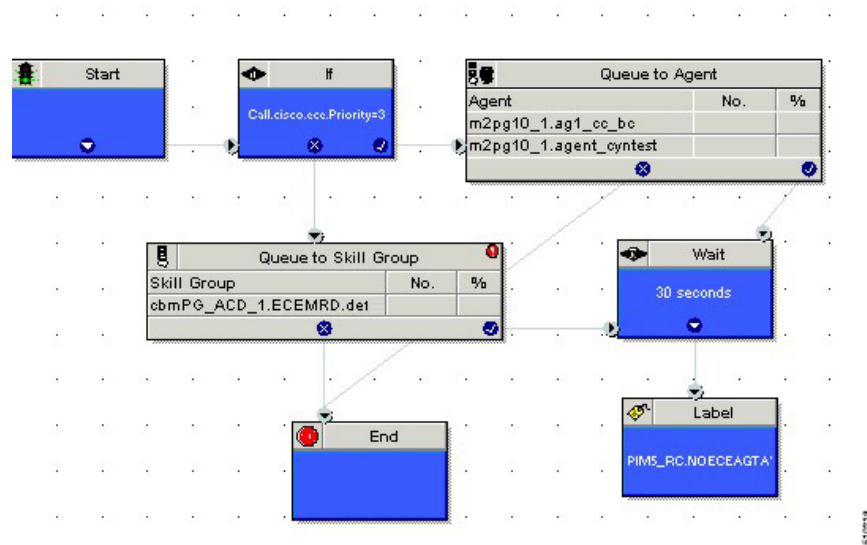


Note The ICM wait node can be used to keep the email in the queue when the agent is not available (for example, during a weekend) by setting the wait node to a high value such as 172800 seconds (48 hours). The maximum time that an activity can remain in the ICM queue is determined by the MRD setting "Max time in queue". By default, this setting is blank for all MRDs and the setting defined in the router registry is used.

Script That Routes a Message Based on the Priority

The following script example shows how you can queue an e-mail message directly to an agent or to a skill group, depending on the message's priority:

Figure 9: Routing Based on Priority



In this example:

1. The script is run when a e-mail message is assigned by the Enterprise Chat and Email to a Unified ICM Routing skill group. This script is scheduled to run for messages in that skill group. For more information on call types and scheduling e-mail routing scripts, see [Example - How Unified ICM Determines the Call Type for an E-Mail Contact](#).
2. The script tests the message's priority, the value of the `cisco.ecc.Priority` variable. For more information, see [Data for E-Mail Requests](#).
3. If the message is marked "Urgent" (`cisco.ecc.Priority` value of 3), control passes to the Queue to Agent node. That node lists two agents who are e-mail supervisors and who handle urgent messages. The Enterprise Chat and Email then pushes the message to the first of these agents who is logged in.
4. If the message is not urgent, control passes to the Queue to Skill Group node. The Unified ICM attempts to find an available agent who is a member of that skill group. When the agent is found, the Unified ICM instructs the Enterprise Chat and Email to push the e-mail message to that agent.
5. If no agent is found within 30 seconds, in either the Queue to Agent node or Queue to Skill Group node, as defined in the Wait node, the script uses the Label node to return a label associated with a Enterprise Chat and Email local skill group. The Enterprise Chat and Email then places the message in that local

skill group. The message is not pushed to an agent; rather, it waits in the local skill group queue for an agent to pick it.



Note These Expanded Call Context (ECC) variables are optional. Before you use these ECC variables, configure them in Unified CCE and ECE.

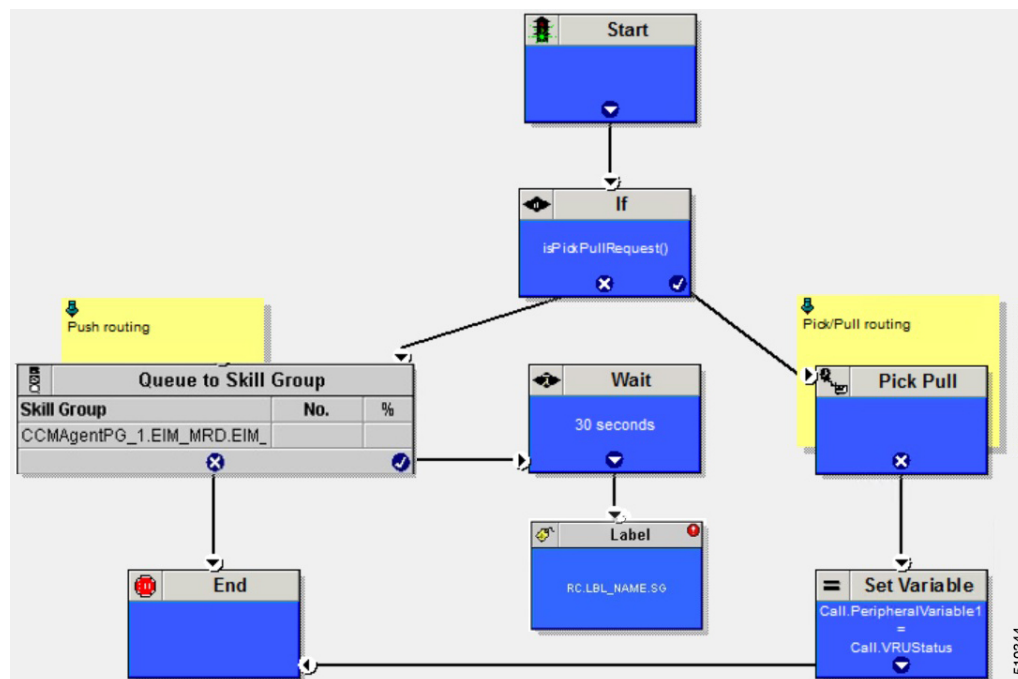
To configure these ECC variables in Configuration Manager's Expanded Call Variable List Tool, see the *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-and-configuration-guides-list.html>.

To configure these ECC variables in ECE, see at <https://www.cisco.com/c/en/us/support/customer-collaboration/cisco-enterprise-chat-email/products-maintenance-guides-list.html>.

Script That Routes Requests Based on Pick/Pull/Push

The following script example shows how you can use a single script to route a push request or a pick or pull request using an IF node:

Figure 10: Routing Based on Push/Pull/Pick



In this example:

1. The script is run when the Enterprise Chat and Email assigns an email message to a Unified ICM Routing Skill Group.
2. The script checks whether the service requested is one of the Pick or Pull service type using the builtin function – `isPickPullRequest()`. The success branch of **IF** node connects to Pick/Pull node and the failure

branch connects to a queue node, which can be either a Queue to Skill Group node or Precision Queue node.

3. If the **IF** node evaluates to False, control passes to path of Push routing. The script queues the request to the skill group. At this time, the Unified ICM attempts to find an available agent who is a member of that skill group. When an agent is found, the system software instructs the Enterprise Chat and Email to push the e-mail message to that agent, so the agent can respond to the customer.
4. If no agent found within 30 seconds, as defined in the **Wait** node, the script uses the Label node to return a label associated with the Enterprise Chat and Email local skill group. The Enterprise Chat and Email then places the message in that local skill group. Enterprise Chat and Email load balances the e-mail assignments to the available agent, based on load balancing.
5. If the **IF** node evaluates to True, control passes to Pick / Pull routing. Based on the pick or pull service requested, the request will be handled in the Pick/Pull node.
6. Pick / Pull node can be used directly without an **IF** node which is shown in the example. In such case, the failure path can be used for Push routing. In addition, the reason for the failure through the Pick / Pull node is captured in the VRUStatus variable which can be set in one of the peripheral variables to be captured in the Route Call Detail record.

Example Digital Channel Interactions Using Webex Connect

You can configure Contact Center Enterprise (CCE) and Webex Connect so that the system software routes the digital channel tasks that are processed by Webex Connect.

For more information about configuring CCE and Webex Connect in an integrated environment, see the *Digital Channels Integration Using Webex Connect* chapter in the following documents:

- *Cisco Unified Contact Center Enterprise Features Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-feature-guides-list.html>
- *Cisco Packaged Contact Center Enterprise Features Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/series.html#%7Etab-documents>

Overview of Digital Channel Routing using Webex Connect

In an integrated environment where Webex Connect is used to route digital channel contacts through the Digital Routing service, an administrator can set up a routing script that can either assign tasks directly to specific agent or to Skill Groups / Precision Queues across different media channels or media routing domains.

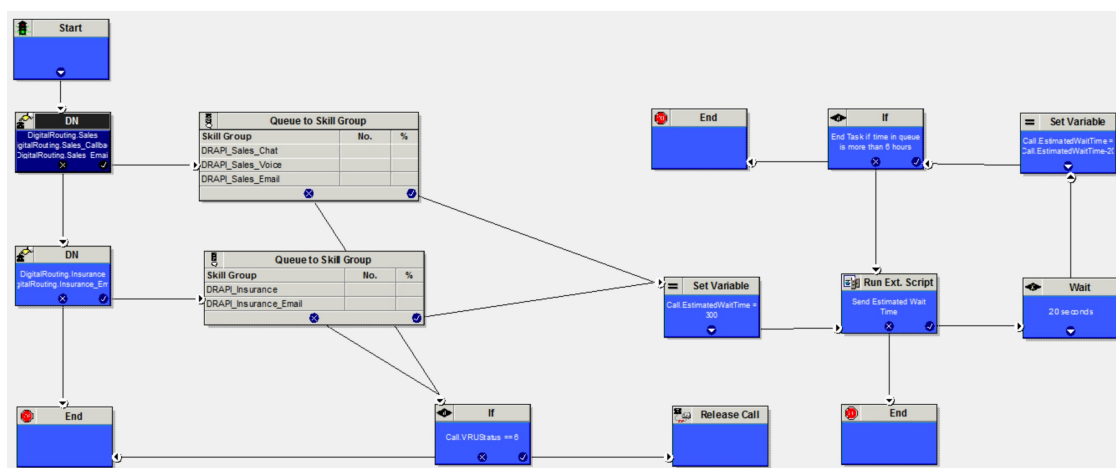
In this scenario:

1. A digital channel task enters Webex Connect and is routed to Unified CCE through Digital Routing service.
2. The Webex Connect platform uses channel-specific flows to pass task context to the Digital Routing service through call variables and ECC variables. Optionally, a Flow designer can set the **Preferred Owner** field in the **CCE Create Task** node in Webex Connect with the Agent Skill Target ID or Peripheral Number of an agent, who should be queued or routed to, if available. The value passed in the flow is populated as the call variable, Call.PreferredAgentID, which can then be used to queue the task using a QueueToAgent node in the routing script.

3. The Digital Routing service sends a request for assignment to Unified CCE.
4. The Router runs a routing script to determine which non-voice or digital channel agent to assign the task to. The routing script can also determine that the task should be assigned to a Digital Routing skill group or precision queue.
5. Based on the routing script's determination, the Unified CCE instructs the Digital Routing service to assign the task to a particular agent.
6. If the desired agent is not available, or all agents are busy in the Skill Group or Precision Queue, the task gets queued in the CCE Router. An administrator can choose to send an estimated wait time and additional task context that are carried by ECC variables through "Run External Script" node. The Digital Routing service sends the "QUEUED" webhook notification event, which invokes a "QUEUED" flow in Webex Connect to relay the estimated wait time and additional context to the customer who is active on a live chat session or on asynchronous social channels such as SMS.

Script that Queues a Digital Channel Task to a Skill Group

The following script example shows how a digital channel task can be queued to a skill group. In this example there are two scenarios:



Scenario 1

The task is queued and routed to an agent based on the wait time defined.

1. The routing script decides the skill group from where an agent must be picked. The same script can be used to route tasks belonging to different media channels such as Email, Chat, SMS or Web Callback (which maps to Cisco_Voice MRD) and unique Script Selectors / Dialed Numbers. In this example, the script queues the task to "Sales" or "Insurance" skill groups corresponding to Chat and Email MRDs based on the Script Selectors / Dialed Numbers received in the route request from Webex Connect. For more information about how Unified CCE determines the Call Type for a task routed through digital channels, see [Determination of call type for a Digital Routing task](#).
2. The script queues the task request to the skill group. At this time, the Unified ICM attempts to find an available agent who is a member of that skill group. The Unified ICM runs an external script to notify the customer an estimated wait time. When the agent is found, the system software instructs the Digital Routing API service to push the task to that agent, so the agent can respond to the customer.

3. In the example script, a loop is run to send periodic updates to the Digital Routing service about the Estimated Wait Time (EWT). An EWT is simulated by assigning it a 5 minutes (300 seconds) static value and decrementing the count in a loop, however, a custom formula can be used to relay the same based on your requirements. If the task is queued for more than 6 hours, the script bails out and ends the queuing.

The CCE wait node can be used to keep the task in the queue when the agent is not available (for example, during a weekend) by setting the wait node to a high value such as 172800 seconds (48 hours). The maximum time that an activity can remain in the ICM queue is determined by the MRD setting "Max time in queue". By default, this setting is blank for all MRDs and the setting defined in the router registry is used. The default value in the router registry is 3600 seconds.

Scenario 2

The router rejects the queuing request as there are no queue slots available.

1. When queuing the task to the skill group, the router checks the following:
 - The global limit of maximum queued calls and maximum queued calls per call type as defined in the router registry under the following registry hive: `HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\InstanceName\RouterA\Router\CurrentVersion\Configuration\Queuing`
 - The "MaxCalls" denotes the maximum queued calls, which is set as 15,000 calls or tasks and the "MaxCallsPerCallType" denotes the maximum queued calls per call type, which is set as 10,000.
 - Whether the number of tasks queued in the skill group has exceeded the maximum number of tasks defined in the MRD for the skill group.
2. If it has exceeded the maximum number of tasks defined, then the script checks the VRUStatus call variable in the failure path of the Queue node.
3. If the value of the VRUStatus call variable is 6, that is STATUS_MAX_QUEUE_LIMIT_EXCEEDED, the script sends the call to the release node.
4. The router populates a special CauseCode as part of the Release node processing that instructs the Digital Routing service to queue the task at the head of the queue, such that the task routing does not fail. The Digital Routing service tries to queue the task again in a periodic manner, as queue slots become available.

Example Universal Queue Scripts

You can design scripts to route contacts from different media in a Universal Queue environment.

These scripts are only examples; your company's needs may differ.

For more information about configuring Task Routing with third-party multichannel applications see the *Cisco Unified Contact Center Enterprise Features Guide* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-feature-guides-list.html>.

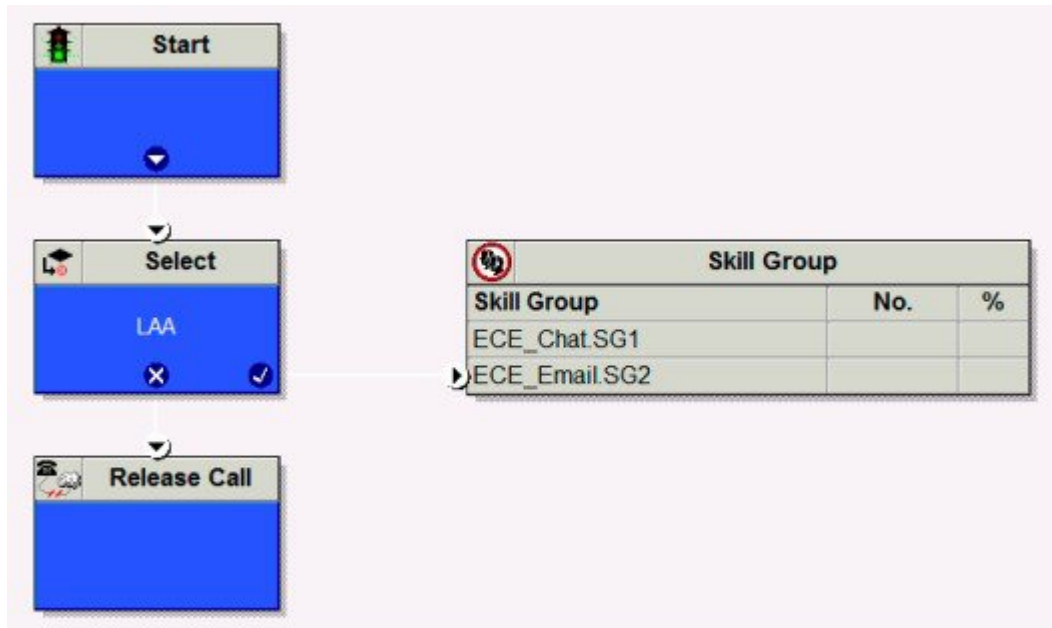
For more information about configuring Enterprise Chat and Email, see the following documents, at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/tsd-products-support-series-home.html>:

- *Configuration Guide for Cisco Unified ICM/Contact Center Enterprise*
- *Cisco Unified Contact Center Enterprise Installation and Upgrade Guide*
- *Administration Guide for Cisco Unified Contact Center Enterprise*

Selection of Agents from Skill Groups

The following script example shows how contacts from different channels can be routed to the Longest Available Agents in skill groups that are specific to the different channels:

Figure 11: Selecting Agents from Skill Groups

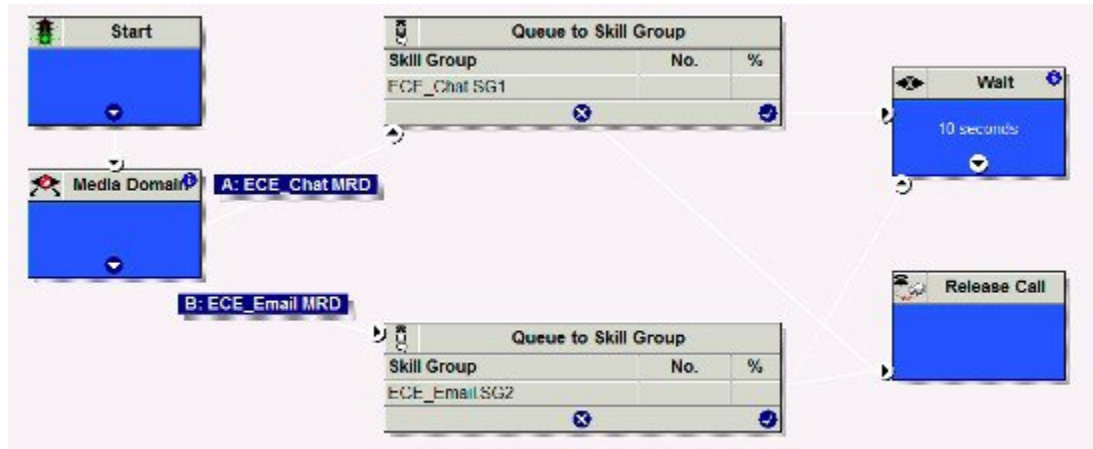


You schedule this script to run for Call Types associated with contacts from the different channels. The script then selects the Longest Available Agent from the skill group in the Media Routing Domain for that channel. The agents may be logged in to different Media Routing Domains and working with contacts from different channels; the Router determines an agent's availability across channels.

Categorization by Media Routing Domain with Skill Groups

The following script example shows how contacts can be categorized by Media Routing Domain, then queued to skill groups specific to that Media Routing Domain:

Figure 12: Categorizing by MRD with Skill Groups

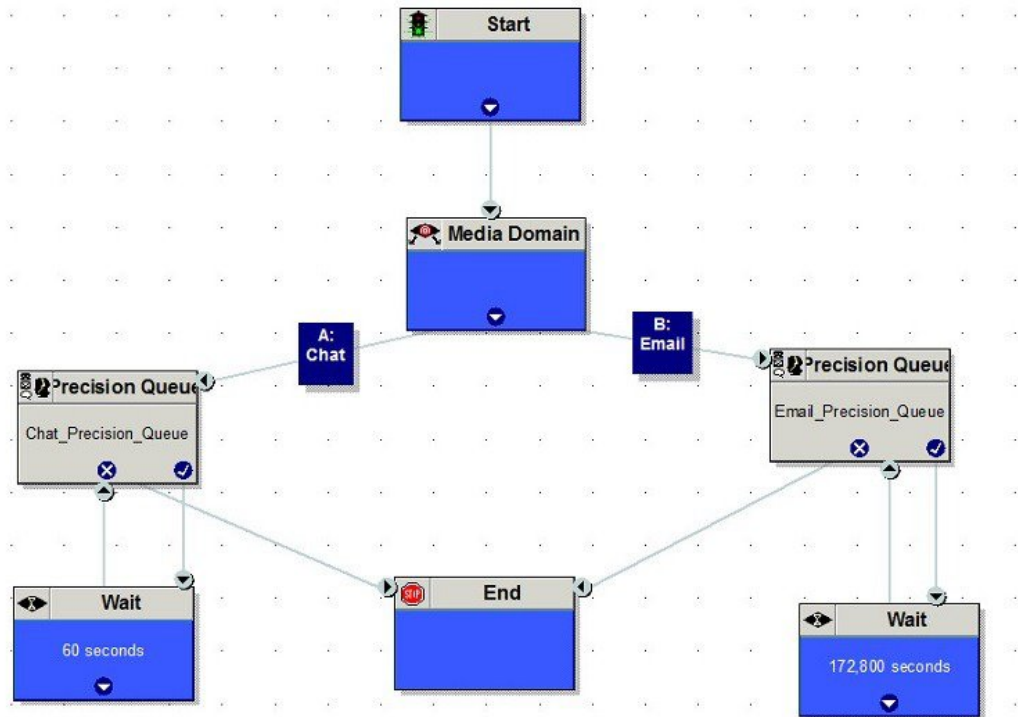


You would schedule this script to run for Call Types associated with contacts from the different channels. The script then uses the Media Routing Domain node to detect the MRD of the contact and branches to a Queue to Skill Group node that specifies skill groups specific to that MRD.

Categorization by Media Routing Domain with Precision Queues

The following script example shows how contacts can be categorized by Media Routing Domain, then queued to precision queues specific to that Media Routing Domain:

Figure 13: Categorizing by MRD with Precision Queues

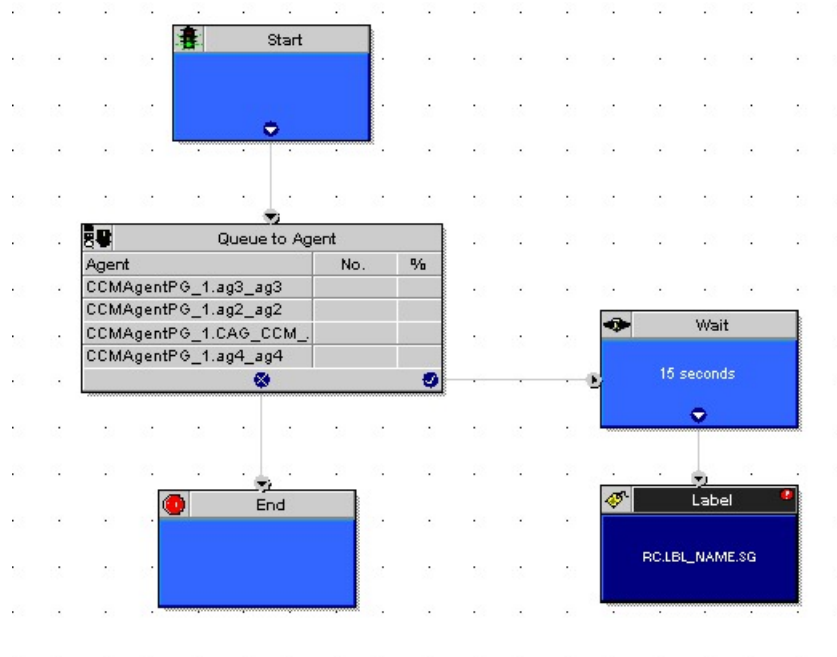


You would schedule this script to run for Call Types associated with contacts from the different channels. The script then uses the Media Routing Domain node to detect the MRD of the contact and branches to a Queue to Precision Queue node that a precision queue specific to that MRD.

Script That Queues to Agents

The following script example shows how contacts from different channels can be queued to agents:

Figure 14: Queuing to Agents

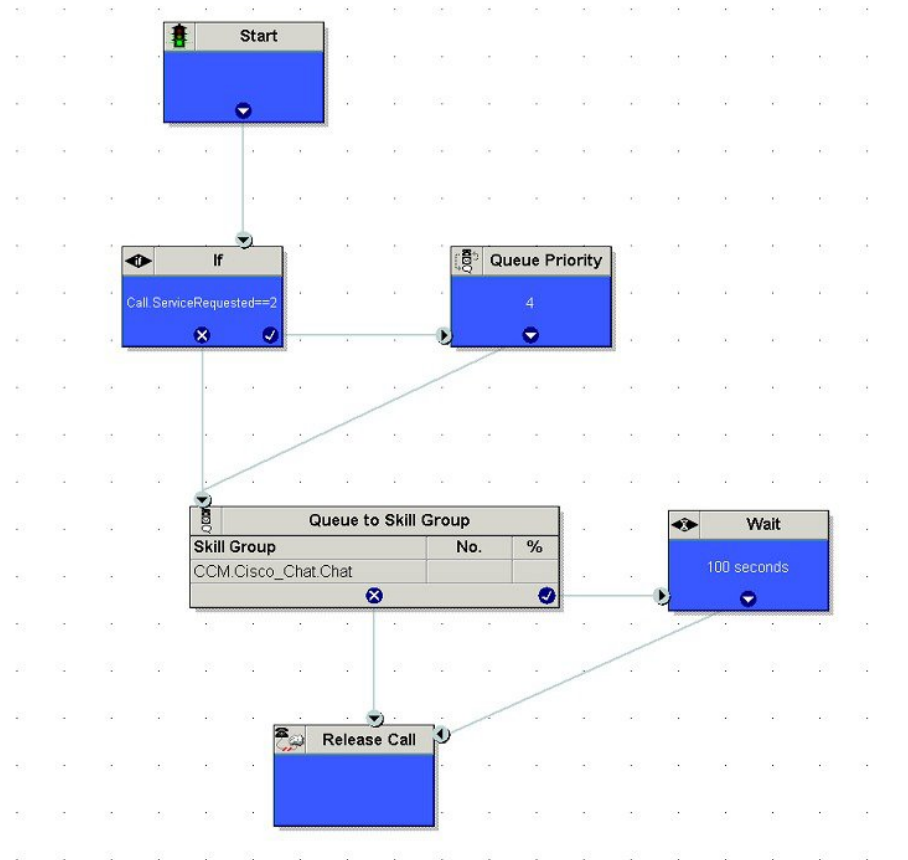


You would schedule this script to run for Call Types associated with contacts from the different channels. In the Queue to Agent node, each row defined for an agent also contains a Media Routing Domain selection. The script queues the contact to the agent with the selected MRD that matches the MRD of the contact.

RONA and Transfer Script

This example only applies to tasks submitted by third-party multichannel applications that use the Task Routing APIs. This example script shows the call priority increase if the service requested is 2 (TRANSFER).

Figure 15: Example RONA and Transfer Script



If the Call ServiceRequested call variable is set to 2 (TRANSFER) the call enters the Queue Priority node. The Queue Priority of the call is increased so that it is handled before any other calls in the queue. The Queue Priority node sends the call to the Queue to Skill Group node. If the Call ServiceRequested call variable is not set to 2 (TRANSFER), the call enters the Queue to Skill Group node.

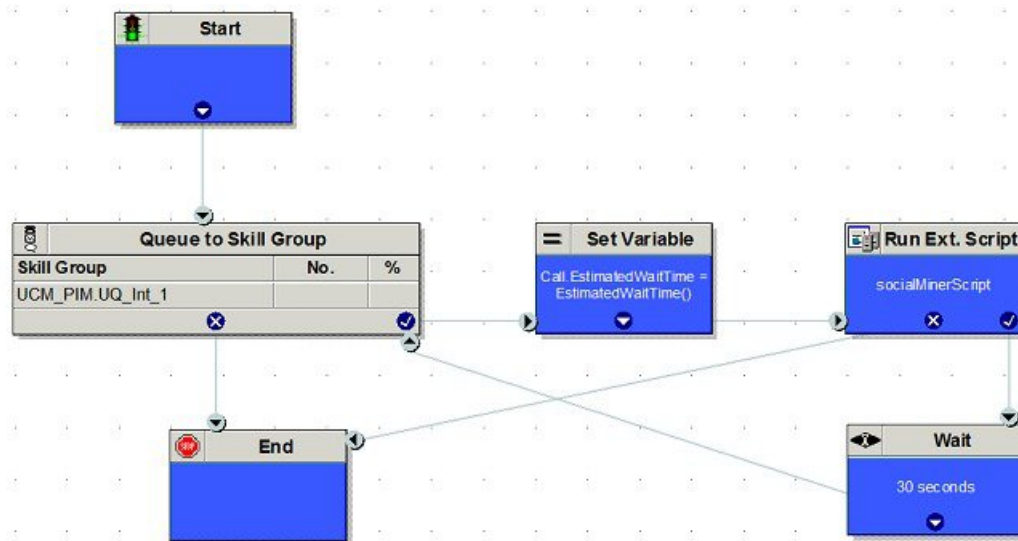
Estimated Wait Time Script

This example only applies to tasks submitted by third-party multichannel applications that use the Task Routing APIs.

Scripts for estimated wait time include:

- A Set Variable Node to set the estimated wait time.
- A Run External Script node to apply a Network VRU script that returns the estimated wait time to the customer.

Figure 16: Example Estimated Wait Time Script



Set Variable (Call.Estimated Wait Time) node: Set the estimated wait time as follows:

1. From the Set Variable node, select **Call** from the Object type drop-down menu.
2. 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.

3. Click **Formula Editor**, and do either of the following:
 - To use the default estimated wait value, click the Built-In Functions tab and choose EstimatedWaitTime()
 - To create a formula and use your own value, click the Variables tab and choose an entry in the Object type list and an entry in the Object list. Then double-click a variable in the Variable list.

Run Ext Script node: Apply the Network VRU script as follows:

1. Click the Queue tab.
2. Click **Run External Script**.
3. Click inside the script. A Run External Script node appears.
4. Double-click the node and choose the Network VRU script from the list; 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.

Example Unified CCE Scripts

Following are example scripts for use when the Unified ICM is part of a Unified CCE environment.

- Redirection on Ring No Answer
- Agent Transfer

These scripts are only examples; your company's needs may differ.

For more information about configuring Unified ICM as part of a Unified CCE environment, see the following documents:

- *Cisco Unified Contact Center Enterprise Installation and Upgrade Guide*
- *Administration Guide for Cisco Unified Contact Center Enterprise*



Note Additional Unified CCE example scripts are available in the *Cisco Unified Contact Center Enterprise Reporting User Guide* at https://www.cisco.com/en/US/products/sw/custcosw/ps1844/tsd_products_support_series_home.html.

Redirection on Ring No Answer

When configuring the Unified ICM in a Unified CCE environment, you configure Agent Desk Settings. When creating agents, you then associate each agent with one of the Agent Desk Settings you created.

One attribute of Agent Desk Settings is the **Ring no answer dialed number**:

Figure 17: Reroute on Ring No Answer

Attributes

Name * Settings_1

Ring no answer time 30 seconds (1 - 120)

Ring no answer dialed number IPCC_PIM1_RC.35000

Logout non-activity time 7200 seconds (10 - 7200)

Work mode on incoming * Required with Wrapup Data

Work mode on outgoing * Optional

Wrap up time 10 seconds (0 - 7200)

Assist call method Consult

Emergency alert method Consult

Description

Miscellaneous

Auto answer

Idle reason required

Logout reason required

Auto record on emergency

Outbound Access

International

National

Local private network

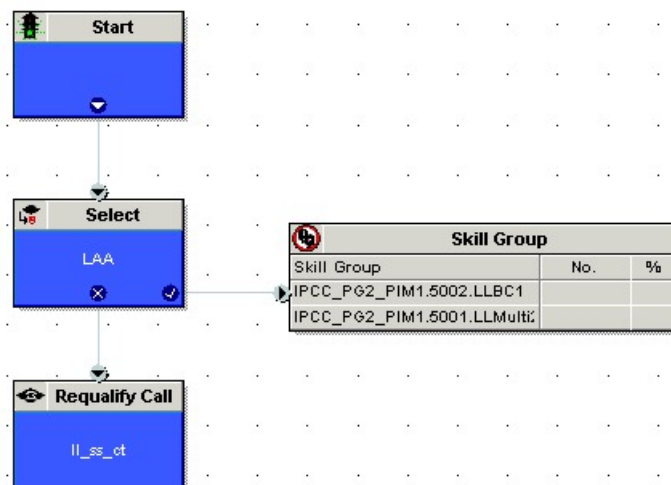
Operator assisted

PBX

For calls to be routed when an agent does not answer, you must create and schedule a script for the Call Type mapped to the Dialed Number selected for the agent's Desktop Settings.

For example, you may schedule a simple script to run when agents do not answer that tries to select the longest available agent from a set of skill groups, and if that fails, requalifies the call to a new Call Type to have it rerouted:

Figure 18: Reroute on Ring No Answer Script



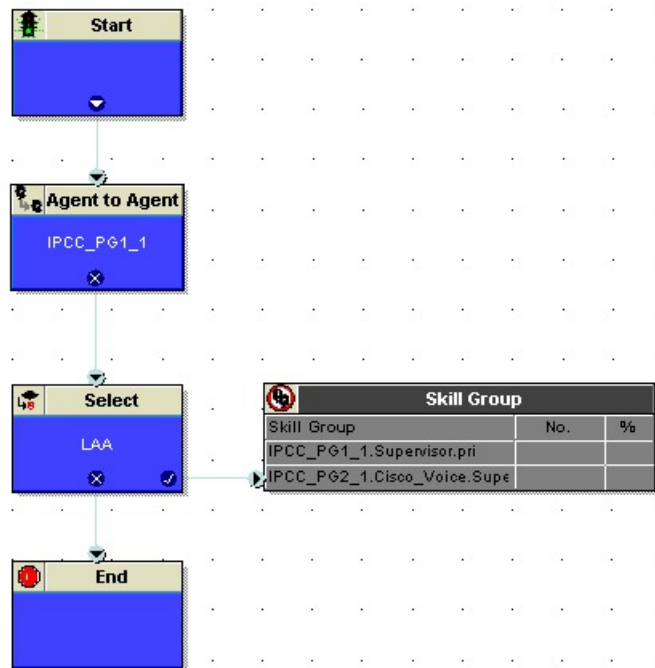
Agent Transfer

When configuring Call Types and dialed numbers in a Unified CCE environment, you typically may have a Dialed Number of *Routing_client.9999* for internal calls from agent to agent. You would create a call type associated with the Dialed Number, and schedule a script for calls of this call type. The script routes internal calls, which also allows you to track and report on such calls.

For example, you may schedule a simple script to run for internal calls that tries to route directly to the agent using the Agent to Agent node, which selects the agent by peripheral and the expression `Call.CallerEnteredDigits`:

If the node fails, then the script tries to select the longest available agent from the set of supervisor skill groups:

Figure 19: Agent to Agent Node Script



Additional Example Outbound Option Scripts

Following are example scripts for use when the Unified ICM is part of an Outbound environment:

- Setting the OutboundControl Variable and Skill Group Reservation Percentage
- Using the Dialed Number for the MR Routing Client and Routing through a Select Node to a Skill Group
- Transfer to IVR Using Outbound Option with Unified IP IVR
- Transfer to IVR Using Outbound Option with Unified CVP

These scripts are only examples, your needs may differ.

Control of OutboundControl Variable and Skill Group Reservation Percentage

You can use an administrative script to control the setting the OutboundControl variable and the skill group reservation percentage. The Outbound Option Dialer uses these values to determine which mode each skill group uses. You can use one script to control all Outbound Option skill groups, or multiple scripts can control multiple Outbound Option skill groups.

This administrative script comprises of Start, Set, If , and End nodes. Use the Set node to set skill group variables (OutboundControl and OutboundPercent).

Set the OutboundControl variable by entering it in the Value field of the Set Properties window:

- **INBOUND**: Indicates that this skill group is disabled for outbound use and only takes inbound calls.
- **PREDICTIVE_ONLY**: Dials several customers per agent. After reaching a live contact, the Predictive Dialer transfers the customer to a live agent along with a screen pop to the agent's desk. The predictive algorithm is designed to calculate the number of lines to dial per available agent to keep agent wait time to a minimum.
- **PREDICTIVE_BLENDED**: Agents receive inbound calls, but could be used for an outbound call when available.
- **PREVIEW_ONLY**: Reserves an agent prior to initiating an outbound call and presents the agent with a screen pop. The agent might then:

Accept the call:

- Dials the customer and transfers the call to the agent.

Skip the call:

- Agent receives another customer call.

Skip-Close the call:

- Skips the current preview call and closes the record so it will not be called again.

Reject the call:

- Releases the agent. At this point, the system might deliver the agent another preview outbound call or a new inbound call.

Reject-Close the call:

- Rejects the current preview call and closes the record so it will not be called again.

- **PREVIEW_BLENDED**: Agents receive inbound calls, but could be used for an outbound preview call when available.
- **PREVIEW_DIRECT_ONLY**: Agents can only place outbound calls and hear ring tones, such as phone ringing or busy signal.
- **PREVIEW_DIRECT_BLENDED**: Agents can receive inbound calls, place outbound calls, and hear ring tones, such as phone ringing or busy signal.
- **PROGRESSIVE_ONLY**: Similar to **PREDICTIVE_ONLY**; however, lines to dial per agent are not calculated—users configure a fixed number of lines that will always be dialed per available agent.

- PROGRESSIVE_BLENDED: Similar to PREDICTIVE_BLENDED, but a fixed number of lines will always be dialed per available agent.



Note If the administrative script (where the OutboundControl variable or reservation percentage is set) is running, but the modes/percentages are not being updated at the Dialer, do the following:

- Make sure that the skill group being controlled is the base skill group, and not the primary or secondary skill groups. Although agents may be logged in to just the primary or secondary skill group, the outbound control variable must always be set on the base skill group
- Verify that the outbound control variable mode is spelled correctly.

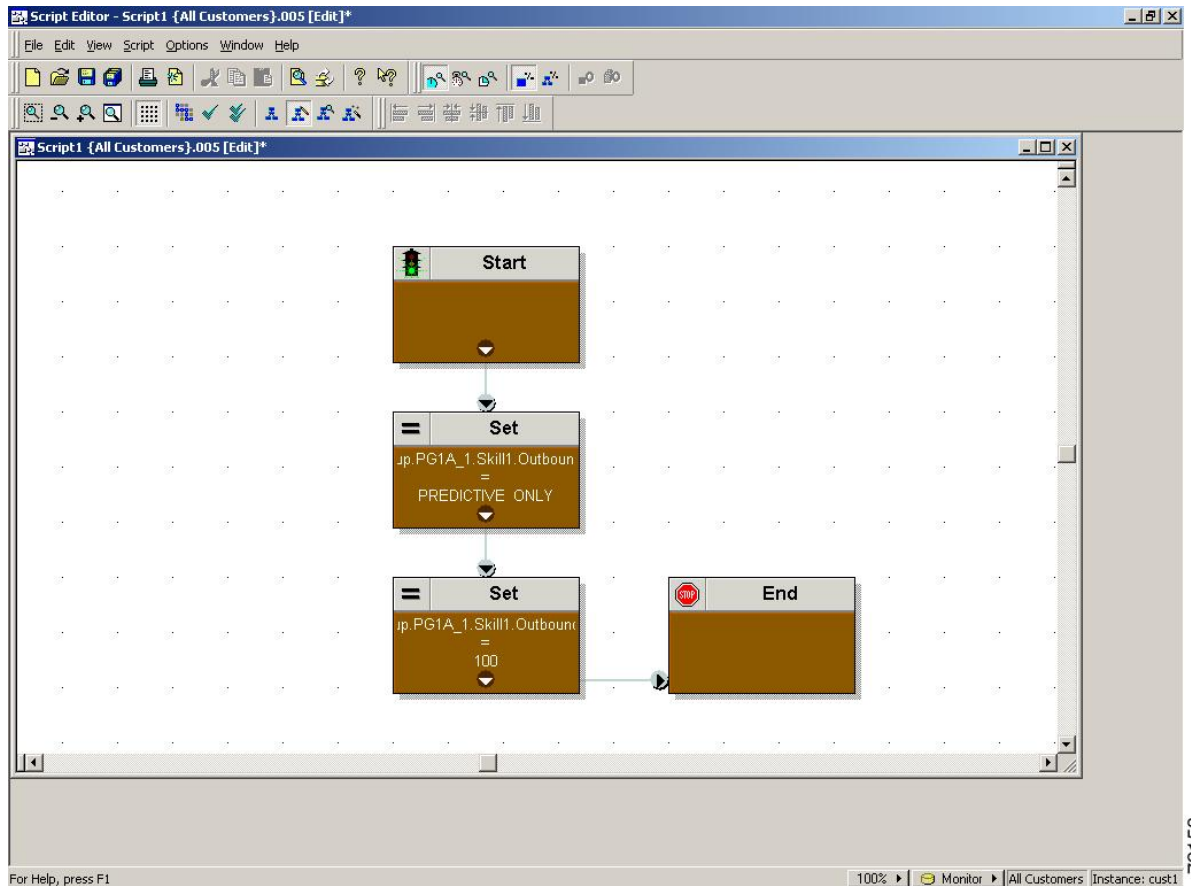
Set the OutboundPercent variable in the same administrative script. Select the OutboundPercent variable in the Set Properties window and enter the agent percentage in the Value field. This variable controls the percentage of agents that are logged in to a particular skill group, which should be used for outbound dialing. For example, if there are 100 agents logged into skill group N, and the OutboundPercent variable is set to 50%, 50 agents would be allocated for outbound dialing.



Note This variable does not allocate specific agents for outbound dialing, just a total percentage.

The following diagram displays a very simple administrative script where both the OutboundControl variable and the outbound percentage are set for a skill group. A script in a production call center would typically be more complex, perhaps changing these variables due to time of day or service level.

Figure 20: Setting the OutboundControl Variable and Skill Group Reservation Percentage



Use Dialed Number for MR Routing Client

The following diagram displays a sample routing script that uses the Dialed Number for the MR routing client and routes through a Select node to a previously configured skill group. Add additional DN nodes to route to agents in additional skill groups as you must maintain a 1:1 ratio of dialed numbers to skill groups.



Warning You must set the outbound percentage in the Set node to a value other than zero (0) or it appears to the node that there are no agents assigned to the Outbound Option and no outbound calls will be made.



Warning Do not use Select Route nodes, multiple skill groups, or services.



Note Translation routes are not used in the Unified CCE System PG, so routing scripts using this PG do not need to use this object.

Configuring Queue to Agent Node

Procedure

	Command or Action	Purpose
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	Click Lookup agent reference by expression , then click OK .	
Step 4	Enter the agent expression Call.PreferredAgentID.	
Step 5	Make sure the Peripheral column is left blank.	
Step 6	Select the enterprise skill group.	
Step 7	Select the enterprise route.	
Step 8	Click OK to save the Queue to Agent node.	

What to do next

Figure 21: Queue to Agent Node Properties

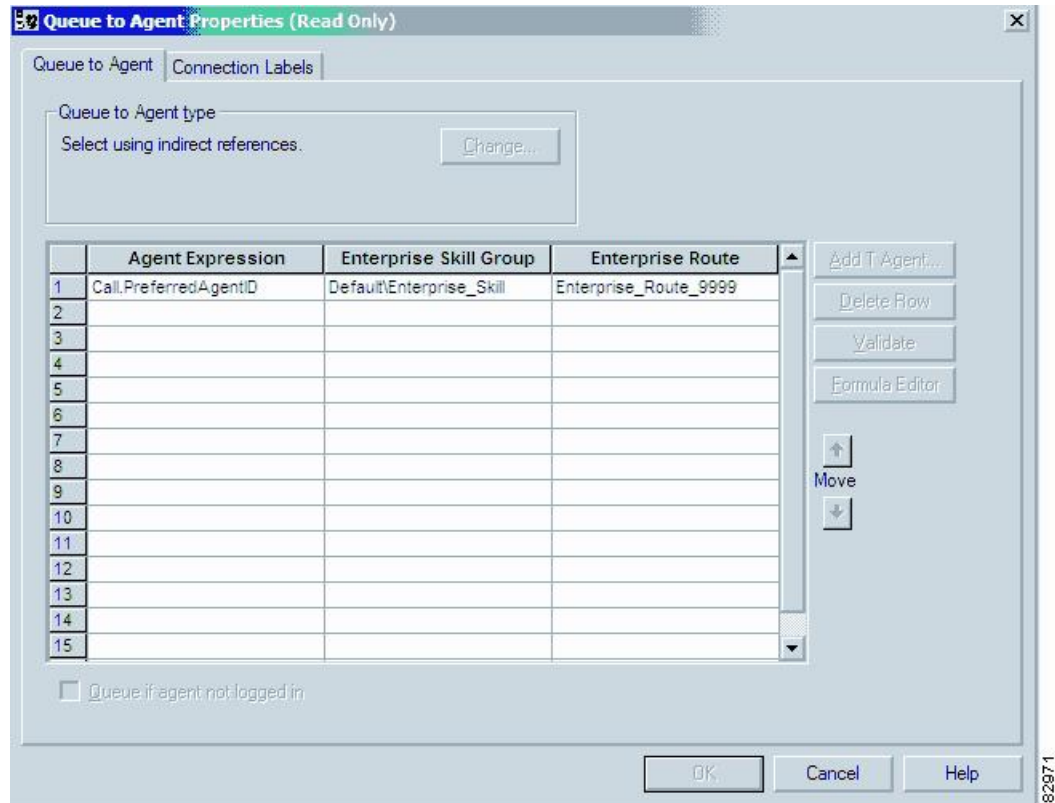
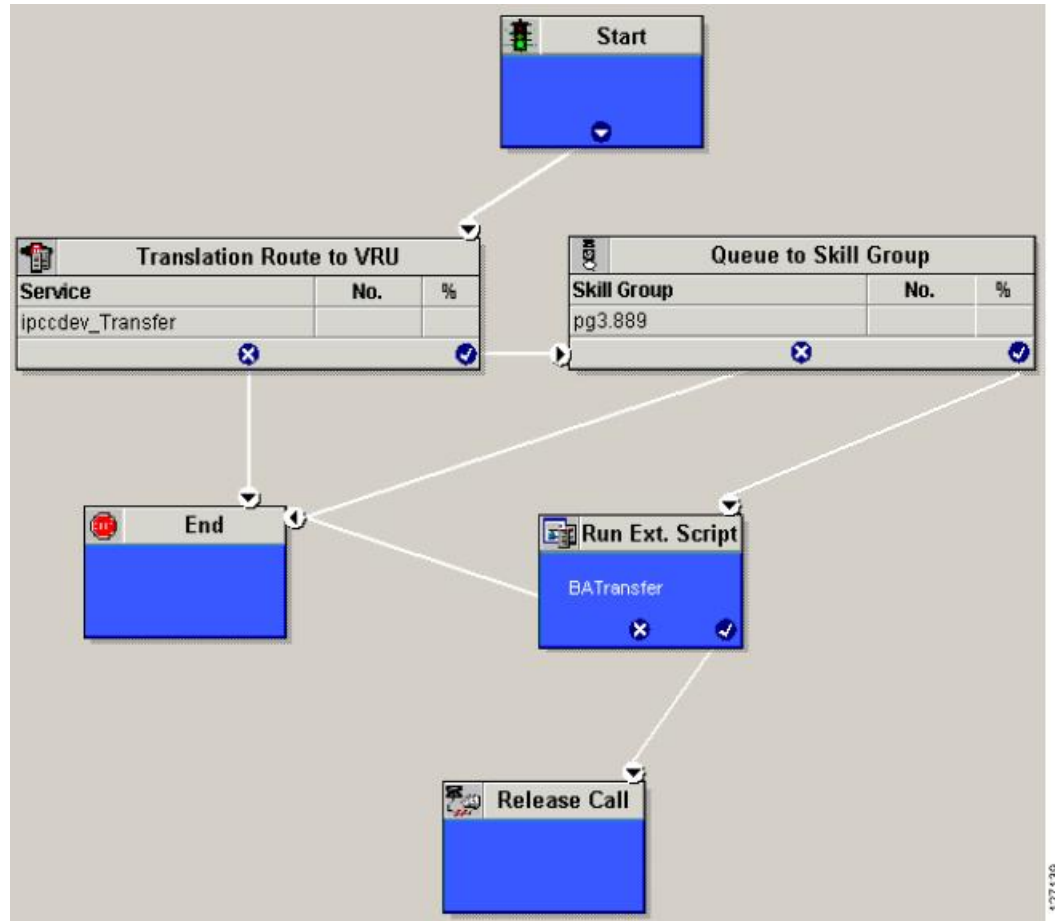
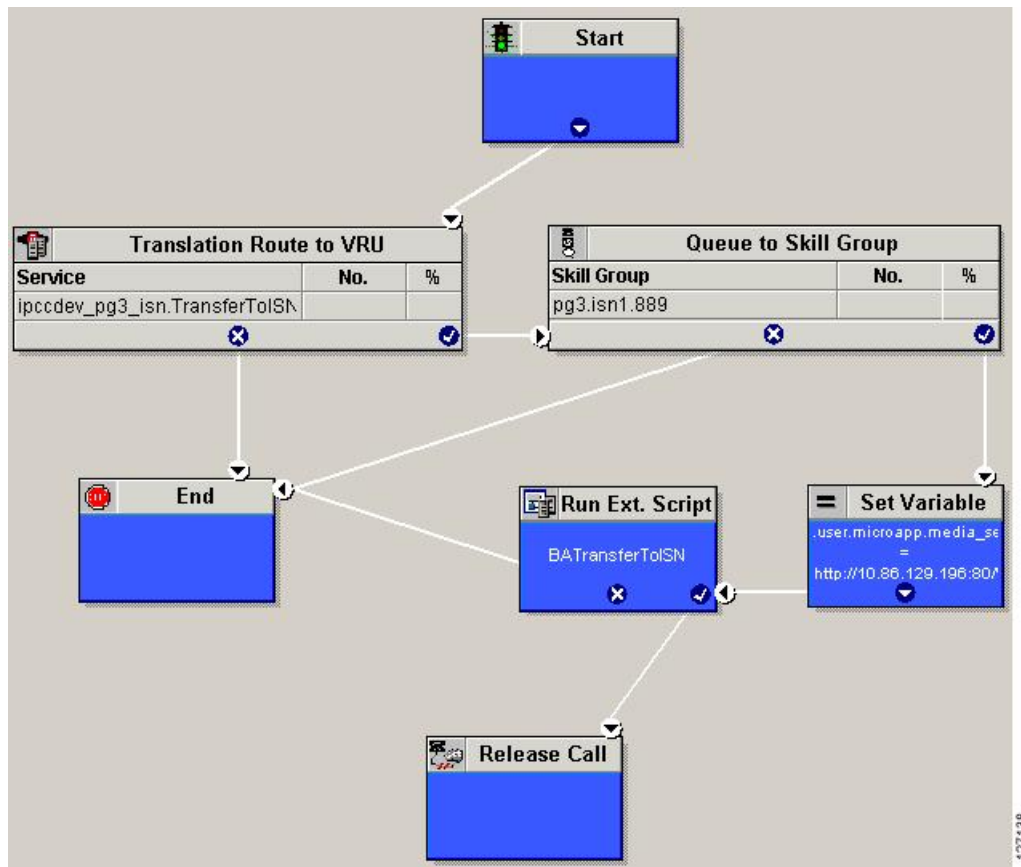


Figure 23: Transfer to VRU Using Outbound Option with Unified IP IVR



Transfer to VRU Using Outbound Option with Unified CVP

The following diagram displays a routing script for a transfer to VRU campaign using the Outbound Option with the Unified CVP.



Estimated Wait Time (EWT) Queues

The Script Editor's built-in Minimum Expected Delay (MED) calculation does not apply to the Unified CCE. Instead, you can use the built-in function, `EstimatedWaitTime`, or write a formula on an IF node to determine the MED between two skill groups.

The default `EstimatedWaitTime` algorithm is based on a running five minute window of the rate of calls leaving the queue. Any calls which are routed or abandoned during the previous 5 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 Group(s) or Precision Queue(s)) and then returns the minimum estimated wait time. Queue to Agent(s) is not supported. 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.

When a queue is just being built, 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.

If the built-in `EstimatedWaitTime` function does not meet your needs, you can apply your own custom formula.

When to Use EWT Queues

Look for a secondary skillgroup choice in the following situations:

- No available agents in the primary or first choice skill group
- The call has already been sent to a VRU queue point
- The call has been queued to the primary or first choice skill group
- An adequate amount of time has elapsed (customer and call dependent)

After the above conditions have been met, if there are no agents available in the subsequent or secondary choice skillgroup, then Minimum Expected Delay (MED) of the subsequent skillgroup should be calculated.

Example EWT/MED Script Formula

You can use the example formula below in an IF node to determine the EWT/MED for a call that you can route to either a primary or secondary skill group. The call is routed to the skill group with the lowest MED:

```
EntSkill.Default\EnterpriseSkillgroupSec.Avail ||
(EntSkill.Default\EnterpriseSkillgroupPri.LoggedOn>0)
&&
(EntSkill.Default\EnterpriseSkillgroupSec.LoggedOn>0)
&&
((SkillGroup.CCM_PG_1.CCM_SG.sec.RouterCallsQNow+1)*
(ValidValue(EntSkill.Default\EnterpriseSkillgroupSec.AvgHandledCallsTimeTo5,<constant>))
/EntSkill.Default\EnterpriseSkillgroupSec.LoggedOn)
<
((SkillGroup.CCM_PG_1.CCM_SG.pri.RouterCallsQNow+1)*
(ValidValue(EntSkill.Default\EnterpriseSkillgroupPri.AvgHandledCallsTimeTo5,<constant>))
/EntSkill.Default\EnterpriseSkillgroupPri.LoggedOn)
```

EWT/MED Script Explained

If there are agents available, then there is no need to calculate the MED and the IF node should return a TRUE value. If there are no agents available, then the MED of the secondary skillgroup should be calculated.

The formula first checks to make sure agents are logged in to both the primary (already queued to) and secondary (not queued to) skill groups. If there are agents logged in to both skill groups, then the minimum expected delay of the secondary skillgroup is compared to the minimum expected delay of the primary skillgroup to see which is less.

If the secondary skillgroup MED is less, then the call should be queued at the new secondary skillgroup. (The call can either be kept in the initial skillgroup or taken out of the initial skillgroup when it is queued to the secondary skillgroup.)

However, if the secondary skillgroup's MED is not less than the primary skillgroup's MED, then the call should remain queued at the initial skillgroup only. +1 is used to add this new call into the algorithm.

Because the `RouterCallsQNow` variable is only applicable at a Skillgroup and not an Enterprise Skillgroup level, then the aggregate of all the skill groups within the Enterprise Skillgroup `RouterCallsQNow` field must be multiplied by the Enterprise SkillGroup `AvgHandledCallsTime`.

The `<constant>` value is site dependent. It should be a value that represents the average Handle time of a call. This constant is only used if it is at the start of the day and the proper `AvgHandledCallsTime` has not been calculated.