



## Desktop Feature Config

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## Agent Feature Configuration with Agent Desk Settings List Tool

You must associate each voice Agent record with an *agent desk setting* (not necessary for non-voice agents). You can use the agent desk settings list tool configuration to associate a set of permissions or characteristics with specific agents. You can use the agent desk settings list tool to configure the following agent features:

- Agent Wrap-up
- Reason Codes
- Redirection on No Answer
- Emergency and Supervisor Assist Calls



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**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.

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**Note** For any change, you perform in the **Agent Desk Settings** to take effect, log out and then log in to the Finesse Agent Desktop.

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## Agent Wrap-Up

Agents can enter Wrap-up mode after completing a call. Wrap-up mode enables the agent to finish with any tasks that require after-call work before entering a Ready state. When in Wrap-up mode, the agent is not routed any additional tasks.

Agents can manually enter Wrap-up state by activating the wrap-up button on their soft phone. You can also configure agent desk settings so that agents automatically enter Wrap-up mode after finishing each call.

When you create agent desk settings using the Unified ICM/Unified CCE Administration User Interface, you can specify whether agents enter Wrap-up mode automatically after finishing incoming calls. The Work Mode Settings allow you to specify whether the agent must enter Wrap-up mode after incoming calls. You can also use these settings to require agents to enter reason codes while in Wrap-up mode (incoming calls only).

## Reason Codes

Agents select Reason Codes when they:

- Log out of the agent desktop system
- Enter Wrap-up mode after a call
- Change to a Not Ready state

Reason Codes allow you to track the agent's state and logout status as it changes. You configure Reason Codes using the agent desktop application.

## Agent Desk Settings That Affect Reason Codes

Agent desk setting option	Affects this type of reason code
Work mode on Incoming	Wrap-up
Idle reason required	Not Ready
Logout reason required	Logout

### Wrap-Up Reason Codes and Work Mode

If you use the agent desktop, you can use the Work Mode on Incoming option on the agent desk settings list window to specify when and if agents are required to enter Reason Codes when entering Wrap-up for incoming calls. The following table describes Work Mode on Incoming options and explains how Reason Codes are related to each.

Work Mode	Description	Reason Code
Required	Ensures that the agent automatically enters Wrap-up state after completing the call.	The agent can choose to enter a Reason Code.
Optional	Allows agents to choose whether to activate the wrap-up button or the <b>Not Ready</b> button at the end of the call.	If the agent uses the wrap-up button, the agent can choose to enter a Reason Code.
Not Allowed	Restricts the agent from entering Wrap-up mode. The agent can go into Not Ready mode.	The agent can decide whether to enter a Not Ready Reason Code.

Work Mode	Description	Reason Code
Required with wrap-up data	Ensures that the agent automatically enters Wrap-up state after completing the call.  <b>Note</b> This mode is not supported for outgoing calls.	The agent must enter a Reason Code.

## Predefined Reason Codes

Unified CCE uses several predefined reason codes to indicate certain system events, described in the following table.

Reason Code	Description
32767	Agent state changed because the agent did not answer the call.
50001	The CTI client disconnected, logging the agent out.  <b>Note</b> This reason code is converted to a 50002, so 50001 does not display in the agent log out records.
50002	A CTI component failed, causing the agent to be logged out or set to Not Ready. This could be due to closing the agent desktop application, heartbeat time out, a CTI Server failure, or CTI server client failure (like Finesse.)
50003	Agent was logged out because the Unified CM reported the device out of service.
50004	Agent was logged out due to agent inactivity as configured in agent desk settings.
50005	For a Unified CCE agent deployment, where the Agent Phone Line Control is enabled in the peripheral and the Non ACD Line Impact is configured to impact agent state, the agent is set to Not Ready while talking on a call on the Non ACD line with this reason code.
50010	Agent was set to Not Ready state because the agent was routed two consecutive calls that did not arrive.
50020	Agent was logged out when the agent's skill group dynamically changed on the Administration & Data Server.
50030	If an agent is logged in to a dynamic device target that is using the same dialed number (DN) as the PG static device target, the agent is logged out.
50040	Mobile agent was logged out because the call failed.
50041	Mobile agent state changed to Not Ready because the call fails when the mobile agent's phone line rings busy.
50042	Mobile agent was logged out because the phone line disconnected while using nailed connection mode.
-1	Agent reinitialized (used if peripheral restarts).

Reason Code	Description
-2	PG reset the agent, usually due to a PG failure.
-3	An administrator modified the agent's extension while the agent was logged in.

These reason codes appear in these reports:

- Agent log out reports if the event caused the agent to log out.
- Agent real time reports if the agent was set to a Not Ready state.
- Agent Not Ready reports.




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**Important** For reporting on all PGs other than VRU PGS, be sure to select the **Agent event detail** check box on the Agent Distribution tab in the Unified ICM/Unified CCE Administration User Interface's PG Explorer tool. You must select this check box to report on Not Ready Reason Codes.

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## Redirection on No Answer

You can configure your Unified CCE system to handle and accurately report on situations when the agent does not answer their phone. These situations are referred to as Redirection on No Answer.

Although you can specify some values that control Redirection on No Answer situations, configuring Redirection on No Answer involves additional steps:

- Unified ICM/Unified CCE configuration
- Unified ICM/Unified CCE scripting
- Unified CM configuration

Redirection on No Answer conditions are handled by two routing scripts: the initial routing script and a script specifically set up for these conditions. The initial routing script handles the incoming call; when the call is redirected on no answer from the agent's IP phone, the script branches to another script set up specifically for Ring No Answer conditions. For more information on Redirection on No Answer, see the *Scripting and Media Routing Guide for Cisco Unified ICM/Contact Center Enterprise* at [http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products_user_guide_list.html).




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**Note** The Target Requery script feature, implemented using the Label, Queue, Route Select, and Select nodes, is not supported for Unified CCE systems; however, it is supported for Cisco Unified Customer Voice Portal (Unified CVP).

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## Emergency and Supervisor Assist Calls

Agents can activate Supervisor Assist or Emergency Assist buttons on their desktop when they need special assistance from the primary or secondary supervisor assigned to their team.

Agents can use the Supervisor and Emergency assist features, regardless of whether or not they are on a call.

There are two types of Supervisor and Emergency Assist calls:

- Existing call—Consult must be selected as an option on the agent desktop settings for supervisor or emergency assist. If the agent is on a call when they activate either the supervisor or emergency assist feature on their desktop, the CTI software activates the conference key on behalf of the agent's phone and calls the supervisor via the Supervisor or Emergency Assist script. (This example assumes the emergency or supervisor assist script has an Agent-to-Agent node to find a supervisor.) The supervisor answers the call and consult privately with the agent. During the consultation, the supervisor can decide to barge into the call.
- No call—If the agent is not on a call when they activate either the supervisor or emergency assist feature on the agent's desktop, the CTI software activates the make call functionality on behalf of the agent's phone and calls the supervisor via the Supervisor or Emergency Assist script.



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**Note** Blind Conference is not supported for Emergency and Supervisor Assist.

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## Agent Reskilling

Unified Contact Center includes the CCE web Administration application, which is a browser-based application and is separate from the supervisor desktop. CCE web administration lets supervisors change the skill group designations of agents on their team, quickly view skill group members, and view details on individual agents.



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**Note**

- If an agent is currently in a call, a change to the agent's skill group membership takes place after the call has terminated.

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## Skill Groups and Precision Queues per Agent Limit

Unified ICM and Unified CCE impose a default limit on the number of skill groups and precision queues that you can assign to a single agent. After this limit is reached, you cannot reassign additional skill groups or precision queues.

You can also use the Configuration Limit tool to specify your own limit on the number of skill groups and precision queues that you can assign to an agent. For optimum performance, you can specify a limit far lower than the system default.

For more information, see the *Dynamic Limits for Skill Groups and Precision Queues Per Agent* topic in the *Solution Design Guide for Cisco Unified Contact Center Enterprise, Release 12.5(1)* and later at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-implementation-design-guides-list.html>

**Caution**

The Configuration Limit tool is a command-line tool utility from the bin directory of all Unified ICM and Unified CCE Administration & Data Servers. Access is limited to users with privileges for the Setup or Config Groups in Active Directory for the chosen customer instance. For more information about the Configuration Limit tool, see *Outbound Option Guide for Unified Contact Center Enterprise*.

## Modify the Precision Queues and Skill Groups per Agent Limit

Complete the following steps to view and modify the current limit on the precision queues per agent and skill groups per agent using the Configuration Limit tool:

**Step 1** From the Windows menu, select **Start > Run**, type `configlimit`, and then click **Enter**.

**Note** Run the Configuration Limit tool on the same machine as the Distributor for the instance you want to configure. If more than one instance of the Administration & Data Server is installed on the Distributor machine, use the Select Administration Server tool to select the instance you want to configure.

**Step 2** To view the current configuration limit, run the following command:

```
cl /show
```

**Step 3** To change the current limit, enter a command in the following format:

```
cl /id 1 /value [ConfigLimitCurrentValue] [/update]
```

Where:

- id 1 = the ID of the skill groups/precision queues per agent limit.
- ConfigLimitCurrentValue = the parameter limit. In this case, the parameter limit applies to both the skill groups per agent and the number of precision queues per agent.

For example, to change the precision queues/skill groups per agent limit to 50, enter the following:

```
cl /id 1 value/50 /update
```

**Note** Using the Configuration Limit tool, you can change the ConfigLimitCurrentValue only. You cannot change the ConfigLimitDefaultValue.

## Additional Requirements

### Lowering the Limit

If you have modified the skill groups per agent limit to be lower than the system default, no additional changes are necessary. The new, lower limit is enforced immediately. Note that the new limit does *not* impact agents whose existing skill group membership exceeds the new limit until the next attempt to add a new skill group for those agents. At that time the new limit is enforced, preventing you from adding additional skill groups.

## Exceeding the Default Limit

If you have modified the skill groups per agent limit to be higher than the system default (in spite of the Warning given above), certain deployments require additional changes (listed in the following sections) to your system to use the new limit and allow you to add additional skill groups.

### IPCC Gateway PG

For IPCC Gateway deployments, modify the following registry keys on your IPCC Gateway PGs to include the new value. A change to the registry requires that you restart the PG service.

IPCC Enterprise Gateway PIM (Cisco Unified Contact Center Enterprise parent):

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\< customer_instance
>\PG{n} [A|B]\PG\CurrentVersion\PIMS\pim{m}\ACMIData\Config\MaxSkills
```

IPCC Express Gateway PIM (Cisco Unified Contact Center Express parent):

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\< customer_instance
>\PG{n} [A|B]\PG\CurrentVersion\PIMS\pim{n}\ACMIData\Config\MaxSkills
```

## Network Transfer for IVRs

When a call is transferred from an IVR (for example, IP IVR) to an agent and that agent wants to transfer the call to another agent, the transfer can be made either from the agent's IP phone or the agent desktop.

Transfers made from the:

- IP phone are made using CTI route points that point to a Unified ICM/Unified CCE script.
- Agent desktop are made using the Dialed Number Plan.




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**Note** If the route point is configured using Unified CM, there is no difference between using the hard phone or the desktop phone.

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For network transfer from either the IP phone or the agent desktop, you must queue the call to the skill group in the first Unified ICM/Unified CCE script; for example, “NetXfer1,” to create the call context. In this script you must set the “networkTransferEnabled” flag to “1”.




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**Note** IP IVR *does not* support network transfer. Unified CVP supports *only* network “blind” transfer.

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## Unified CCE Routing

To understand how Unified CCE routes voice calls, you must understand the concepts of routing operation and routing configuration.

## Routing Operations

To understand how Unified CCE routing occurs, you must understand these concepts:

- **The Routing Client:** The Unified CCE component that submits a route request to the Central Controller.

In Unified CCE configurations, the routing client can be:

- The Unified CM PG
- An interexchange carrier (IXC)
- A VRU PG
- A Media Routing Peripheral Gateway

When a routing client makes a request for a route from the Unified ICM/Unified CCE platform, it receives the response and delivers the call to the specified destination. If an Unified CCE agent is available, Unified ICM/Unified CCE software routes the call to the device target (phone) on the Unified CM (device targets are dynamically associated with the agent when the agent logs in to the system). If an agent is not available, you can configure Unified ICM/Unified CCE software to queue the call to IP IVR or Unified CVP.

- **Route and Queuing Requests:** Messages sent from the routing client to the Central Controller. Route requests typically pass along call detail information about the incoming call. Unified ICM/Unified CCE software uses information in the route request to determine which routing script is run for the call.

Call detail information sent with the route request can include:

- Dialed Number (DN)
- Calling line ID (CLID)
- Caller Entered Digits (CED)

Queueing requests are messages sent from the VRU using the Cisco Service Control Interface. The VRU makes a queue request to provide announcements or music when no Unified CCE agents are available to take the call.

- **About Routing to the VRU with Unified CCE:** With Unified CCE you can ensure that voice calls are routed to the VRU when an agent is not immediately available. The call is queued to the VRU and sent to the next available agent via the routing script.

The configurations for routing to a VRU in a Unified CCE environment include:

- Translation Route to the VRU via a route on the PG. The Unified CM uses the DNIS in the translation route to direct the call to the VRU.
- A network route request is issued by the carrier via the NIC. The DNIS and/or Correlation ID is retrieved from the carrier.
- The call is sent directly to the VRU, so that caller entered digits (CED) can be collected.

You do not need a translation route to a Unified CM PG because it is targeting agents and implicitly matches call data.



- **Routing a Call to the VRU:** Translation routing is the preferred method of routing a call to the VRU. The DNIS used in the translation route is not the original number dialed by the customer, but rather, the Dialed Number used to route the call to the VRU.

The scenario is as follows:

- Call comes in to the Unified CM.
- Unified CM identifies the number as a route point for the Unified CM PG.
- The Unified CM PG receives a route request from the Unified CM and forwards it to the CallRouter.
- The CallRouter runs the script for the translation route to the VRU.
- A Label is returned to the Unified CM via the Unified CM PG.
- The Unified CM routes the call to the VRU, based on the CTI route point for the translation route.
- VRU sends up a request instruction with the DN as the DNIS.
- VRU PG matches up the call and the Correlation ID, then informs the CallRouter of the call arrival with a “request instruction.”
- The CallRouter matches the correlation ID and finds the pending script/call.
- The CallRouter continues with script (for example, run script).

For translation routing, the VRU Type to configure in the Network VRU in the Unified ICM/CCEho Administration User Interface is type 2.

Be sure the Unified CM PG routing client and the VRU PG routing client both have the labels mapped for the peripheral targets in the translation route.

## Routing Configuration

To set up routing in your Unified CCE system, you must set up the following entities:

- **Dialed Numbers:** The dialed number is the number that the caller dials to contact an agent. It is sent as part of the call detail information in the route request message sent from the routing client.

In the system software, you set up a Dialed Number List. It identifies all of the phone numbers in your contact center that customers can dial to initiate contact.

The Dialed Number plays an integral role in routing calls. Dialed Numbers are required pieces of Unified ICM call types that are used to identify the appropriate routing script for each call.

- **Call Types:** A call type is a category of incoming Unified ICM routable tasks. Each call type has a schedule that determines which routing script or scripts are active for that call type at any time. There are two classes of call types: voice (phone calls) and non-voice (for example, email and text chat). Voice call types are categorized by the dialed number (DN), the caller-entered digits (CED) and the calling line ID (CLID). Non voice call types are categorized by the Script Type Selector, Application String 1, and Application String 2. In either case, the last two categories of the call type can be optional. For voice call types, the caller-entered digits and the calling line ID can be optional, depending on the call. For non voice call types, Application String 1 and Application String 2 can be optional, depending on the application.

Because the call type determines which routing script is run for a call, the call type defines call treatment in a Unified CCE system. Therefore, the call type is the highest level reporting entity. Reporting on call type activity provides insight into end-to-end customer interactions with the system and with agents by providing data such as service level adherence, transfers, average speed of answer, calls handled, and calls abandoned.

In routing scripts, such as scripts for Self-Service VRU applications, you may change the call type at specific points in the script to indicate that a transaction has been completed. For example, if the customer is calling a bank and successfully checks their account balance using a Self-Service script, you may want to change the call type to indicate that the account balance transaction has completed and a new transaction has begun.

You can also change the call type in a script to invoke a new routing script associated with that call type. For example, if a call is not answered at an agent's desktop, you can change the call type in the script to redirect the call to a different script designed for Redirection on No Answer. The Redirection on No Answer script assigns a different agent to handle the call.

- **Routes:** Unified ICM/Unified CCE software uses routes to define the mapping of a target to a specific label for a routing script. Targets include services (service targets), skill groups (skill targets), agents (device targets), and translation routes.

Routes must be defined for VRU Translation Routing and to route calls to agents.

- **Device Targets:** Device targets are deprecated. A device target is a telephony device that can be uniquely addressed (or identified) by a telephone number. A device target is not associated with any one peripheral. Each device target must have one or more labels associated with it, although only one label may exist per routing client. Replace device targets with **Agent Targeting Rules**, which greatly simplifies call routing configuration.
- **Labels:** A label is the value that Unified ICM/Unified CCE software returns to a routing client instructing it where to send the call. The routing client can map the label to an announcement, a trunk group and DNIS, or a device target. Special labels might instruct the routing client to take another action, such as playing a busy signal or an unanswered ring to the caller.

If the label is for a device target, the routing client is responsible for delivering the call to the device target on the Unified CM through the voice gateway.

If the label is for a VRU queue point, the routing client delivers the call to the Route Point on the VRU. The VRU must recognize that the call has arrived and then request queue instructions from Unified ICM/Unified CCE software. Unified ICM/Unified CCE software returns either a destination for the call or instructions on what script the VRU will run, based on a particular Call Type.

- **Services:** You set up Services in Unified ICM/Unified CCE software to represent the type of processing that a caller requires, and to configure VRU Services to route calls to the VRU. For example, you might define separate services for Sales, Support, or Accounts Payable. A Service is often associated with a peripheral and can be referred to as a Peripheral Service.

For Services that are used to route a call to an agent, you must associate them with skill groups. You associate different Skill Groups with Services by making them members of the Service. Using Services allows you to group agents working in like skill groups.

- **Skill Groups:** Agents must be associated with skill groups to receive Unified ICM-routed calls. You create skill groups using the Unified ICM/Unified CCE Administration User Interface.

A *base skill group* is the main skill group created using the Unified ICM/Unified CCE Administration User Interface. Using base skill groups ensures accurate agent reporting and simplifies configuration and scripting for your contact center.

Agents must be associated with skill groups or precision queues.



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**Note** A *sub-skill group* is a subdivision of a base skill group. Sub-skill groups are not supported since Unified CCE 9.0(1); the only instance where they are still supported is for Avaya PG and Avaya Aura PG peripherals in Unified ICM deployments. You *cannot* create a sub-skill group for the System PG, CallManager, and ARS PG peripheral types. You can only remove sub-skill groups from these peripheral types. Sub-skill groups are also not supported for non-voice skill groups. You cannot create sub-skill groups for chat and email.

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- **Precision Queues:** You can create multidimensional precision queues based on predefined business criteria using the Unified CCE Web Administration. Agents automatically become members of these precision queues based on their attributes, dramatically simplifying configuration and scripting.

- **Migrating from Sub-skill Groups to Base or Enterprise Skill Groups**

Follow these steps to migrate from sub-skill groups to base and enterprise skill groups:

- Disable the sub-skill group mask for the peripheral using the PG Explorer tool. All skill groups created after you complete this are base skill groups.
- Define a new base skill group to correspond with each sub-skill group being removed.
- Assign agents to the new base skill groups and remove them from your sub-skill groups.
- Optionally, create enterprise skill groups to group the base skill groups.
- Update all of your routing scripts and routing templates so that they refer to the newly created base or enterprise skill groups.

## Routing Scripts

A routing script, created using the Script Editor, identifies the desired agent based upon skills and customer database profile, determines the call target, and returns a route response to the routing client.

