Agents

Agent States

Agent states are determined from an agent's activity *within a skill group or precision queue*. Agent state is recorded in numerous database tables and is presented in reports as both a number (*Not Ready*) and as a percentage (*% Not Ready*).

You can monitor agent states in real time to view current agent activity. You can also review past performance data to identify trends in agent states. For example, historical reports can show how much time an agent spends in Not Ready state, which indicates whether the agent is adhering to the schedule.

Note
For Unified CCE, agent state data is forwarded from the peripheral. Agent states reported by the ACD might not be equivalent to agent states reported by Unified CCE. And for some ACDs, certain agent states might not be applicable at all. For example, an ACD might support the *Work Ready* state but not the *Work Not Ready* state. See the appropriate *ACD Supplement Guide* for information on ACD agent state definitions and how they correspond to Unified CCE Agent States.

Information for some states is different when an agent is configured to handle multiple concurrent tasks in a Media Routing Domain (MRD). This table highlights these differences.

Table 1: Agent States That Appear in Reports

State in Skill Group or Precision Queue	Description for single-session MRDs	Description for multisession MRDs
Active or Talking	The agent is working on a task or a call in this skill group or precision queue. For agents who handle nonvoice tasks, this state is reported as *Active*. For agents who handle voice tasks, this state is reported as *Talking*.	The agent is working on one or more tasks associated with this skill group or precision queue. For these agents, the state is reported as *Active*.
Work Ready	The agent is performing wrap-up work for a call or task in this skill group or precision queue. If the agent is handling a voice call, the agent enters Ready state when wrap-up is complete. If the agent is handling a nonvoice task, the agent may enter Not Active or Not Ready state when wrap-up is complete.	The agent is performing wrap-up work for a task associated with this skill group or precision queue. The agent is not in the Active state for a task associated with this skill group.
Work Not Ready	The agent is performing wrap-up work for a call in this skill group or precision queue. The agent enters Not Ready state when wrap-up is complete. This state is not used for agents signed into Enterprise Chat and Email skill groups or precision queues. This state is used during failover for agents signed into skill groups or precision queues for third-party multichannel applications that use the Task Routing APIs.	This state is used during failover for agents signed in to skill groups or precision queues for third-party multichannel applications that use the Task Routing APIs.
Paused or Hold	For agents who handle nonvoice tasks, the state is reported as *Paused*. For agents who handle voice tasks, the state is reported as *Hold*. For agents handling Outbound Option calls, the Hold state indicates that the agent has been reserved for a call because the Outbound Dialer puts the agent on hold while connecting the call.	The agent is *Paused* for a task associated with this skill group or precision queue.

State in Skill Group or Precision Queue	Description for single-session MRDs	Description for multisession MRDs
Reserved	The agent has been offered a call or task associated with the skill group or precision queue.

For voice calls, agents are Reserved when their phones are ringing.

Agents handling Outbound Option calls are never placed in Reserved state; the Outbound Option Dialer puts the agent on hold when reserving the agent for a call. | The agent is not in Active, Work Ready, or Paused state in this skill group or precision queue. The agent has been offered one or more tasks associated with this skill group or precision queue. |
| Busy Other

Busy Other is a state in which the agent handling calls is assigned to other skill groups during the interval.

For example, an agent could be talking on an inbound call in one skill group while simultaneously logged on to, and ready to accept calls from, other skill groups.

The agent can be active (talking on or handling calls) in only one skill group at a time. Therefore, while active in one skill group, for the other skill group the agent is considered to be in the Busy Other state. | The agent is Active, Work Ready, Reserved, or on Hold/Paused in another skill group or precision queue in the same MRD. | The agent is not in Active, Work Ready, Reserved, or Paused state for a task associated with this skill group or precision queue. The agent is in Active, Work Ready, Reserved, or Paused in another skill group or precision queue in the same MRD. |
| Not Active or Ready | The agent is not working on a task or call associated with this skill group or precision queue. | Same as single-session MRD. |

State in Skill Group or Precision Queue	Description for single-session MRDs	Description for multisession MRDs
Interrupted	The agent has been interrupted by a task from another MRD. If an agent is Interrupted in one skill group or precision queue, the agent is Interrupted in all skill groups or precision queues within the same MRD. Voice calls cannot be interrupted. This state is not used for agents signed in to Enterprise Chat and Email skill groups or precision queues. This state is used for agents signed in to skill groups or precision queues for third-party multichannel applications that use the Task Routing APIs, if the agents are configured to accept interrupts.	Same as single-session MRD
Not Ready	The agent is not available to be assigned a call or task. If an agent is Not Ready in one skill group or precision queue, the agent is Not Ready in all skill groups or precision queues within the same MRD.	Same as single-session MRD

How Agent States Are Calculated in Reports

Agent states are presented in many reports as percentages.

Table 2: Calculations for Agent State Percentages

Table.Field	Calculation
%Active	Agent_Skill_Group_ Interval.TalkInTime + Agent_Skill_Group_ Interval.TalkOutTime + Agent_Skill_Group_ Interval.TalkOtherTime + Agent_Skill_Group_ Interval.TalkAutoOutTime + Agent_Skill_Group_ Interval.TalkPreviewTime + Agent_Skill_Group_ Interval.TalkReserveTime / Agent_Skill_Group__ Interval.LoggedOnTime
%BusyOther	Agent_Skill_Group _Interval.BusyOtherTime / Agent_Skill_Group_ Interval.LoggedOnTime
%Hold	Agent_Skill_Group_ Interval. HoldTime / Agent_Interval.LoggedOnTime
%NotActive	Historical: Agent_Skill_Group_ Interval.AvailTime / Agent_Interval.LoggedOnTime Real Time: Agent_Skill_Group_Real_Time.Avail / Skill_Group_Real_Time.LoggedOn
%Reserved	Agent_Skill_Group _ Interval.ReservedStateTime / Agent_Skill_Group _Interval.LoggedOnTime

Table.Field	Calculation
%WrapUp	(Agent_Skill_Group _Interval.WorkReadyTime + Agent_Skill_Group_ Interval.WorkNotReadyTime) / Agent_Skill_Group_Interval.LoggedOnTime)
%Not Ready	Agent_Skill_Group _Interval.NotReadyTime / Agent_Skill_Group_Interval.LoggedOnTime

Agent States, Skill Groups, and Precision Queues

Agents can belong to multiple skill groups or precision queues in a Media Routing Domain (MRD). When an agent is handling a task that was routed to a skill group or precision queue, the agent is Active in that skill group or precision queue.

- For Unified CCE routed calls or transferred Unified CCE routed calls that use the dialed number, the active skill group or precision queue is the skill group or precision queue to which the task was queued.

- For direct incoming calls or transferred routed calls on the ACD, the active skill group is the first skill group defined for the agent or the skill group assigned by the ACD.

- For direct incoming calls or transferred routed calls that do not use the dialed number, the active skill group is the default or first skill group defined for the agent.

- For new outgoing calls (AgentOutCalls or InternalCalls) or transferred outbound calls, the active skill group is either the ACD-picked skill group or the first skill group defined for the agent.

Agents can be configured to work on more than one task at a time, such as multiple chat sessions. When reporting on these agents, gather state information from both the Available in MRD and Agent State columns.

The agents' state in the active skill group or precision queue determines the state in the other skill groups or precision queues in the MRD, as follows:

- If the agent is Not Ready in one skill group or precision queue in the MRD, the agent is Not Ready in all skill groups or precision queues in the MRD.

- If the agent is Active, Work Ready, Reserved, or Hold/Paused in one skill group or precision queue in the MRD, the agent state is Busy Other for all other skill groups or precision queues in the MRD.

Agent State and Task State Relationship

Agent state times are reported on interval boundaries regardless of whether the call or task is finished. Call and task state times are reported only when the task ends. The call or task ends when wrap-up is complete.

The following figure illustrates the correlation between agent state and call state for a voice call. The agent reserve time includes network time and offer/ring time. Network time is the time it took the call to arrive at the agent's phone or desktop. Offering/ring time is the amount of time that the call rang on the agent's phone or waited on the agent's desktop.

Figure 1: Agent State and Task State Relationship
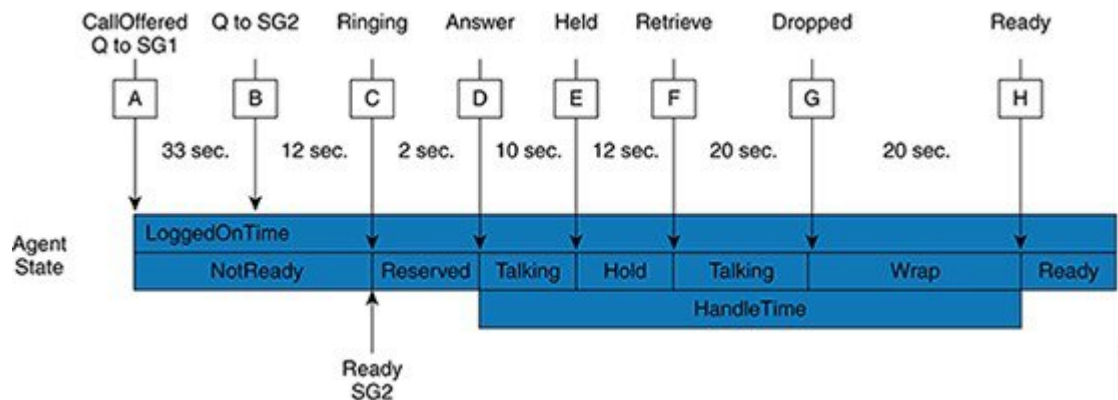
1. Call Arrives and queues against SG1 (A) after 33 seconds the call also queues for agents in SG2 (B).
2. The call remains queued to SG1 and SG2 for an additional 12 seconds, until it is routed to an agent who goes ready in SG2 (C).
3. Call rings on the agent's phone (C) and is then answered by the agent (D), who talks on the call for 10 seconds before putting the call on hold (E).
4. After 12 seconds, the agent retrieves the call (F) and talks for another 20 seconds.
5. At (G) the call is dropped which results in the agent going into Wrap state to perform after after-call work for 20 seconds at which time the agent becomes ready (H).

6. If the interval boundary ends when the call is ringing on the agent's phone, the reserved time for the agent includes the network time and part of the ring time. At the next interval, the remaining ring time is reported in the reserved time of the agent. However, the call's time does not appear on a report until wrap-up has been completed on the call.

Agent State Hierarchy for Multisession MRDs

An agent's state on a task determines the agent's state in a skill group or precision queue. The agent's state in a skill group or precision queue determines agent's state in the MRD. For example, if an agent is Active on a task for Skill Group A, then the agent state is Active in Skill Group A. The agent's state is Active for the MRD to which Skill Group A belongs.

Agents working on nonvoice tasks, such as chat, can be configured to handle more than one concurrent task in the same MRD. These agents may be routed multiple tasks in a single skill group or precision queue, or across several skill groups or precision queues in the same MRD. For these cases, a state hierarchy determines the agent's overall state in the skill group or precision queue and in the MRD.
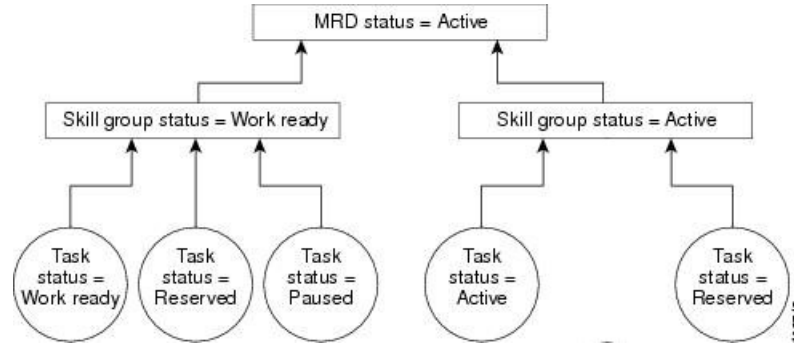
The agent state hierarchy is:

1. Interrupted

2. Active

3. Work Ready

4. Paused

5. Reserved

6. Busy Other (for different skill groups in the same MRD)

7. Not Active

Consider the following diagram:

Figure 2: Agent State Hierarchy in Skill Group and MRD

In the previous diagram, an agent belongs to two skill groups in a chat MRD. The agent is configured to work on up to five concurrent chat tasks in each MRD.

In the first skill group, the agent is working on three tasks, and the agent's states for those tasks are Work Ready, Reserved, and Paused. The agent's overall state in the skill group is Work Ready, because Work Ready is higher than Reserved and Paused in the state hierarchy.

In the second skill group, the agent is working on two tasks, and the agent's states for those tasks are Active and Reserved. The agent's overall state in the skill group is Active, because Active is higher than Reserved in the state hierarchy.

The agent's state in the MRD is Active, because Active is higher than Work Ready in the hierarchy.

Reports That Show Agent States

The following reports that show information on agent state:

- Unified IC Agent Team State Counts Real Time

- Unified IC Agent Real Time All Fields

- Unified IC Agent Team Real Time All Fields

Agent Logout Reason Codes

Agent logout reason codes are defined in the agent desktop software and appear in historical reports as their numeric equivalent, with no text code. For example, if reason code 1 equals "end of shift" and the agent selects that reason for logging out, the report displays "1".

In addition to the codes configured at the desktop, some codes are generated automatically when the software logs out the agent. The following table describes these built-in logout reason codes, which are available for Unified CCE.

Note Check your *ACD Supplement Guide* to make sure that agent logout reasons codes are supported for your ACD.

Table 3: Agent Logout Reason Codes

Built-in Logout Reason Code	Description
-1	The agent reinitialized due to peripheral restart.
-2	The PG reset the agent, normally due to a PG failure.
-3	An administrator modified the agent's extension while the agent was logged in.
999	The agent was logged out from Finesse by a supervisor.
50002	A CTI component failed, causing the agent to be logged out. This could be due to closing the agent desktop application, heartbeat time-out, a CTI server failure, or a CTI server client failure (such as Finesse).
50003	The agent was logged out because the ACD reported the agent's device as out of service.
50004	The agent was logged out due to agent inactivity as configured in agent desk settings.
50020	The agent was logged out when the agent's skill group assignment dynamically changed.
50030	The agent was logged out when the agent's skill group assignment dynamically changed on the Administration & DataServer.
50040	The mobile agent was logged out because the call failed.
50042	The mobile agent was logged out because the phone line disconnected when using nailed connection mode.

Agent Not Ready Reason Codes

There are reports that show the codes agents select when entering Not Ready state, that calculate the percentage of time spent in the Not Ready state, and that show specific Not Ready reasons based on the time range you specify.

These reports help you identify whether agents are taking the appropriate number of breaks and whether their breaks are the appropriate length.

Some reports display both the text of the reason code (if configured) *and* the corresponding number. For example, if an agent enters Not Ready state and selects "Break" as the reason code, and if you have configured text for this code, reports display "Break [1]". Other reports display the numeric Not Ready reason code only.

In addition to Not Ready reason codes that you define, there are built-in Not Ready reason codes for situations in which the software automatically makes the agent Not Ready. The following table describes these built-in Not Ready reason codes.

There are no predefined Not Ready Reason codes for Unified CCE.

Table 4: Built-In Not Ready Reason Codes

Built-in Not Ready Reason Code	Description
-1	Agent reinitialized (used if peripheral restarts).
-2	PG reset the agent, normally due to a PG failure.
-3	An administrator modified the agent's extension while the agent was logged in.
999	A Finesse supervisor changed the agent state.
50001	The CTI client disconnected, logging out the agent. **Note** 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. This could be due to closing the agent desktop application, heartbeat time-out, a CTI server failure, or a CTI server client failure (such as Finesse).
50003	Agent was logged out because 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 deployment where the Multi-line Agent Control is enabled in the peripheral, and the Multi-line Agent Behavior is configured to impact agent state, the Agent is set to Not Ready with this code while talking on a call on the Non-ACD line.
50010	The agent did not receive multiple consecutive routed calls. The system makes the agent Not Ready automatically so that additional calls are not routed to the agent. By default, the number of consecutive calls missed before the agent is made Not Ready is 2.
50020	Agent was logged out when the agent's skill group dynamically changed on the Administration & Data Server.
50030	Agent was logged out because the agent was logged in to a dynamic device target that is using the same dialed number (DN) as the PG static device target. **Note** Device targets are deprecated. Use Agent Target Rules instead.
50040	Mobile agent was logged out because the call failed.
50041	Mobile agent state changed to Not Ready because the call failed when the mobile agent's phone line rang busy.
50042	Mobile agent was logged out because the phone line disconnected while using nailed connection mode.
50041	The agent's state was changed to Not Ready because the agent's phone line rang busy and a call failed.
32767	The agent's state was changed to Not Ready because the agent did not answer a call and the call was redirected to a different agent or skill group.

Built-in Not Ready Reason Code	Description
Supervisor Not Ready	This code is reserved.
Supervisor Logout	This code is reserved.

By default, built-in Not Ready reason codes do not have associated textual reason codes. They appear as numbers in reports. To see a textual code for these Not Ready reason codes, enter the built-in Not Ready reason code into the Reason Code list tool with the related text. For example, you can label the 32767 Not Ready reason code "Redirection on No Answer."

Note

- To report on Not Ready reason codes, ensure that the reporting of agent event detail data is enabled on the PG with the Unified CM peripheral. This is enabled by default.

- For Unified CCE deployments, check your *ACD Supplement Guide* to make sure that Not Ready Reasons codes are supported for your ACD.

Reports That Show Agent Not Ready Reason Codes

The following reports contain information on Not Ready codes and the time spent as Not Ready:

- Unified IC (Intelligence Center) Agent Skill Group Real Time All Fields

- Unified IC Agent Not Ready Detail

Agent Reporting for Outbound Option Campaigns

For agent reporting per campaign, Outbound Option provides report templates that accurately represent the outbound agent activity for a contact center, including information grouped by skill group.

Agent Task Handling

Agents can receive and place many different types of tasks. There are reports that show you what kind of tasks agents are handling and how well they are handling them. For example, there are reports that display statistics for calls placed, received, transferred, and conferenced, and there are reports that indicate how many calls were rerouted when the agent failed to answer the call.

Types of Tasks

Tasks can be internal or external, incoming, or outgoing.

- **Internal tasks** are calls made to an agent from another person on the same ACD (for Unified CCE) or on the same cluster (for Unified CCE).

- **External tasks** are calls that are placed off-switch, go through a voice gateway or Media Routing PG, or tasks that are routed to an agent from a person on a different ACD or cluster. For example, calls from the call center to customers are considered external.

- **Incoming tasks** are tasks that an agent receives, typically originating from an ingress gateway. Multichannel tasks are always incoming.

- **Outgoing tasks** are calls that an agent places. For example, if a customer calls an agent, the call is incoming for the agent. If an agent calls a supervisor, the call is outgoing for the agent.

For voice calls only, agents can place consultative calls and engage in conference calls.

Agents can transfer voice calls and nonvoice tasks that were routed to Unified CCE from third-party multichannel applications that use the Task Routing APIs. Agents cannot transfer non-voice Enterprise Chat and Email tasks.

The following table describes the tasks that an agent can receive and place and how those tasks are reported.

Table 5: Types of Tasks

Type of task	Description	Reported As
Incoming direct/internal	Incoming Direct Tasks are tasks that come directly to the agent's extension. These calls can be either internal (agent or device on same ACD) or within the network from another switch. Examples of this call type include calls that another agent directly transfers without going through a script and calls that result from agent-to-agent calling. Data for these calls are stored in the InternalCallsRcvd fields of the Agent_Skill_Group_Interval historical database table.	Internal In
Outgoing external	Agents start these calls from their extension. Calls are placed off-switch or pass through a voice gateway. Outgoing External Tasks are always voice tasks. Consultative, conference out, and transfer out calls count as outgoing external calls if you place them off-switch or to remote agent extensions at another site. Agent-to-Agent dialing is outgoing external for the agent initiating the call if the call has to be placed off-switch to get to the destination agent. Data for these calls are stored in the AgentOutCalls fields of the Agent_Skill_Group_Interval historical database table.	External Out Tasks

Type of task	Description	Reported As
Outgoing internal	Agents start these calls from their extension to another extension within the ACD or to another ACD within the network. Outgoing Internal Tasks are always voice tasks. Consultative, conference out, and transfer out calls are counted as outgoing internal calls if they are placed to another device. The device could be another agent line or any other extensions to the VRU. Agent-to-Agent calls are outgoing internal for the agent initiating the call if the destination agent is on the same ACD as the source agent. Data for these calls are stored in the InternalCalls fields of the Agent_Skill_Group_Interval historical database table.	Internal Out Tasks
Unified CCE/ACD calls	All calls that Unified CCE or the ACD routes to the agent. Data for these calls are stored in the CallsHandled fields of the Agent_Skill_Group_Interval historical database table. **Note** The **Handled** field includes all ACD calls and Unified CCE calls, including calls that are transferred and conferenced, consultative calls, and Outbound Option calls routed to the agent. **Handled** provides a high-level view of routed tasks. Other report columns such as Transfer In and Conf Out provide more details about how the task was handled. More information about Outbound Option results are available in Outbound Historical and Outbound Real Time reports.	Handled
Transferred in	Calls transferred to an agent from another agent. Calls that are blind transferred by one agent to CVP for re-routing **are** counted in this column for the agent who receives the rerouted call. **Note** Calls that are transferred to IP-IVR or other vendor IVRs for rerouting are **not** included in this column for the agent who receives the rerouted calls. Those calls appear as new incoming calls. Non-voice tasks from third-party multichannel applications that are blind transferred are also counted in this column for the agent who receives the rerouted task. Data for these calls are stored in the TransferredIn fields of the Agent_Skill_Group_Interval historical database table.	Transfer In

Type of task	Description	Reported As
Transferred out	Calls that are transferred from an agent. An agent can transfer both incoming and outgoing calls. Nonvoice tasks from third-party multichannel applications that are transferred from an agent are also counted in this column. Data for these calls are stored in the TransferredOut fields of the Agent_Skill_Group_Interval historical database table.	Transfer Out
Consultative	Calls in which an agent consulted with another agent or supervisor while having another call on hold. Data for these calls are stored in the ConsultativeCalls fields of the Agent_Skill_Group_Interval historical database table.	Cons Out
Conference in	Incoming calls that are conferenced. Data for these calls are stored in the ConferencedInCalls fields of the Agent_Skill_Group_Interval historical database table. **Note** For blind conferences, this field is updated when another agent answers the call that was blind conferenced to an IVR. Calls that are transferred to IP-IVR or other vendor IVRs for rerouting are **not** included in this column for the agent who receives the rerouted calls. Those calls appear as new incoming calls.	Conf In
Conference out	Outgoing calls that are conferenced. Data for these calls are stored in the ConferencedOutCalls fields of the Agent_Skill_Group_Interval historical database table.	Conf Out

Task Times

For each type of task that an agent can place, the amount of time that the agent spent working on that task is recorded in the Agent_Skill_Group_Interval database table, as follows:

- Unified CCE Packaged CCE–routed tasks and ACD–routed tasks - The time for these tasks begins when the agent answers the task, and ends when the agent completes wrap up. The time is stored in the HandledCallsTime field.

- Incoming direct tasks - The time for these tasks begins when the agent answers the task, and ends when the task disconnects. The time is stored in the InternalCallsRcvdTime field.

- External outgoing tasks - The time for these tasks begins when the agent starts the task, and ends when the task disconnects. The time is stored in the AgentOutCallsTime field.

- Internal outgoing tasks- The time for these tasks begins when the agent starts the task, and ends when the task disconnects. The time is stored in the InternalCallsTime field.

- Transferred-in tasks - The time for these tasks begins when the agent answers the transferred task, and ends when the task disconnects. The time is stored in the TransferredInCallsTime field.

- Transferred-out tasks - The time for these tasks begins when the agent activates the transfer button, and ends when the transfer is complete. The time is stored in the TransferredOutCallsTime field.

- Consultative tasks - The time for these tasks begins when the agent activates the transfer button, and ends when the target agent answers and the held task is restored (drop consultative call) or consult party drops. The time is stored in the ConsultativeCallsTime field.

- Conferenced-in tasks - The time for these tasks begins when the agent answers the task, and ends when the task disconnects. The time is stored in the ConferenceInCallsTime field.

- Conferenced-out tasks - The time for these tasks begins when the agent activates the conference button, and ends when the agent disconnects from the conference call and the supervisor drops out of the call. The time is stored in the ConferenceOutCallsTime field.

You might notice overlapping data in your reports for the amount of time for different types of calls. Overlapping data happens because incoming tasks, such as ACD routed tasks and calls directly to an agent, can be Transferred In and Conferenced In. Both incoming calls and outgoing calls placed by agents can be Transferred Out and Conferenced Out. The total time for the incoming or outgoing call includes transfer and conference time.

Note   Agents can transfer and conference incoming calls both in and out. However, they can transfer and conference outgoing calls out only. This difference means that if an agent transfers an outgoing task to another agent, it is still considered an outgoing task.

Reports That Show Agent Task Handling

The Unified IC Agent Historical All Fields report contains information on Not Ready codes and the time spent as Not Ready.

Agent Utilization: Full-Time Equivalents and Percent Utilization

Because agents can work on multiple media and in multiple skill groups, they typically do not spend all of their time handling tasks for a single skill group. Determining staffing needs based on agents whose time is divided among skill groups and media can be difficult.

Report templates provide two types of statistics that give you a improved view of how agents are being utilized and how many full-time agents would be required to handle the amount of work performed during an interval for a particular skill group.

These statistics are:

- % Utilization (percent utilization)

- FTE (full-time equivalent)

Percent utilization (% Utilization in reports) shows you how well agents are being utilized within a skill group. This metric is computed in reports by dividing the total time agents spend handling calls in a skill group by the total time agents were ready to handle tasks. To calculate the time that an agent was ready, the system subtracts the Not Ready time from the total time that agents were logged on. For example, if the agent

spent 20 minutes of the log on duration handling calls and was available to handle calls for 40 minutes, the percent utilization is 50%.

The **full-time equivalent** (FTE in reports) is the number of full-time agents that would be required to perform the work done during that interval for a skill group. To calculate the FTE, the system divides the total time that work was performed by the total time in the interval. For example, if agents spent a total of 3 hours handling tasks during a 30-minute interval, the FTE for task handling during the interval is 3 hours / 0.5 hours, which equals 6 full-time persons. This means that if all agents handled tasks full-time, the work could have been done by 6 agents.

Note If you select a report interval that is less than 8 hours, the resulting value will be lower than expected.

Reports That Show Percent Utilization and FTE Metrics

The following reports contain operational information on percent utilization and FTE:

- Enterprise Skill Group Historical All Fields

- Peripheral Skill Group Historical All Fields Report

- Peripheral Skill Group Real Time All Fields Report

- Precision Queue Real Time All Fields

- Precision Queue Interval All Fields

Reports That Show Percent Utilization and FTE Metrics