Cisco Unified Contact Center Express Report Developer Guide, Release 10.0(1)

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Preface

Change history

This table lists and links to changes made to this guide and gives the dates those changes were made. Earliest changes appear in the bottom rows.

Change	Date
Initial release of the document	December 12, 2013

About this guide

The *Cisco Unified Contact Center Express Report Developer Guide* describes how database records are written for various call, chat and email scenarios in Cisco Unified Contact Center Express (Unified CCX). It describes how to create custom reports on a standalone Cisco Unified Intelligence Center.

Audience

This document is intended for Unified CCX users who use standalone Unified Intelligence Center to create custom reports.

Related Documents

Document or resource	Link
Cisco Unified Contact Center Express Documentation Guide	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_documentation_roadmaps_list.html
Cisco.com site for Unified CCX documentation	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd_products_support_series_home.html
Online help files for each report	Available when you generate the report
Comparison of Cisco Agent Desktop or Cisco Supervisor Desktop with Finesse desktops	http://www.cisco.com/en/US/partner/products/ps11324/prod_white_papers_list.html
Troubleshooting tips for Unified CCX	http://docwiki.cisco.com/wiki/Troubleshooting_Tips_for_Unified_CCX_10.0
Cisco.com site for Unified Intelligence Center documentation	http://www.cisco.com/en/US/products/ps9755/tsd_products_support_series_home.html
Cisco.com site for Cisco Finesse documentation	http://www.cisco.com/en/US/products/ps11324/tsd_products_support_series_home.html

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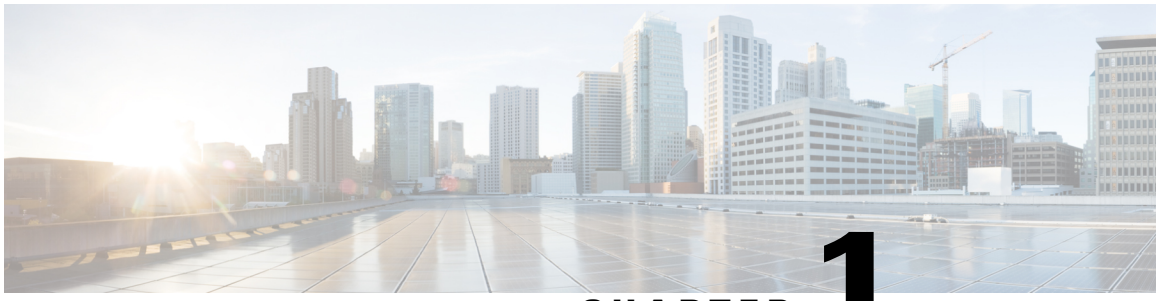


CHAPTER 1

Introduction

Overview

Cisco Unified Intelligence Center is a web-based reporting application that provides Historical and Live Data reports. You can perform the following functions:

- Create custom queries to obtain specific data.
- Allow different groups of people to view specific data based on their function.
- Customize the visual presentation of the reports.
- Customize the data that is presented in the reports.

Common terms

Data source

Data source defines the sources that contain data for the report. Unified Intelligence Center supports two types of data sources: IBM Informix and Java Message Service (JMS). Data sources are preconfigured for you.

Note Additional data sources are not supported.

Report definition

Each report has a report definition that represents how data is retrieved from the data source for that report template. In addition, a report definition contains the dataset that is obtained. This includes the fields, filters, formulas, refresh rate, and key criteria field for the report.

Reports

Reports show data returned by Report Definitions. This data is extracted by database queries.

Stock report

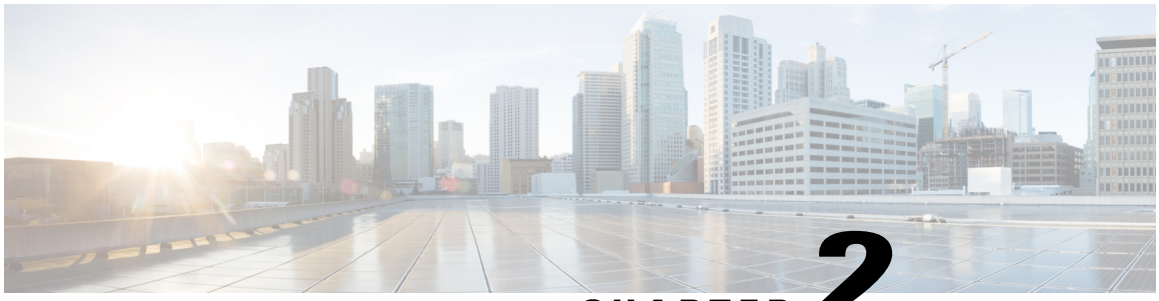
Report that is pre-bundled in Unified Intelligence Center.

Report views

A report can be presented in multiple formats like a grid, chart, or a graph. Each view can have its own set of fields. A single report can have multiple views.

Report help

You can attach a help page specifically for your report.



CHAPTER 2

Create Custom Reports

Overview

You *cannot* create new reports with the Unified Intelligence Center (Standard license) that is embedded with Unified CCX. To create new custom Historical reports, you need to install a standalone Unified Intelligence Center Not For Resale (NFR) kit with premium license. The version of the standalone Unified Intelligence Center should be the same or older than the Unified Intelligence Center that is embedded in Unified CCX.

To install standalone NFR Unified Intelligence Center, see the *Installation and Upgrade Guide for Cisco Unified Intelligence Center*, located at:

http://www.cisco.com/en/US/products/ps9755/prod_installation_guides_list.html .

Attention You *cannot* create custom Live Data reports.

How to Create Custom Reports

The following table describes the task flow to create a new Historical report:

Table 1: Task flow to create custom reports

Sequence	Task	Where performed	Reference
1	Create Unified CCX datasource	Unified CCX	SeeCreate Unified CCX Data Source, on page 4.

Sequence	Task	Where performed	Reference
2	Create custom stored procedure	Unified CCX	See Create Custom Stored Procedure, on page 5.
3	Create report definition	Standalone Unified Intelligence Center	See the "Create or edit report definitions" section of the *Cisco Unified Intelligence Center Report Customization Guide, Release 10.0(1)*, located at: http://www.cisco.com/en/US/products/ps9755/products_user_guide_list.html .
4	Export custom report	Standalone Unified Intelligence Center	See the "Export reports, report definitions, and categories" section of the *Cisco Unified Intelligence Center Report Customization Guide, Release 10.0(1)*, located at: http://www.cisco.com/en/US/products/ps9755/products_user_guide_list.html .
5	Import custom report to Unified CCX	Unified Intelligence Center embedded in Unified CCX	See the "Import Reports" section of the *Cisco Unified Contact Center Express Report User Guide*, located at: http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_user_guide_list.html.
6	Set permissions to the new custom report	Unified Intelligence Center embedded in Unified CCX	See the "Manage user permissions" section of the *Cisco Unified CCX Administration Guide*, located at: http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html.

Create Unified CCX Data Source

Create a Unified CCX data source on the standalone Unified Intelligence Center server that points to the Unified CCX server.

Note Do not create a data source in the Unified Intelligence Center (Standard license) that is bundled with Unified CCX. This scenario is not recommended and not supported.

Procedure

Step 1 Set the password for the Historical Reporting User.

a) Log in to Cisco Unified Contact Center Express Administration using the Unified CCX username and password.
b) Select **Tools** > **Password Management**.
c) In the Historical Reporting User field, set the password, and click **Save**.

Step 2 Record settings of the existing Unified CCX data source.

a) Log in to Unified Intelligence Center on the Unified CCX server.
b) In the left pane, click **Data Sources**.
The **Data Sources** page opens in a separate tab in the right pane.
c) Select the Unified CCX data source and click **Edit**.
d) Record the settings in the page so that you can refer to this data later.

Step 3 Configure a data source on the standalone NFR Unified Intelligence Center server to point to the Unified CCX server.

a) Log in to the standalone Unified Intelligence Center using credentials that has report designer permissions.
b) In the left pane, click **Data Sources**.
c) Click **Create** to create a new data source.
d) Set the parameters as per the settings you recorded in **Step 2d**.
Note The database user name should be uccxhruser and the password should match the password you set in **Step 1c**.
e) Click **Test Connection** and verify the settings.
Tip If an error is prompted, verify that the settings are correct and try again.

Create Custom Stored Procedure

The Unified CCX database schema details are described in the *Database Schema Guide for Cisco Unified CCX and Cisco Unified IP IVR*, located at:

http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_user_guide_list.html.

Procedure

Step 1 Connect to the db_cra database using the uccxhruser username and password.

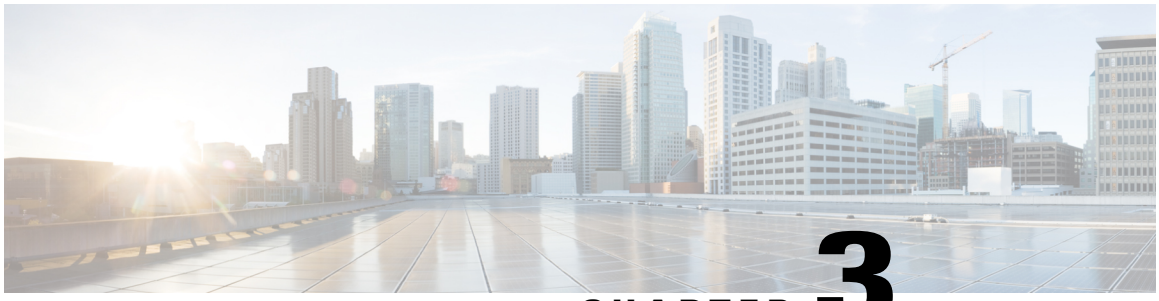
Step 2 Create a stored procedure using third-party tools such as SQuirrel SQL Client and AGS Server Studio.

Step 3 Assign execution privileges for the stored procedure to uccxHrUserRole using the following command:

Example:
grant execute on<*your procedure name*> to 'uccxHrUserRole';

What to Do Next

See the task flow table in How to Create Custom Reports, on page 3.



CHAPTER 3

Interpret Database Records

Overview

The following abbreviations are used for database records:

- ACDR—AgentConnectionDetail record in the AgentConnectionDetail table.
- ASDR—AgentStateDetail record in the AgentStateDetail table.
- CCDR—ContactCallDetail record in the ContactCallDetail table.
- CQDR—ContactQueueDetail record in the ContactQueueDetail table.
- CRDR—ContactRoutingDetail record in the ContactRoutingDetail table.
- EEMCEDR—EEMContactEmailDetail record in the EEMContactEmailDetail table.
- EEMQADR—EEMQueueAgentDetail record in the EEMQueueAgentDetail table.
- EEMEASD—EEMEmailAgentStateDetail record in the EMEmailAgentStateDetail table.
- TACDR—TextAgentConnectionDetail record in the TextAgentConnectionDetail table.
- TCDR—TextContactDetail records in the TextContactDetail table.
- TASDR—TextAgentStateDetail records in the TextAgentStateDetail table.
- TCQDR—TextContactQueueDetail record in the TextContactQueueDetail table.

Call Scenarios

The following assumptions are made for the call scenarios:

- Auto-work is disabled for incoming Automatic Call Distribution (ACD) calls.
- Auto-available is enabled for agents.

Call-Related Detail Records Flow

The following table presents an example of the general flow of detail records for incoming ACD calls.

Assumptions

- Contact Service Queue (CSQ) is configured for auto-work.
- Agent is configured for auto-available.

Table 2: General flow of detail records for incoming ACD calls

Call activity	Detail record activity
Call reaches the CTI port	Allocates session. Begins CCDR in memory.
Call executes the first Select Resource step	Begins CRDR and CQDR in memory.
System selects agent and rings the phone	Begins ACDR in memory, writes ASDR to change state to Reserved.
Agent answers	Writes ASDR (Talking).
Call disconnects	Writes CRDR, CQDRs, ASDR (Work).
Agent leaves Work state	Writes ACDR, CCDR, ASDR (Ready).

If the agent does not enter Work state after the call, the system writes the ACDR and the ASDR (Ready) when the call disconnects. If the agent is not configured to be auto-available, the ASDR relates to the Not Ready state.

Basic ACD Call Queues for One CSQ

1. Call reaches a Unified CCX route point, executes a script, and queues for one CSQ.
2. System allocates agent A for the call and rings agent A's phone, and agent A answers the call.

Table 3: Basic ACD call queues for one CSQ—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
ACDR1	100	0	1	Agent A and original call information.

Table 4: Basic ACD call queues for one CSQ—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is selected for call.
ASDR2	5 (Talking)	Agent A answers call.
ASDR3	3 (Ready)	Call ends.

Basic ACD Call Queues for Two CSQs

1. Call reaches a Unified CCX route point, executes a script, and queues for two CSQs.
2. System allocates agent A for the call and rings agent A's phone, and agent A answers the call.

Table 5: Basic ACD call queues for two CSQs—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Overall queue information for CSQ1 (targetType = 0, targetID = ID of CSQ1).
CQDR2	100	0	1	Overall queue information for CSQ2 (targetType = 0, targetID = ID of CSQ2).

Record	Session ID	Session sequence number	qIndex	Remarks
ACDR1	100	0	1	Agent A and original call information.

Basic ACD Call Wrap-up

1. Call reaches a Unified CCX route point, executes a script, and queues for one CSQ.
2. System allocates agent A for the call and rings agent A's phone, and agent A answers the call.
3. After completing the call, agent A goes to Work state, and chooses a wrap-up code.

Table 6: Basic ACD call wrap-up—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
ACDR1	100	0	1	Agent A and original call information with wrap-up code.

Table 7: Basic ACD call wrap-up—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is selected for call.
ASDR2	5 (Talking)	Agent A answers call.
ASDR3	6 (Work)	Call ends.
ASDR4	3 (Ready)	Agent A goes to Ready state.

Basic Agent-Based Routing Call

1. Call reaches a Unified CCX route point, executes a script, and selects agent A.

2 System allocates agent A for the call and rings agent A's phone, and agent A answers the call.

Table 8: Basic agent-based routing call—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is selected for call.
ASDR2	5 (Talking)	Agent A answers call.
ASDR3	3 (Ready)	Call ends.

Table 9: Basic agent-based routing call—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed information for the routing attempt (targetType = 1; indicates agent-based routing).
ACDR1	100	0	1	Agent A and original call information.

Table 10: Basic agent-based routing call—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is selected for call.
ASDR2	5 (Talking)	Agent A answers call.
ASDR3	3 (Ready)	Call ends.

Transfer to Route Point

1 Call reaches a Unified CCX route point, executes a script, and queues for one CSQ.

2 System allocates agent A for the call and rings agent A's phone, and agent A answers the call.

3 Agent A transfers the call to a Unified CCX route point.

4 Call executes a script, queues for one or more CSQs, and connects to agent B.

5 Server begins a new session and CCDR as soon as agent A starts the consult call.

6 Server writes the CCDR for the consult call either when agent A completes the transfer or when agent A or the script terminates that call.

Table 11: Transfer to route point—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	Transfer field will be 1.
CRDR1	100	0	1	Overall queue information for the first segment of the call (before the transfer).
ACDR1	100	0	1	Agent A and original call information.
CQDR1	100	0	1	Detailed queue information for the CSQ that is selected by the first route point's script.
CCDR2	101	0	—	Consult call from agent A to route point.
CCDR3	100	1	—	Second leg of original call to new route point.
CRDR3	100	1	—	Overall queue information for the second segment of the call (after the transfer).
CQDR3	100	1	1	Queue information for second leg of call.
ACDR3	100	1	1	Agent B and original call information.

Conference to Agent

1 Call reaches a Unified CCX route point, executes a script, and queues for one CSQ.

2 System allocates agent A for the call and rings agent A's phone, and agent A answers the call.

3 Agent A calls another logged-in agent (agent B), and conferences agent B into the original call.

4 Server begins a new session and CCDR as soon as agent A starts the consult call.

5 Server writes the CCDR for the consult call either when agent A completes the conference or when agent A or agent B terminates the consult call.

Note

1 The server does not create a new CCDR or CRDR after the conference is completed.

2 An asterisk (*) indicates that another record has the same name, but the record is for a different agent.

Table 12: Conference to agent—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	Conference field will be 1.
CRDR1	100	0	1	Overall queue information.
ACDR1	100	0	1	Agent A and original call information.
CQDR1	100	0	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
CCDR2	101	0	—	Consult call from agent A to agent B.
ACDR1*	100	0	0	Agent B and original call information.

Workflow Redirect to Route Point

1 Call reaches a Unified CCX route point.

2 Workflow for that route point redirects the call to a second route point.

Table 13: Workflow redirect to route point—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	Caller to first route point (redirect field will be 1).
CCDR2	100	1	Caller to second route point.

ACD Call Unanswered

1 Call reaches a Unified CCX route point, executes a script, and queues for one or more CSQs.

2 System allocates agent A for the call and rings agent A's phone, but agent A does not answer the call within the timeout specified in the Select Resource or Connect step.

3 Call goes into queue and is presented to agent B, who answers the call.

Note An asterisk (*) indicates that another record has the same name, but the record is for a different agent.

Table 14: ACD call unanswered—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed queue information for the CSQ selected by the route point script.
ACDR1	100	0	1	Agent A information, ring time > 0 and talk time = 0.
ACDR1*	100	0	1	Agent B information, talk time > 0.

Table 15: ACD call unanswered—Agent state-change records

Record	Agent	State	Reason Code	Remarks
ASDR1	A	4 (Reserved)	—	Agent A is selected for call.
ASDR2	A	2 (Not Ready)	32763	Server retrieves call from the agent's phone.
ASDR3	B	4 (Reserved)	—	Agent B is selected for call.
ASDR4	B	5 (Talking)	—	Agent B answers call.

Agent-to-Agent Non-ACD Call

1 Agent A goes off-hook and calls agent B.

2 Agent B answers, the two agents talk for a while, and agent B hangs up.

Table 16: Agent-to-agent non-ACD call—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	Agent A to agent B information.

Table 17: Agent-to-agent non ACD call—Agent state-change records

Record	Agent	State	Reason Code	Remarks
ASDR1	A	2 (Not Ready)	32762	Agent A goes off-hook.
ASDR2	B	2 (Not Ready)	32761	Call rings at agent B's phone.
ASDR3	B	3 (Ready)	—	Agent B hangs up.
ASDR4	A	3 (Ready)	—	—

Agent-to-Agent Non-ACD Call Transfer

1. Agent A receives a non-ACD call from an unknown party.
2. Agent A places a consult call to agent B, agent B answers the call, and agent A completes the transfer.
3. Agent B then hangs up.

Table 18: Agent-to-agent non ACD call transfer—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	Unknown party to agent A information (transfer field will be 1).
CCDR2	101	0	Agent A to agent B information.
CCDR3	100	1	Unknown party to agent B information.

Table 19: Agent-to-agent non ACD call transfer—Agent state-change records

Record	Agent	State	Reason Code	Remarks
ASDR1	A	2 (Not Ready)	32761	First call rings at agent A's phone.
ASDR2	B	2 (Not Ready)	32761	Consult call rings at agent B's phone.
ASDR3	A	3 (Ready)	—	Agent A completes transfer.
ASDR4	B	3 (Ready)	—	Agent B hangs up.

Agent-to-Agent Non-ACD Call Conference

1. Agent A receives a non-ACD call from an unknown party.
2. Agent A places a consult call to agent B, and agent B answers the call.
3. Agent A establishes a conference; agent A, agent B, and the caller are in conversation.
4. Agent A hangs up.
5. Agent B hangs up.

Table 20: Agent-to-agent non-ACD call conference—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	Unknown party to agent A information (conference field will be 1).
CCDR2	101	0	Agent A to agent B information.

Table 21: Agent-to agent Non-ACD call conference—Agent state-change records

Record	Agent	State	Reason Code	Remarks
ASDR1	A	2 (Not Ready)	32761	First call rings at agent A's phone.
ASDR2	B	2 (Not Ready)	32761	Consult call rings at agent B's phone.
ASDR3	A	3 (Ready)	—	Agent A hangs up.
ASDR4	B	3 (Ready)	—	Agent B hangs up.

ACD Call Blind Transfer

1 Agent A is connected and talking to an incoming ACD call.

2 Agent A puts the call on hold and places a consult transfer to agent B.

3 Agent A completes the transfer and then agent B answers.

Table 22: ACD call blind transfer—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	Original call and agent A information (transfer field will be 1).
CRDR1	100	0	1	Overall queue information.
ACDR1	100	0	1	Agent A information.
CQDR1	100	0	1	Queue information.
CCDR2	101	0	—	Agent A and agent B information.
CCDR3	100	1	—	Original call and agent B information.
ACDR3	100	1	0	Agent B information.

Table 23: ACD call blind transfer—Agent state-change records

Record	Agent	Reason	Remarks
ASDR1	A	4 (Reserved)	Agent A is selected for original call.
ASDR2	A	5 (Talking)	Agent A answers.
ASDR3	B	4 (Reserved)	Agent A calls agent B, agent B's phone rings.
ASDR4	A	3 (Ready)	Agent A competes the transfer.
ASDR5	B	5 (Talking)	Agent B answers.
ASDR6	B	3 (Ready)	Caller hangs up.

Agent Places Consult Call and Resumes Call

1. Agent A is connected to an incoming ACD call.
2. Agent A presses the **Transfer** button on the phone to initiate a consult call with agent B.
3. Agent A receives a dial tone, drops the consult call, and resumes the incoming call.

Table 24: Agent places consult call then resumes call—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	Original call and agent A information.
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
ACDR1	100	0	1	Includes talk time both before and after the canceled consult call, and contains hold time for the duration of the canceled consult call.
CCDR2	101	0	—	Agent A information, no called-party information.

Table 25: Agent places consult call then resumes call—Agent state-change records

Record	Agent	Reason	Remarks
ASDR1	A	4 (Reserved)	Agent A is selected for original call.
ASDR2	A	5 (Talking)	Agent A answers.
ASDR3	A	3 (Ready)	Caller hangs up.

Agent Consults Agent and Resumes Call

1. Agent A is connected to an incoming ACD call.
2. Agent A puts that call on hold and initiates a consult transfer to agent B.
3. Agent B answers, talks to agent A for some time, and then hangs up without agent A completing the transfer.
4. Agent A resumes the original call.

Table 26: Agent consults agent then resumes call—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	Original call and agent A information.
CRDR1	100	0	1	Overall queue information.
CQDR1	100	0	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
CCDR2	101	0	—	Agent A to agent B.
ACDR1	100	0	1	Includes talk time both before and after the consult call, and contains hold time for the duration of the canceled consult call.

Table 27: Agent consults agent then resumes Call—Agent state-change records

Record	Agent	Reason	Remarks
ASDR1	A	4 (Reserved)	Agent A is selected for original call.
ASDR2	A	5 (Talking)	Agent A answers.
ASDR3	B	4 (Reserved)	Agent A calls agent B, agent B's phone rings.
ASDR4	B	5 (Talking)	Agent B answers.
ASDR5	B	3 (Ready)	Agent B disconnects from consult call.
ASDR6	A	3 (Ready)	Caller disconnects original call.

Basic Outbound Call Accepted

1. Call is presented to agent A, and agent A accepts the call.
2. System places the call from agent A to the customer.

Table 28: Basic outbound call accepted—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	—
ACDR1	100	0	Call result is 1 (voice).

Table 29: Basic outbound call accepted—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is presented with outbound call.
ASDR2	5 (Talking)	Agent A accepts call.
ASDR3	3 (Ready)	Call ends.

Basic Outbound Call Rejected and Later Accepted

1. Call is presented to agent A, and agent A rejects the call.
2. Call is then presented to agent B, and agent B accepts the call.
3. System places the call from agent B to the customer.

Table 30: Basic outbound call rejected and later accepted—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	—
ACDR1	100	0	Call result is 9 (reject).
ACDR2	100	0	Call result is 1 (voice).

Table 31: Basic outbound call rejected and later accepted—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is presented with outbound call.

Record	Reason	Remarks
ASDR1	3 (Ready)	Agent A rejects call.
ASDR1	4 (Reserved)	Agent B is presented with outbound call.
ASDR2	5 (Talking)	Agent B accepts call.
ASDR3	3 (Ready)	Call ends.

Basic Outbound Call Accepted and Transferred to Another Agent

1. Call is presented to agent A, and agent A accepts the call.
2. System places the call from agent A to the customer.
3. Agent A transfers the call to agent B.

Table 32: Basic outbound call accepted and transferred to another agent—Call-related detail records

Record	Session ID	Session sequence number	Remarks
CCDR1	100	0	—
ACDR1	100	0	Call result is 1 (voice).
CCDR2	200	0	Consult call from agent A to agent B information.
CCDR3	100	1	Outbound call at agent B information.
ACDR2	100	1	Call result is 20 (transfer).

Table 33: Basic outbound call accepted and transferred to another agent—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is presented with outbound call.
ASDR2	5 (Talking)	Agent A accepts call.
ASDR3	3 (Ready)	Agent A transfers call to agent B.
ASDR1	4 (Reserved)	Agent B is presented with outbound call.
ASDR2	5 (Talking)	Agent B on outbound call.

Record	Reason	Remarks
ASDR3	3 (Ready)	Call ends.

Basic Outbound Call Accepted and Transferred to Route Point

1. Call is presented to agent A, and agent A accepts the call.
2. System places the call from agent A to the customer.
3. Agent A transfers the call to a route point.
4. Call reaches a Unified CCX route point, executes a script, and queues for one CSQ.
5. System allocates agent B for the call and rings agent B's phone, and agent B answers the call.

Table 34: Basic outbound call accepted and transferred to route point—Call-related detail records

Record	Session ID	Session sequence number	qIndex	Remarks
CCDR1	100	0	—	—
ACDR1	100	0	—	Call result is 1 (voice).
CCDR2	200	0	—	Consult call from agent A to route point information.
CCDR3	100	1	—	Outbound call is queued.
CRDR1	100	1	1	Overall queue information.
CQDR1	100	1	1	Detailed queue information for CSQ1 (targetType = 0; indicates CSQ-based routing).
ACDR1	100	1	1	Agent B and original call information.

Table 35: Basic outbound call accepted and transferred to route point—Agent state-change records

Record	Reason	Remarks
ASDR1	4 (Reserved)	Agent A is presented with outbound call.
ASDR2	5 (Talking)	Agent A accepts call.
ASDR3	3 (Ready)	Agent A transfers call to route point.
ASDR1	4 (Reserved)	Agent B is selected for call.

Record	Reason	Remarks
ASDR2	5 (Talking)	Agent B answers call.
ASDR3	3 (Ready)	Call ends.

Chat Scenarios

Chat-Related Detail Records Flow

The following table presents an example of the general flow of detail records for incoming chat contacts.

Table 36: General flow of detail records for incoming chat contacts

Chat activity	Detail record activity
Contact reaches Unified CCX	Begins TCDR in memory.
Contact is queued to a CSQ	—
Agent is allocated to the contact	Writes ASDR (Busy).
Agent answers and contact is dequeued from CSQ	Collects TCQDR in memory.
Contact disconnects	Collects TACDR, TCCDR. Writes TCCDR, TCDR, TCQDR, TACDR.
Agent leaves Work state	Writes ASDR (Ready).

If the contact drops before agent is connected, TCQDR is collected and written when the contact disconnects.

Chat Contact Unanswered

1. Contact reaches Unified CCX and queues for one or more CSQs.
2. System allocates agent A for the contact and offers the contact to the agent, but agent A does not answer the contact within the configured timeout period.
3. Call goes into queue and is presented to agent B, who answers the call.

Table 37: Chat contact unanswered scenario—Chat-related detail records

Record	Remarks
Contact is queued to a CSQ	—
Agent is allocated to the contact	Writes ASDR (Busy).
Agent does not accept the contact	Writes ASDR (Not Ready).
Contact is requeued to CSQ	Collects TACDR1.
Contact is allocated to a different agent	Writes ASDR (Busy).
Agent answers and contact is dequeued from the CSQ	Collects TCQDR in memory.
Contact disconnects	Collects TACDR2, TCCDE. Writes TACDR1, TACDR2, TCDR, TCQDR, TCCDR.
Agent leaves Work state	Writes ASDR (Ready).

Email Scenarios

Email-Related Detail Records Flow

The following table presents an example of the general flow of detail records for incoming email messages.

Note Login and Logout states are considered to be complete immediately, so the start time and stop time are the same.

Table 38: General flow of detail records for incoming Interactive Call Distribution (ICD) email

Email activity	Detail Record Activity
Agent logs in	Creates EEMEASDR and updates start time and end time for Login state. Creates EEMEASDR and updates start time for Email Not Ready state.
Agent goes to Email Ready state	Updates EEMEASDR to add end time for Email Not Ready state. Creates EEMEASDR and updates start time for Email Ready state.

Email activity	Detail Record Activity
Email reaches CSQ inbox	Creates EEMCEDR for the email message. Creates EEMQADR for the email message, and the CSQ that the message is initially routed to.
System selects agent and assigns the email message	Updates EEMQADR to add assigned agent and time. Updates EEMEASDR to add end time for Email Ready state. Creates EEMEASDR and updates start time for Email Processing state.
Agent sends response	Updates EEMQADR to include final disposition of the email. Updates EEMCEDR to include final disposition of the email. Updates EEMEASDR to add end time for Email Processing state. Creates EEMEASDR and updates start time for Email Ready state.
Agent goes to Email Not Ready state	Updates EEMEASDR to add end time for Email Ready state. Creates EEMEASDR and updates start time for Email Not Ready state.
Agent logs out	Updates EEMEASDR to add end time for Email Not Ready state. Creates EEMEASDR and updates start time and end time for Logout state.

Basic Incoming Email with a Response Sent

1. Email message arrives in the inbox that is associated with a CSQ, and is then moved and assigned to that CSQ.
2. System allocates agent A for the email message, the message appears on agent A's desktop, and agent A sends a response.

Table 39: Basic incoming email—Email-related detail records

Record	CED ID	QAD sequence number	Remarks
EEMCEDR1	100	—	Email information including incoming and final disposition information.
EEMQADR1	100	210	Email information relating to the one appearance in the queue.

Table 40: Basic incoming email—Email-related state-change records

Record	Reason	Remarks
EEMEASDR1	4 (Email Processing)	Agent receives email message.
EEMEASDR2	3 (Email Ready)	Agent sent response.

Email Requeued

1. Email message arrives in the inbox that is associated with a CSQ, and is then moved and assigned to that CSQ.
2. System allocates agent A for the email message, the message appears on agent A's desktop, and agent A goes to Email Not Ready state and requeues the email message.
3. Email message is then allocated to agent B, and agent B sends a response.

Table 41: Email re-queued—Email-related detail records

Record	CED ID	QAD sequence number	Remarks
EEMCEDR1	100	—	Email information including incoming and final disposition information. FinalDispositionTypeFK will be 5 for sent email messages.
EEMQADR1	100	210	Email information relating to the first appearance in the queue. EndTypeFK will be 8 (Requeued).
EEMQADR2	100	211	Email information relating to the first appearance in the queue. ReceivedReasonFK will be 8 for requeued and EndTypeFK will be 5 for sent email messages.

Table 42: Email re-queued—Email-related state-change records

Record	Agent	Reason	Remarks
EEMEASDR1	A	4 (Email Processing)	Agent A receives the email message.
EEMEASDR2	A	2 (Email Not Ready)	Agent A selects Not Ready state before requeuing email message.
EEMEASDR3	B	4 (Email Processing)	Agent B receives email message.
EEMEASDR4	B	3 (Email Ready)	Agent B sent response.

Email Transferred to Different CSQ

1. Email message arrives in the inbox that is associated with CSQ1, and is moved and assigned to that CSQ.
2. System allocates agent A for the email message, the message appears on agent A's desktop, and agent A decides it does not belong to that CSQ and transfers it to CSQ2.
3. Email message is then allocated to agent B, and agent B deletes the email message.

Table 43: Email transferred to different CSQ—Email-related detail records

Record	CED ID	QAD sequence number	CSQ ID	Remarks
EEMCEDR1	100	—	2	Email information including incoming and final disposition information. FinalDispositionTypeFK will be 6 for Deleted email messages. The CSQ ID will be initially 1, but will be updated to 2 when transferred.
EEMQADR1	100	210	1	Email information relating to the first appearance in the queue. EndTypeFK will be 7 (Transferred).
EEMQADR2	100	211	2	Email information relating to the first appearance in the queue. ReceivedReasonFK will be 7 for transferred and EndTypeFK will be 6 for deleted.

Table 44: Email transferred to different CSQ—email-related state change records

Record	Agent	Reason	Remarks
EEMEASDR1	A	4 (Email Processing)	Agent A receives email message.
EEMEASDR2	A	2 (Email Ready)	Agent A receives email message.
EEMEASDR3	B	4 (Email Processing)	Agent B receives email message.
EEMEASDR4	B	3 (Email Ready)	Agent B receives email message.