



## All message types organized by class and type

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[Table 1: Message types listed by message class and by message TypeName, on page 2](#) lists the message types by message class and by message type name. See the index for an alphabetical listing.

A “Solicit” message is a client message that makes a request of the server (Unified CCX). A “Solicited” message is a message Unified CCX sends to the client in response to a “solicit” message. For example: an OPEN\_REQ and an OPEN\_CONF message are a solicit and a solicited message respectively. An “unsolicited” message is one sent to the client that the client did not request; For example a SYSTEM\_EVENT message.

**Table 1: Message types listed by message class and by message TypeName**

Message class	MessageTypeName	Type ID #	Sent by	Solicit or Solicited	Purpose
Session messages	<a href="#">OPEN_REQ, on page 17</a>	3	Client	Yes	Requests the start of a communications session with Unified CCX.
	<a href="#">OPEN_CONF, on page 19</a>	4	Unified CCX	Yes	Confirms to the client the starting of a session.
	<a href="#">HEARTBEAT_REQ, on page 21</a>	5	Client	Yes	Sends a HEARTBEAT_REQ message to Unified CCX whenever no messages have been sent for the heartbeat interval or sooner for the purpose of detecting and handling transmission failures.
	<a href="#">HEARTBEAT_CONF, on page 21</a>	6	Unified CCX	Yes	Confirms that the HEARTBEAT_REQ message has been received.
	<a href="#">SYSTEM_EVENT, on page 21</a>	31	Unified CCX	No	Indicates the Unified CCX server status or the agent's device status changes.
	<a href="#">CLOSE_REQ, on page 22</a>	7	Client	Yes	Requests the termination of a session from a client.
	<a href="#">CLOSE_CONF, on page 23</a>	8	Unified CCX	Yes	Confirms the termination of a session.
Error messages	<a href="#">FAILURE_CONF, on page 27</a>	1	Unified CCX	Yes	Confirms a failure to process a client's request
	<a href="#">FAILURE_EVENT, on page 28</a>	2	Unified CCX	No	Notifies the client, without it having been requested, of a failure or an error.

Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
Configuration messages	<a href="#">CONFIG_REQUEST_KEY_EVENT, on page 29</a>	230	Client	Yes	Requests the current configuration keys for various types of configuration data.
	<a href="#">CONFIG_KEY_EVENT, on page 29</a>	231	Unified CCX	Yes	Provides the client with the requested configuration keys at the time of the client's key request.
	<a href="#">CONFIG_REQUEST_EVENT, on page 30</a>	232	Client	Yes	Requests a complete set of configuration data.
	<a href="#">CONFIG_BEGIN_EVENT, on page 31</a>	233	Unified CCX	Yes (for initial upload) No (for updates)	Signals the beginning of a consistent set of configuration data.
	<a href="#">CONFIG_END_EVENT, on page 32</a>	234	Unified CCX	Yes (for initial upload) No (for updates)	Signals the end of a set of consistent configuration data.
	<a href="#">CONFIG_APPLICATION_EVENT, on page 34</a>	235	Unified CCX	Yes (for initial upload) No (for updates)	Contains application configuration data.
	<a href="#">CONFIG_CSQ_EVENT, on page 33</a>	236	Unified CCX	Yes (for initial upload) No (for updates)	Contains CSQ configuration data.
	<a href="#">CONFIG_AGENT_EVENT, on page 36</a>	237	Unified CCX	Yes (for initial upload) No (for updates)	Contains agent configuration data.
	<a href="#">CONFIG_DEVICE_EVENT, on page 37</a>	238	Unified CCX	Yes (for initial upload) No (for updates)	Contains route point, agent extension, CTI port, or call control group configuration data.
	<a href="#">TEAM_CONFIG_REQ, on page 40</a>	242	Client	Yes	Requests agent team configuration data.

Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
	<a href="#">TEAM_CONFIG_EVENT</a> , on page 39	243	Unified CCX	Yes (for initial upload) No (for updates)	Contains team configuration data.
	<a href="#">TEAM_CONFIG_CONF</a> , on page 41	244	Unified CCX	Yes	Confirms the end of initial agent team configuration data.
Agent-State Messages	<a href="#">AGENT_STATE_EVENT</a> , on page 42	30	Unified CCX	No	Notifies clients that an agent state has changed.
	<a href="#">QUERY_AGENT_STATE_REQ</a> , on page 44	36	Client	Yes	Queries the current state of an agent.
	<a href="#">QUERY_AGENT_STATE_CONF</a> , on page 45	37	Unified CCX	Yes	Provides the client with the agent state data that was requested.
	<a href="#">SET_AGENT_STATE_REQ</a> , on page 46	38	Client	Yes	Requests a change in the current state of an agent.
	<a href="#">SET_AGENT_STATE_CONF</a> , on page 47	39	Unified CCX	Yes	Confirms that Unified CCX has successfully processed the SET_AGENT_STATE_REQ message.

Message class	MessageTypeName	Type ID #	Sent by	Solicit or Solicited	Purpose
Call-Event Messages	<a href="#">BEGIN_CALL_EVENT</a> , on page 49	23	Unified CCX	No	Notifies the client of a new call and provides the initial call context data.
	<a href="#">END_CALL_EVENT</a> , on page 51	24	Unified CCX	No	Notifies the client that the association between a call and its Unified CCX client is dissolved.
	<a href="#">CALL_DATA_UPDATE_EVENT</a> , on page 52	25	Unified CCX	No	Notifies the client of changes to a call's context data and contains only the data that has changed.
	<a href="#">CALL_DELIVERED_EVENT</a> , on page 55	9	Unified CCX	No	Notifies the client that a call has arrived at a device. The call is delivered when the phone rings.
	<a href="#">CALL_ESTABLISHED_EVENT</a> , on page 58	10	Unified CCX	No	Notifies the client that a call has been answered and connected at a device.
	<a href="#">CALL_HELD_EVENT</a> , on page 60	11	Unified CCX	No	Notifies the client that a call has been placed on hold.
	<a href="#">CALL_RETRIEVED_EVENT</a> , on page 61	12	Unified CCX	No	Notifies the client that a call previously placed on hold has been resumed.
	<a href="#">CALL_CLEARED_EVENT</a> , on page 62	13	Unified CCX	No	Notifies the client that a call is terminated, normally when the last device disconnects from the call.
	<a href="#">CALL_CONNECTION_CLEARED_EVENT</a> , on page 63	14	Unified CCX	No	Notifies the client that a party dropped from a call.
	<a href="#">CALL_ORIGINATED_EVENT</a> , on page 64	15	Unified CCX	No	Notifies the client that a call is initiated at a monitored device.
	<a href="#">CALL_FAILED_EVENT</a> , on page 65	16	Unified CCX	No	Notifies the client that a call encountered an error.
	<a href="#">CALL_CONFERENCED_EVENT</a> , on page 66	17	Unified CCX	No	Notifies the client that a call has been joined with other(s) into a conference call.
<a href="#">CALL_TRANSFERRED_EVENT</a> , on page 69	18	Unified CCX	No	Notifies the client that a call has been transferred.	

Message class	MessageTypeName	Type ID #	Sent by	Solicit or Solicited	Purpose
	<a href="#">CALL_DIVERTED_EVENT</a> , on page 72	19	Unified CCX	No	Notifies the client that a call has been moved from one device to another.
	<a href="#">CALL_SERVICE_INITIATED_EVENT</a> , on page 73	20	Unified CCX	No	Notifies the client of an initiation of telecommunications service (dial tone) at a device.
	<a href="#">CALL_QUEUED_EVENT</a> , on page 74	21	Unified CCX	No	Notifies the client that a call has been placed in a queue pending the availability of an agent.
	<a href="#">CALL_DEQUEUED_EVENT</a> , on page 76	86	Unified CCX	No	Notifies the client that a call has been explicitly removed from a queue.
	<a href="#">RTP_STARTED_EVENT (OPTIONAL)</a> , on page 78	116	Unified CCX	No	Notifies the client that an RTP (Real-Time Protocol) voice media stream has been started.
	<a href="#">RTP_STOPPED_EVENT (OPTIONAL)</a> , on page 79	117	Unified CCX	No	Notifies the client that an RTP media stream has been stopped.

Message class	MessageTypeName	Type ID #	Sent by	Solicit or Solicited	Purpose
Client-Control (Call-Control) messages	<a href="#">CONTROL_FAILURE_CONF, on page 82</a>	35	Unified CCX	Yes	Confirms that the previously requested control-service function identified by the given invokeID was unsuccessful.
	<a href="#">ALTERNATE_CALL_REQ, on page 83</a>	40	Client	Yes	Allows a client to request the combined action of placing an active call on hold and then either retrieving a previously held call or answering an alerting call at the same device.
	<a href="#">ALTERNATE_CALL_CONF, on page 84</a>	41	Unified CCX	Yes	Confirms the processing completion of the ALTERNATE_CALL_REQ message.
	<a href="#">ANSWER_CALL_REQ, on page 84</a>	42	Client	Yes	Allows a client to connect to an alerting call at the device which is alerting.
	<a href="#">ANSWER_CALL_CONF, on page 85</a>	43	Unified CCX	Yes	Confirms the processing completion of the ANSWER_CALL_REQ message.
	<a href="#">CLEAR_CALL_REQ, on page 85</a>	44	Client	Yes	Allows a client to release all devices from the specified call.
	<a href="#">CLEAR_CALL_CONF, on page 86</a>	45	Unified CCX	Yes	Confirms the processing completion of the CLEAR_CALL_REQ message.
	<a href="#">CLEAR_CONNECTION_REQ, on page 87</a>	46	Client	Yes	Allows a client to release a specific device connection from the specified call.
	<a href="#">CLEAR_CONNECTION_CONF, on page 87</a>	47	Unified CCX	Yes	Confirms the processing completion of the CLEAR_CONNECTION_REQ message.
	<a href="#">CONFERENCE_CALL_REQ, on page 88</a>	48	Client	Yes	Allows a client to complete a conference call by combining the consult call with the original call
<a href="#">CONFERENCE_CALL_CONF, on page 90</a>	49	Unified CCX	Yes		

Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
					Confirms the processing completion of the CONFERENCE_CALL_REQ message.
	<a href="#">CONSULT_CALL_REQ, on page 91</a>	50	Client	Yes	Allows the client to request the combined action of placing an active call on hold and then making a new call in order to make a conference call or to transfer the call.
	<a href="#">CONSULT_CALL_CONF, on page 93</a>	51	Unified CCX	Yes	Confirms the processing completion of the CONSULT_CALL_REQ message.
	<a href="#">HOLD_CALL_REQ, on page 94</a>	54	Client	Yes	Allows a client to place an existing call connection into the held state.
	<a href="#">HOLD_CALL_CONF, on page 94</a>	55	Unified CCX	Yes	Confirms the processing completion of the HOLD_CALL_REQ message.
	<a href="#">MAKE_CALL_REQ, on page 95</a>	56	Client	Yes	Allows a client to initiate a call.
	<a href="#">MAKE_CALL_CONF, on page 96</a>	57	Unified CCX	Yes	Confirms the processing completion of the MAKE_CALL_REQ message.
	<a href="#">RECONNECT_CALL_REQ, on page 97</a>	60	Client	Yes	Requests the combined action of clearing an active call and then retrieving an existing held call.
	<a href="#">RECONNECT_CALL_CONF, on page 98</a>	61	Unified CCX	Yes	Confirms the processing completion of the RECONNECT_CALL_REQ message.
	<a href="#">RETRIEVE_CALL_REQ, on page 98</a>	62	Client	Yes	Allows a client to retrieve an existing held call.
	<a href="#">RETRIEVE_CALL_CONF, on page 99</a>	63	Unified CCX	Yes	Confirms the processing completion of the RETRIEVE_CALL_REQ message.



Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
	<a href="#">TRANSFER_CALL_REQ</a> , on page 100	64	Client	Yes	Allows a client to complete a transfer that was initiated by a consult.
	<a href="#">TRANSFER_CALL_CONF</a> , on page 102	65	Unified CCX	Yes	Confirms the processing completion of the <a href="#">TRANSFER_CALL_REQ</a> message.
	<a href="#">SEND_DTMF_SIGNAL_REQ</a> , on page 102	91	Client	Yes	Allows a client to have the Unified CCX server transmit a sequence of DTMF tones on behalf of a call party.
	<a href="#">SEND_DTMF_SIGNAL_CONF</a> , on page 103	92	Unified CCX	Yes	Confirms the processing completion of the <a href="#">SEND_DTMF_SIGNAL_REQ</a> message.
	<a href="#">SET_CALL_DATA_REQ</a> , on page 104	26	Client or Unified CCX	Yes	Requests the update of one or more call data.
	<a href="#">SET_CALL_DATA_CONF</a> , on page 106	27	Unified CCX	Yes	Confirms the processing completion of a previous <a href="#">SET_CALL_DATA_REQ</a> message.
	<a href="#">SUPERVISE_CALL_REQ</a> , on page 106	124	Client	Yes	Requests (from a supervisor) a monitoring or barge-in operation.
	<a href="#">SUPERVISE_CALL_CONF</a> , on page 108	125	Unified CCX	Yes	Confirms the processing completion of a previous <a href="#">SUPERVISOR_CALL_REQ</a> message.
	<a href="#">SUPERVISOR_ASSIST_REQ</a> , on page 108	118	Client	Yes	Requests (from an agent) supervisor assistance.
	<a href="#">SUPERVISOR_ASSIST_CONF</a> , on page 109	119	Unified CCX	Yes	Confirms the processing completion of a <a href="#">SUPERVISOR_ASSIST_REQ</a> message.
	<a href="#">SUPERVISOR_ASSIST_EVENT</a> , on page 110	120	Unified CCX	Yes	Notifies the client that a supervisor assist request was sent by a Unified CCX client.
	<a href="#">BAD_CALL_REQ</a> , on page 111	139	Client	Yes	

Message class	MessageTypeName	Type ID #	Sent by	Solicit or Solicited	Purpose
					Allows a client to notify Unified CCX of the bad quality of a call.
	<a href="#">BAD_CALL_CONF</a> , on page 112	140	Unified CCX	Yes	Confirms the processing completion of the BAD_CALL_REQ message.

Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
Miscellaneous messages	<a href="#">QUERY_QUEUE_STATISTICS_REQ</a> , on page 112	223	Client	Yes	Requests the current CSQ call handling statistics.
	<a href="#">QUERY_QUEUE_STATISTICS_CONF</a> , on page 113	224	Unified CCX	Yes	Confirms the processing completion of a previous <a href="#">QUERY_AGENT_QUEUE_STATISTICS_REQ</a> message.
	<a href="#">QUERY_AGENT_QUEUE_STATISTICS_REQ</a> , on page 115	239	Client	Yes	Requests the current agent call handling statistics.
	<a href="#">QUERY_AGENT_QUEUE_STATISTICS_CONF</a> , on page 116	240	Unified CCX	Yes	Confirms the processing completion of a <a href="#">QUERY_AGENT_QUEUE_STATISTICS_CONF</a> message.
	<a href="#">QUERY_DEVICE_INFO_REQ</a> , on page 117	78	Client	Yes	Allows a client to retrieve general information about a specified device.
	<a href="#">QUERY_DEVICE_INFO_CONF</a> , on page 117	79	Unified CCX	Yes	Confirms the processing completion of a <a href="#">QUERY_DEVICE_INFO_REQ</a> message.
	<a href="#">QUERY_SUMMARY_STATISTICS_REQ</a> , on page 118	225	Client	Yes	Requests system summary statistics for Unified CCX. To avoid impacting system performance, clients should not request statistics too frequently.
	<a href="#">QUERY_SUMMARY_STATISTICS_CONF</a> , on page 119	226	Unified CCX	Yes	Confirms the processing completion of a <a href="#">QUERY_SUMMARY_STATISTICS_REQ</a> message.
	<a href="#">SNAPSHOT_CALL_REQ</a> , on page 121	82	Client	Yes	Allows a client to retrieve information on a specified call.
	<a href="#">SNAPSHOT_CALL_CONF</a>	83	Unified CCX	Yes	Confirms the processing completion of a <a href="#">SNAPSHOT_CALL_REQ</a> message.
<a href="#">SNAPSHOT_DEVICE_REQ</a> , on page 124	84	Client	Yes	Allows a client to retrieve information on a specified device.	
		85	Unified CCX	Yes	

Message class	MessageType	Type ID #	Sent by	Solicit or Solicited	Purpose
	SNAPSHOT_DEVICE_CONF, on page 125				Confirms the processing completion of a SNAPSHOT_DEVICE_REQ message.

- [All message types organized by ID number, page 12](#)
- [Session-Management messages, page 17](#)
- [Configuration messages, page 28](#)
- [Agent-State messages, page 41](#)
- [Call-Event messages, page 48](#)
- [Call-Control \(Client-Control\) messages, page 81](#)
- [Miscellaneous messages, page 112](#)

## All message types organized by ID number

Table 2: Message types Numerically listed by ID number , on page 12 lists the message types by ID number. See the index for an alphabetical listing.

**Table 2: Message types Numerically listed by ID number**

MessageTypeID #	MessageType
1	FAILURE_CONF
2	FAILURE_EVENT
3	OPEN_REQ
4	OPEN_CONF
5	HEARTBEAT_REQ
6	HEARTBEAT_CONF
7	CLOSE_REQ
8	CLOSE_CONF
9	CALL_DELIVERED_EVENT
10	CALL_ESTABLISHED_EVENT

MessageTypeID #	MessageTypeName
11	CALL_HELD_EVENT
12	CALL_RETRIEVED_EVENT
13	CALL_CLEARED_EVENT
14	CALL_CONNECTION_CLEARED_EVENT
15	CALL_ORIGINATED_EVENT
16	CALL_FAILED_EVENT
17	CALL_CONFERENCED_EVENT
18	CALL_TRANSFERRED_EVENT
19	CALL_DIVERTED_EVENT
20	CALL_SERVICE_INITIATED_EVENT
21	CALL_QUEUED_EVENT
23	BEGIN_CALL_EVENT
24	END_CALL_EVENT
25	CALL_DATA_UPDATE_EVENT
26	SET_CALL_DATA_REQ
27	SET_CALL_DATA_CONF
30	AGENT_STATE_EVENT
31	SYSTEM_EVENT
35	CONTROL_FAILURE_CONF
36	QUERY_AGENT_STATE_REQ
37	QUERY_AGENT_STATE_CONF
38	SET_AGENT_STATE_REQ
39	SET_AGENT_STATE_CONF
40	ALTERNATE_CALL_REQ

MessageTypeID #	MessageTypeName
41	ALTERNATE_CALL_CONF
42	ANSWER_CALL_REQ
43	ANSWER_CALL_CONF
44	CLEAR_CALL_REQ
45	CLEAR_CALL_CONF
46	CLEAR_CONNECTION_REQ
47	CLEAR_CONNECTION_CONF
48	CONFERENCE_CALL_REQ
49	CONFERENCE_CALL_CONF
50	CONSULT_CALL_REQ
51	CONSULT_CALL_CONF
54	HOLD_CALL_REQ
55	HOLD_CALL_CONF
56	MAKE_CALL_REQ
57	MAKE_CALL_CONF
60	RECONNECT_CALL_REQ
61	RECONNECT_CALL_CONF
62	RETRIEVE_CALL_REQ
63	RETRIEVE_CALL_CONF
64	TRANSFER_CALL_REQ
65	TRANSFER_CALL_CONF
68	reserved
69	reserved
78	QUERY_DEVICE_INFO_REQ

MessageTypeID #	MessageTypeName
79	QUERY_DEVICE_INFO_CONF
82	SNAPSHOT_CALL_REQ
83	SNAPSHOT_CALL_CONF
84	SNAPSHOT_DEVICE_REQ
85	SNAPSHOT_DEVICE_CONF
86	CALL_DEQUEUED_EVENT
91	SEND_DTMF_SIGNAL_REQ
92	SEND_DTMF_SIGNAL_CONF
112	reserved
113	reserved
114	reserved
115	reserved
116	RTP_STARTED_EVENT (OPTIONAL)
117	RTP_STOPPED_EVENT (OPTIONAL)
118	SUPERVISOR_ASSIST_REQ
119	SUPERVISOR_ASSIST_CONF
120	SUPERVISOR_ASSIST_EVENT
121	EMERGENCY_CALL_REQ
122	EMERGENCY_CALL_CONF
123	EMERGENCY_CALL_EVENT
124	SUPERVISE_CALL_REQ
125	SUPERVISE_CALL_CONF
126	reserved
127	reserved

MessageTypeID #	MessageTypeName
128	reserved
134	reserved
139	BAD_CALL_REQ
140	BAD_CALL_CONF
211	reserved
212	reserved
213	reserved
214	reserved
215	reserved
223	QUERY_QUEUE_STATISTICS_REQ
224	QUERY_QUEUE_STATISTICS_CONF
225	QUERY_SUMMARY_STATISTICS_REQ
226	QUERY_SUMMARY_STATISTICS_CONF
230	CONFIG_REQUEST_KEY_EVENT
231	CONFIG_KEY_EVENT
232	CONFIG_REQUEST_EVENT
233	CONFIG_BEGIN_EVENT
234	CONFIG_END_EVENT
235	CONFIG_APPLICATION_EVENT
236	CONFIG_CSQ_EVENT
237	CONFIG_AGENT_EVENT
238	CONFIG_DEVICE_EVENT
239	QUERY_AGENT_QUEUE_STATISTICS_REQ
240	QUERY_AGENT_QUEUE_STATISTICS_CONF



MessageTypeID #	MessageTypeName
242	TEAM_CONFIG_REQ
243	TEAM_CONFIG_EVENT
244	TEAM_CONFIG_CONF

## Session-Management messages

This section covers the following topics:

- [Session initialization maintenance system event and termination messages, on page 17](#)
- [Masks used in the OPEN\\_REQ message, on page 23](#)
- [Failure messages, on page 27](#)

## Session initialization maintenance system event and termination messages

This section includes the following messages:

- [OPEN\\_REQ, on page 17](#)
- [OPEN\\_CONF, on page 19](#)
- [HEARTBEAT\\_REQ, on page 21](#)
- [HEARTBEAT\\_CONF, on page 21](#)
- [SYSTEM\\_EVENT, on page 21](#)
- [CLOSE\\_REQ, on page 22](#)
- [CLOSE\\_CONF, on page 23](#)

### OPEN\_REQ

The OPEN\_REQ and the [OPEN\\_CONF, on page 19](#) messages depict the session initialization message flow. Once a TCP connection has been established, a client attempts to initialize a communications session by sending to Unified CCX an OPEN\_REQ message, defined in this section.

**Note**

The ServiceRequested mask determines if a client is in bridge mode or in agent mode. These two modes are mutually exclusive. Do not set agent-mode fields for a bridge-mode client. See [Two client modes for connecting with Unified CCX](#), for an explanation of agent and bridge modes.

The square bracketed subscript number ending the field names for the data in the floating part of the message descriptions is the FieldDataID for that field. For example AgentID<sub>[194]</sub> means that 194 is the FieldDataID for the AgentID field.

**Table 3: OPEN\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
VersionNumber	The version number of the interface requested by the client. This defines the version of all messages in the message set.	UINT	4
IdleTimeout	The session idle timer, expressed in seconds. If the session is idle (no messages received) for this length of time, Unified CCX resets the TCP connection and awaits the establishment of a new session. This value must be at least 2 times the heartbeat interval but less than 120 seconds.	UINT	4
reserved	Set this field to zero.	UINT	4
ServicesRequested	A bitwise combination of the CTI Services listed in <a href="#">Table 13: CTI service masks</a> , on page 24 that the client is to receive.	UINT	4
CallMsgMask	A bitwise combination of the Unsolicited Call Event Message Masks listed in <a href="#">Table 14: Unsolicited call event message masks</a> , on page 24 that the client is to receive.	UINT	4
AgentStateMask	A bitwise combination of Agent State Masks listed in <a href="#">Table 15: Agent State masks</a> , on page 26 that the client is to receive.	UINT	4
ConfigMsgMask	A bitwise combination of the Configuration Event masks listed in <a href="#">Table 16: Configuration Information masks</a> , on page 27 that the client is to receive.	UINT	4
reserved	Set this field to zero.	UINT	4
reserved	Set this field to zero.	UINT	4
reserved	Set this field to zero.	UINT	4

**Table 4: OPEN\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ClientID (required) <sup>1</sup>	The user ID of the client.	STRING	64
ClientPassword <sub>[2]</sub> (required)	The password of the user identified by clientID. ClientID and ClientPassword are optionally used to authenticate the client making the session open request. This field must be present even if authentication is not being used (they can be of zero length).	UNSPEC	64
ClientSignature <sub>[3]</sub> (optional)	A character string that can be used to identify a client.	STRING	64
AgentExtension <sub>[4]</sub> (required for Agent mode)	The agent's ACD IP phone extension. For Agent mode, at least one of AgentExtension, AgentID, or AgentInstrument must be provided by the client.	STRING	16
AgentInstrument <sub>[6]</sub> (required for Agent mode)	The agent's IP phone number. For Agent mode, at least one of AgentExtension, AgentID, or AgentInstrument must be provided by the client.	STRING	64
AgentID <sub>[194]</sub> (required for Agent mode)	The agent's Unified CCX login.	STRING	32

- <sup>1</sup> **Note** Unified CCX does not use the Client ID and Client Password (they can be of zero length). Even though the fields are required, Unified CCX Computer Telephony Integration ignores them.

## OPEN\_CONF

The OPEN\_CONF message, defined in the following tables, confirms the completion of the processing requested by the OPEN\_REQ message.

**Table 5: OPEN\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Maximum size
InvokeID	The InvokeID from the corresponding OPEN_REQ message.	UINT	4
ServicesGranted	A bitwise combination of the CTI Services listed in <a href="#">CTI service masks, on page 23</a> that the client has been granted. Services granted can be less than those requested.	UINT	4

Fixed part Field name	Value	Data type	Maximum size
reserved	Zero.	UINT	4
reserved	Zero.	UINT	4
reserved	Zero.	TIME	4
Unified CCX Online	The current Unified CCX on-line status when client EVENTS service has been granted. 1: online 0: offline	BOOL	2
reserved	Zero.	USHORT	2
AgentState	One of the values from <a href="#">What is an agent state?</a> representing the current state of the associated agent phone. This field is required for Agent mode.	USHORT	2

**Table 6: OPEN\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentExtension <sub>[4]</sub>	The agent's IP phone extension, when client EVENTS service has been granted and the agent is currently logged into Unified CCX. This field is required for Agent mode.	STRING	16
reserved <sub>[5]</sub>	Ignore this value.	STRING	12
AgentInstrument <sub>[6]</sub>	The agent's IP phone number, when client EVENTS service has been granted and the agent is currently logged into Unified CCX. This field is required for Agent mode.	STRING	64
AgentID <sub>[194]</sub>	The agent's Unified CCX login. This field is required for Agent mode.	STRING	32
NumPeripherals <sub>[228]</sub> (Version 14 and later)	The number of FltPeripheralID and MultilineAgentControl pairs specified in the floating portion of the message. For Unified CCX, this is always 1.	USHORT	2

Floating part Field name	Value	Data type	Maximum size
FltPeripheralID <sub>[208]</sub> (Version 14 and later)	The Peripheral ID for the MultilineAgentControl field. For Unified CCX, this is the peripheral ID given by the OPEN_REQ.	UINT	4
MultilineAgentControl <sub>[224]</sub> (Version 14 and later)	Specifies if multi-line agent control is available on the above peripheral. For Unified CCX, this is always 1.	USHORT	2

## HEARTBEAT\_REQ

The HEARTBEAT\_REQ and the [HEARTBEAT\\_CONF](#), on page 21 messages depict the heartbeat message flow. The following table defines the HEARTBEAT\_REQ message.

**Table 7: HEARTBEAT\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4

## HEARTBEAT\_CONF

On receipt of a HEARTBEAT\_REQ message, Unified CCX immediately responds with a HEARTBEAT\_CONF message, defined in the following table.

**Table 8: HEARTBEAT\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	The InvokeID from the corresponding HEARTBEAT_REQ message.	UINT	4

## SYSTEM\_EVENT

When the Unified CCX status or the agent's device status changes, Unified CCX sends a SYSTEM\_EVENT message, defined in the following table, to all clients to indicate that status (for example, on\_line or off\_line).

**Table 9: SYSTEM\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
CCXStatus	The current operational status of Unified CCX. Any non-zero value is indicative of a component failure or communication outage that prevents normal CTI operations (see also <a href="#">Unified CCX status values</a> ).	UINT	4
CCXTime	The current Unified CCX date and time.	TIME	4
SystemEventID	A value that enumerates the specific system event that occurred. See <a href="#">SystemEventID values</a> for system event ID values.	UINT	4
SystemEventArg1	An argument value that is specific to the system event being reported.	UINT	4
SystemEventArg2	A second argument value that is specific to the system event being reported.	UINT	4
SystemEventArg3	A third argument value that is specific to the system event being reported.	UINT	4
EventDeviceType	Indicates the type of the device ID supplied in the EventDeviceID floating field. See <a href="#">DeviceType values</a> for device ID type values. This is set to DEVID_NONE if no floating field is provided.	USHORT	2

**Table 10: SYSTEM\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
Text <sub>[7]</sub> (optional)	A text message associated with the provided SystemEventID.	STRING	255
EventDeviceID <sub>[206]</sub>	A text value of the device ID if reported. Initially only used by Unified CCX for a SYS_DEVICE_IN_SERVICE, and a SYS_DEVICE_OUT_OF_SERVICE message.	STRING	64

## CLOSE\_REQ

The CLOSE\_REQ message, defined in the following table, requests from Unified CCX a communication session termination.

The CLOSE\_REQ and CLOSE\_CONF messages depict the session termination message flow.

**Table 11: CLOSE\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
Status	A status code indicating the reason for closing the session. See <a href="#">Table 1</a> .	UINT	4

## CLOSE\_CONF

Unified CCX confirms the termination of the communication session with the CLOSE\_CONF message, defined in the following table.

**Table 12: CLOSE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding CLOSE_REQ message.	UINT	4

## Masks used in the OPEN\_REQ message

Unified CCX can provide much more real-time data than the typical client needs. Apply message masks to suppress (mask) the transmission of unneeded data and thereby avoid wasting network bandwidth.

The network impact of the expected number of simultaneously connected clients must be carefully considered before deploying a client application that un.masks a large number of messages.

Within the OPEN\_REQ message, there are four separate mask types for selecting the type of messages wanted and filtering out (masking) unwanted messages:

- [CTI service masks, on page 23](#)
- [Unsolicited call-event message masks, on page 24](#)
- [Agent state masks, on page 26](#)
- [Configuration-Information masks, on page 27](#)

### CTI service masks

CTI service masks specify the CTI services that the client requests.

**Table 13: CTI service masks**

Mask name	Description	Bytes
CTI_SERVICE_CLIENT_EVENTS	Client receives call and agent state change events associated with a specific phone.  This bit is used to indicate the client is in agent mode. This bit cannot be set if CTI_SERVICE_ALL_EVENT is set.	0x00000001
CTI_SERVICE_CALL_DATA_UPDATE	Client can modify call context data.	0x00000002
CTI_SERVICE_CLIENT_CONTROL	Client can control calls and agent states associated with a specific phone.	0x00000004
CTI_SERVICE_ALL_EVENTS	Client receives all call and agent-state change events (associated with any phone).  This is the bit to indicate that the client is in bridge mode. This bit cannot be set when CTI_SERVICE_CLIENT_EVENTS is set.	0x00000010
CTI_SERVICE_SUPERVISOR	Client can perform agent supervisory functions.	0x00000080
CTI_AGENT_STATE_CONTROL_ONLY (Version 12)	Client can perform agent state control functions.	0x00002000
CTI_SERVICE_CONFIG_EVENTS	Requests that this client receive configuration events.	0x00040000

## Unsolicited call-event message masks

The Unsolicited Call-Event Message masks specify unsolicited call-event messages that the client requests.

**Table 14: Unsolicited call event message masks**

Mask name	Description	Value
CALL_DELIVERED_MASK	Set when client wishes to receive CALL_DELIVERED_EVENT messages.	0x00000001
CALL_QUEUED_MASK	Set when client wishes to receive CALL_QUEUED_EVENT messages.	0x00000002
CALL_ESTABLISHED_MASK	Set when client wishes to receive CALL_ESTABLISHED_EVENT messages.	0x00000004



Mask name	Description	Value
CALL_HELD_MASK	Set when client wishes to receive CALL_HELD_EVENT messages.	0x00000008
CALL_RETRIEVED_MASK	Set when client wishes to receive CALL_RETRIEVED_EVENT messages.	0x00000010
CALL_CLEARED_MASK	Set when client wishes to receive CALL_CLEARED_EVENT messages.	0x00000020
CALL_CONNECTION_CLEARED_MASK	Set when client wishes to receive CALL_CONNECTION_CLEARED_EVENT messages.	0x00000040
CALL_ORIGINATED_MASK	Set when client wishes to receive CALL_ORIGINATED_EVENT messages.	0x00000080
CALL_CONFERENCED_MASK	Set when client wishes to receive CALL_CONFERENCED_EVENT messages.	0x00000100
CALL_TRANSFERRED_MASK	Set when client wishes to receive CALL_TRANSFERRED_EVENT.	0x00000200
CALL_DIVERTED_MASK	Set when client wishes to receive CALL_DIVERTED_EVENT messages.	0x00000400
CALL_SERVICE_INITIATED_MASK	Set when client wishes to receive CALL_SERVICE_INITIATED_EVENT messages.	0x00000800
BEGIN_CALL_MASK	Set when client wishes to receive BEGIN_CALL_EVENT messages.	0x00002000
END_CALL_MASK	Set when client wishes to receive END_CALL_EVENT messages.	0x00004000
CALL_DATA_UPDATE_MASK	Set when client wishes to receive CALL_DATA_UPDATE_EVENT messages.	0x00008000
CALL_FAILED_MASK	Set when client wishes to receive CALL_FAILED_EVENT messages.	0x00010000
CALL_DEQUEUED_MASK	Set when client wishes to receive CALL_DEQUEUED_EVENT messages.	0x00040000
RTP_STARTED_MASK	Set when client wishes to receive RTP_STARTED_EVENT messages.	0x00200000
RTP_STOPPED_MASK	Set when client wishes to receive RTP_STOPPED_EVENT messages.	0x00400000

## Agent state masks

The Agent state masks specify the agent state messages that the client requests.

**Table 15: Agent State masks**

Mask name	Description	Value
AGENT_LOGIN_MASK	Set when client wishes to receive "login" AGENT_STATE_EVENT messages.	0x00000001
AGENT_LOGOUT_MASK	Set when client wishes to receive "logout" AGENT_STATE_EVENT messages.	0x00000002
AGENT_NOT_READY_MASK	Set when client wishes to receive "not ready" AGENT_STATE_EVENT messages.	0x00000004
AGENT_AVAILABLE_MASK	Set when client wishes to receive "available" AGENT_STATE_EVENT messages.	0x00000008
AGENT_TALKING_MASK	Set when client wishes to receive "talking" AGENT_STATE_EVENT messages.	0x00000010
AGENT_WORK_MASK	Set when client wishes to receive "work" AGENT_STATE_EVENT messages.	0x00000020
AGENT_TALKING_PENDING_WORK_MASK	Set when client wishes to receive "talking pending work" AGENT_STATE_EVENT messages.	0x00000040
AGENT_TALKING_PENDING_NOT_READY_MASK	Set when client wishes to receive "talking pending not ready" AGENT_STATE_EVENT messages.	0x00000080
AGENT_RESERVED_MASK	Set when client wishes to receive "reserved" AGENT_STATE_EVENT messages.	0x00000100

## Configuration-Information masks

The Configuration-Information masks specify the configuration event messages that the client requests.

**Table 16: Configuration Information masks**

Mask name	Description	Value
CONFIG_AGENT_MASK	Set when client wishes to receive agent configuration update messages.	0x00000001
CONFIG_CSQ_MASK	Set when client wishes to receive skill group configuration update messages.	0x00000002
CONFIG_APPLICATION_MASK	Set when client wishes to receive service configuration update messages.	0x00000004
CONFIG_DEVICE_MASK	Set when client wishes to receive device configuration update messages.	0x00000008

## Failure messages

Unified CCX can indicate errors to the client using the [FAILURE\\_CONF](#), on page 27 and [FAILURE\\_EVENT](#), on page 28 messages.

### FAILURE\_CONF

Unified CCX may use the FAILURE\_CONF message, defined in the following table, in response to any request message from the client. Unified CCX sends the FAILURE\_CONF message in place of the positive confirmation message specific to the request.



**Note**

In a high availability environment, if a connection is made to a standby server, the server can reply with a FAILURE\_CONF indicating error E\_CTI\_SERVER\_NOT\_MASTER.

**Table 17: FAILURE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
Status	A status code indicating the cause of the failure. The possible status codes are defined in <a href="#">Table 1</a> .	UINT	4

**Table 18: FAILURE\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
Text <sub>[7]</sub>	A text description of the reason for the failure reason, if one is known.	STRING	255

## FAILURE\_EVENT

Unified CCX may use the FAILURE\_EVENT message, defined in the following table, to asynchronously indicate a failure or error condition to the client.

**Table 19: FAILURE\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
Status	A status code indicating the cause of the failure. The possible status codes are defined in <a href="#">Table 1</a> .	UINT	4

**Table 20: FAILURE\_EVENT floating patfield name message body format**

Floating PatField name	Value	Data type	Maximum size
Text <sub>[7]</sub>	Text field indication a text description of the failure reason (if any).	STRING	255

## Configuration messages

This section includes the following configuration message definitions:

- [CONFIG\\_REQUEST\\_KEY\\_EVENT](#), on page 29
- [CONFIG\\_KEY\\_EVENT](#), on page 29
- [CONFIG\\_REQUEST\\_EVENT](#), on page 30
- [CONFIG\\_BEGIN\\_EVENT](#), on page 31
- [CONFIG\\_END\\_EVENT](#), on page 32
- [CONFIG\\_CSQ\\_EVENT](#), on page 33
- [CONFIG\\_APPLICATION\\_EVENT](#), on page 34
- [CONFIG\\_AGENT\\_EVENT](#), on page 36

- [CONFIG\\_DEVICE\\_EVENT](#), on page 37
- [TEAM\\_CONFIG\\_EVENT](#), on page 39
- [TEAM\\_CONFIG\\_REQ](#), on page 40
- [TEAM\\_CONFIG\\_CONF](#), on page 41

## CONFIG\_REQUEST\_KEY\_EVENT

The CONFIG\_REQUEST\_KEY\_EVENT can be sent by the client to request the current configuration keys for different types of data.

**Table 21: CONFIG\_REQUEST\_KEY\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved (Only available in CTI Protocol version 11 and later.)	Set this field to 0.	UINT	4

**Table 22: CONFIG\_REQUEST\_KEY\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
reserved <sub>[131]</sub>	Set this field to 0.	UINT	4

## CONFIG\_KEY\_EVENT

The CONFIG\_KEY\_EVENT message is sent by Unified CCX in response to CONFIG\_REQUEST\_KEY\_EVENT message. It contains the Unified CCX keys at the time of the request. Although the data type for the keys is UNSPEC, the keys should be interpreted as 8-byte integer.

Returning any key of all binary 0's tells the client that the specified configuration needs to be uploaded.

**Table 23: CONFIG\_KEY\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
Status	Status value of operation. See <a href="#">Table 25: CONFIG_KEY_EVENT Status Values</a> , on page 30.	UINT	4

**Table 24: CONFIG\_KEY\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ApplicationConfigKey <sub>[177]</sub>	The Unified CCX configuration key of the customer (or all customers) for applications.	UNSPEC (8)	8
CSQConfigKey <sub>[178]</sub>	The Unified CCX configuration key of the customer (or all customers) for CSQs.	UNSPEC (8)	8
AgentConfigKey <sub>[179]</sub>	The Unified CCX configuration key of the customer (or all customers) for agents.	UNSPEC (8)	8
DeviceConfigKey <sub>[180]</sub>	The Unified CCX configuration key of the customer (or all customers) for device information.	UNSPEC (8)	8

**Table 25: CONFIG\_KEY\_EVENT Status Values**

Status Value	Value	Meaning
CONFIG_SUCCESS	0	Successful upload of configuration data.
CONFIG_SERVICE_PROVIDER	1	No data was sent because the configuration service is not requested in the service request of the OPEN_REQ message.
CONFIG_NO_KEY_SUPPORT	2	Unified CCX is unable to provide configuration key support due to an internal error.
CONFIG_UNKNOWN_DATA	3	Invalid reserved <sub>[131]</sub> field.

## CONFIG\_REQUEST\_EVENT

The CONFIG\_REQUEST\_EVENT message may be sent by the client after it receives the CONFIG\_KEY\_EVENT message.

Unified CCX responds by sending a CONFIG\_BEGIN\_EVENT, CONFIG\_xxx records (where xxx refers to the type of configuration records such as CSQ, Application, Agent, or Device), and then a CONFIG\_END block containing all the records for that configuration item. After the client gets this new configuration data, the client should clear the existing configuration and use the new configuration set.

**Table 26: CONFIG\_REQUEST\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
ConfigurationMask	Bit Mask indicating what type of information is requested: 1: Agent Information 2: CSQ Information 4: Application Information 8: Device Information 0: the client is not requesting an initial configuration upload. This is used to tell Unified CCX that it is now permitted to send configuration update messages when the client does not want the initial update. What updates are received depend on the ConfigurationMask. <b>Note</b> The configuration message that can be sent out is also restricted by the configuration mask (CallMsgMask, AgentState Maks, or ConfigMsgMask) value in the OPEN_REQ message.	UINT	4
reserved(Version 11)	Set this value to 0.	UINT	4

**Table 27: CONFIG\_REQUEST\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
reserved <sub>[131]</sub> (required)	Set this value to 0.	UINT	4

## CONFIG\_BEGIN\_EVENT

The CONFIG\_BEGIN\_EVENT signifies the beginning of configuration data from Unified CCX.

**Table 28: CONFIG\_BEGIN\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
ConfigType	1: Initial Configuration 2: Update	USHORT	2

Fixed part Field name	Value	Data type	Byte size
ConfigurationMask	Bit Mask indicating the type of information included: 1: Application Information 2: CSQ Information 4: Agent Information 8: Device Information	UINT	4

**Table 29: CONFIG\_BEGIN\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ApplicationConfigKey <sub>[177]</sub>	The Unified CCX configuration key of the customer (or all customers) for applications (if any).	UNSPEC (8)	8
CSQueueConfigKey <sub>[178]</sub>	The Unified CCX configuration key of the customer (or all customers) for CSQs (if any).	UNSPEC (8)	8
AgentConfigKey <sub>[179]</sub>	The Unified CCX configuration key of the customer (or all customers) for agents (if any).	UNSPEC (8)	8
DeviceConfigKey <sub>[180]</sub>	The Unified CCX configuration key of the customer (or all customers) for device information (if any).	UNSPEC (8)	8

## CONFIG\_END\_EVENT

The CONFIG\_END\_EVENT message is sent by Unified CCX to indicate the end of a successful configuration upload or an error condition. It most likely will follow configuration records preceded by a CONFIG\_BEGIN\_EVENT message or it can be a response to a CONFIG\_REQUEST\_EVENT message indicating either an error or that there is no configuration for the items requested.

**Table 30: CONFIG\_END\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
Status	Indicates the status of the configuration block. See <a href="#">Table 32: CONFIG_END_EVENT status values, on page 33</a> for status values and descriptions.	UINT	4



**Table 31: CONFIG\_END\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
Text <sub>[7]</sub>	Optional Text describing Errors or other information.	STRING	255

**Table 32: CONFIG\_END\_EVENT status values**

Status	Value	Meaning
CONFIG_SUCCESS	0	Successful upload of configuration data.
CONFIG_SERVICE_PROVIDER	1	No data was sent because the configuration service is not requested in the service request of the OPEN_REQ message.
CONFIG_UNKNOWN_DATA	2	An invalid reserved <sub>[131]</sub> field is in the CONFIG_REQUEST_EVENT message.
CONFIG_ERROR	3	An error occurred and an invalid or partial configuration was sent.
CONFIG_EMPTY	4	No configuration data exists on Unified CCX.
CONFIG_PARTIAL	5	Partial configuration data.

## CONFIG\_CSQ\_EVENT

The CONFIG\_CSQ\_EVENT message is sent to indicate a CSQ configuration update.

**Table 33: CONFIG\_CSQ\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
NumRecords	The number of records included in the floating part of this message. The maximum number of records is 10.	USHORT	2

**Table 34: CONFIG\_CSQ\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
RecordType <sub>[183]</sub>	0: Add 1: Change 2: Delete	USHORT	2
reserved <sub>[184]</sub> (Version 11)	Set to 0.	UINT	4
CSQID <sub>[184]</sub>	The Contact Service Queue ID. This ID is used to identify a CSQ internally in Unified CCX.	UINT	4
reserved <sub>[213]</sub> (Version 11)	Set to 0.	UINT	4
reserved <sub>[64]</sub>	Set to 0.	USHORT	2
reserved <sub>[192]</sub>	Set to 0.	UINT	4
AutoWork <sub>[185]</sub>	TRUE if the agent goes into work mode after handling a call from this CSQ. FALSE if not present.	BOOL	4
reserved <sub>[173]</sub>	An empty string (" ").	STRING	16
CSQName <sub>[133]</sub>	Name of the CSQ.	STRING	64
Description <sub>[134]</sub>	An empty string (" ").	STRING	128
MR Domain ID <sub>[216]</sub> (Version 11) (see Table note 1, on page 34)	0= Voice 1= Email (see Table note 2, on page 34).	UINT	4
reserved <sub>[176]</sub>	An empty string (" ").	STRING	255

**Table notes**

- 1 A version number next to a field name in a message type definition indicates that field is used in the CTI protocol beginning with the specified version number.
- 2 "1"=Email will only be available in UCCX 7.0(1) and later. In earlier versions, this field will always be "0".

## CONFIG\_APPLICATION\_EVENT

The CONFIG\_APPLICATION\_EVENT message is sent by Unified CCX to provide information about an Application.

**Table 35: CONFIG\_APPLICATION\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
NumRecords	The number of records contained in the floating part of this message.  The maximum number of records that can be put in the message is 10.	USHORT	2

**Table 36: CONFIG\_APPLICATION\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Max Size
RecordType <sub>[183]</sub>	0: Add 1: Change 2: Delete	USHORT	2
reserved <sub>[208]</sub> (Version 11)	0.	UINT	4
ApplicationID <sub>[184]</sub>	The application ID.	UINT	4
reserved <sub>[213]</sub> (Version 11)	0.	UINT	4
MaxQueued <sub>[129]</sub>	The maximum number of sessions associated with this application.	UINT	4
reserved <sub>[173]</sub> (optional)	An empty string (" ").	STRING	16
PreviousApplicationID <sub>[132]</sub>	If the application ID is changed, this value stores the previous application ID.	UINT	4
ApplicationName <sub>[133]</sub>	Name of the application.	STRING	64
Description <sub>[134]</sub> (optional)	Text description of the application.	STRING	128
reserved <sub>[174]</sub>	0.	UINT	4
reserved <sub>[175]</sub>	0.	UINT	4
reserved <sub>[176]</sub>	An empty string (" ").	STRING	255
reserved <sub>[216]</sub> (Version 11)	0.	UINT	4

## CONFIG\_AGENT\_EVENT

The CONFIG\_AGENT\_EVENT message is sent by Unified CCX to provide information about an agent.


**Note**

The LoginID field is considered unique for all records. Two records sent with matching LoginID's are considered to be the same record.

**Table 37: CONFIG\_AGENT\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
NumRecords	The number of records contained in the floating portion of this message. The maximum number of records that can be put in the message is 10.	USHORT	2

**Table 38: CONFIG\_AGENT\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
RecordType <sub>[183]</sub>	0: Add 1: Change 2: Delete	USHORT	2
reserved <sub>[208]</sub> (Version 11)	0	UINT	4
AgentType <sub>[189]</sub>	1: Agent 2: Supervisor	USHORT	2
LoginID <sub>[190]</sub>	The agent's Unified CCX Login ID.	STRING	64
reserved <sub>[214]</sub> (Version 11)	" "	STRING	64
reserved <sub>[207]</sub> (Version 11)	" "	STRING	32
LastName <sub>[138]</sub>	The agent's last name.	STRING	32
FirstName <sub>[137]</sub>	The agent's first name.	STRING	32
Extension <sub>[173]</sub>	The agent's phone extension number.	STRING	16
Description <sub>[134]</sub>	" "	STRING	128

Floating part Field name	Value	Data type	Maximum size
reserved <sub>[141]</sub>	0	UINT	4
NumCSQ <sub>[191]</sub>	The Number of the CSQ to which this agent belongs. A pair consists of the next two fields with a maximum of 30. For example: If the Number of CSQs for the agent is 2, then four fields follow this one (CSQID1 and Reserved and CSQID2 and Reserved).	USHORT	2
CSQID <sub>[62]</sub>	The ID of the CSQ in which the agent is a member.	UINT	4
reserved <sub>[64]</sub>	0	USHORT	2

## CONFIG\_DEVICE\_EVENT

The CONFIG\_DEVICE\_EVENT message is sent by Unified CCX to provide information about a device's configuration. Unified CCX sends CONFIG\_DEVICE\_EVENT messages for all route points, agents, and CTI ports.

**Table 39: CONFIG\_DEVICE\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
NumRecords	The Number of records included in the floating part of this message.  The maximum Number of records allowed is 10.	USHORT	2

**Table 40: CONFIG\_DEVICE\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
RecordType <sub>[183]</sub>	0: Add1: Change2: Delete	USHORT	2
reserved <sub>[208]</sub> (Version 11)	0	UINT	4

Floating part Field name	Value	Data type	Maximum size
DeviceType [195]	See <a href="#">Table 41: Message floating field data for each type of data, on page 38.</a>	USHORT	2
MaxQueued [129]		UINT	4
DeviceField0 [184]		UINT	4
DeviceField1 [193]		UINT	4
DeviceField2 [11]		STRING	40
reserved [10]	Varies.	STRING	32
DeviceField4 [173]	See <a href="#">Table 41: Message floating field data for each type of data, on page 38.</a>	STRING	16
Description [134]	Text description of the entity.	STRING	128

[Table 41: Message floating field data for each type of data, on page 38](#) specifies the floating data fields in the CONFIG\_DEVICE\_EVENT message according to the device type. For example:

- If the CONFIG\_DEVICE\_EVENT message is for agent data:
  - In that message's DeviceType field, enter 3.
  - In DeviceField0, enter the AgentID.
  - In DeviceField2, enter the AgentLoginID, and so on.
- If the message is for route points:
  - In the DeviceType field, enter 5.
  - In DeviceField1, enter the CallControlGroupID, and so on.

**Table 41: Message floating field data for each type of data**

Message fields	For agent data	For route point data	For CTI port data	For call control group data
DeviceType	3	5	6	7
DeviceField0	AgentRecordID (Unified CCX internal ID for this agent record.)	CallControlGroupID	CallControlGroupID	CallControlGroupID
DeviceField1	Not used	ApplicationID	Not used	Not used

Message fields	For agent data	For route point data	For CTI port data	For call control group data
DeviceField2	LoginID	RoutePoint	CTIPortID	Not used
MaxQueued	Not used	SessionLimit	Not used	CTIPortCount
DeviceField3	Not used	Not used	Not used	Not used
DeviceField4	AgentExtension	Not used	Not used	Not used

## TEAM\_CONFIG\_EVENT

The TEAM\_CONFIG\_EVENT message informs the clients of Unified CCX that there is a change to the agent team configuration. A team may include agents, one primary supervisor, secondary supervisors, and CSQs.

**Table 42: TEAM\_CONFIG\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
TeamID	The team ID.	UINT	4
NumRecords	The number of AgentID, AgentFlag, Recordtype, and MemberType fields present in the floating part of the message, up to a maximum of 64.	USHORT	2
Operation	The type of agent team configuration change to perform. One of the following values: 1: Add Team 2: Remove Team (No optional floating part is present. The client is responsible for removing all team related data for this team). 3: Change Team (includes TeamName change, addition/deletion of team members, addition/deletion of primary supervisors, addition/deletion of secondary supervisors)	USHORT	2
reserved	0	UNSPEC (8)	8

**Table 43: TEAM\_CONFIG\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
TeamName <sub>[204]</sub> (required)	The assigned team name. This field must be the first floating field.	STRING	50
AgentID <sub>[194]</sub> (optional)	The AgentID of an agent or supervisor if the MemberType is agent/supervisor member or the CSQID of a member of the team if the MemberType is CSQ member.	STRING	32
AgentFlags <sub>[87]</sub> (optional)	A set of flags indicating the attributes of the preceding AgentID. Possible values are: 0x0001: Primary Supervisor 0x0002: Temporary Agent 0x0004: Supervisor (0 flag is for regular agent)	USHORT	2
RecordType <sub>[183]</sub> (optional)	The type of agent change. It can have following values: 0: Add 2: Delete	USHORT	2
MemberType <sub>[205]</sub>	The team member type: 1: Agent or Supervisor member 2: CSQ member	USHORT	2

## TEAM\_CONFIG\_REQ

The TEAM\_CONFIG\_REQ message requests team configuration data from Unified CCX. If initial configuration is requested, the initial configuration is sent followed by the TEAM\_CONFIG\_CONF message.

**Table 44: TEAM\_CONFIG\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4



Fixed part Field name	Value	Data type	Byte size
ConfigParam	This parameter indicates if the client wants initial bulk upload and/or a team configuration update. The values are: 0x1: initial configuration requested. 0x2: updates only.	USHORT	2
reserved	Set this value to 0.	UNSPEC	8

## TEAM\_CONFIG\_CONF

The TEAM\_CONFIG\_CONF message is an acknowledgement from Unified CCX to the client that it received the request for team configuration data. This message also indicates to clients that they should expect to receive team configuration updates.

**Table 45: TEAM\_CONFIG\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	The same value as the InvokeID from the corresponding request message.	UINT	4
Status	The response to the TEAM_CONFIG_REQ. message. The values are: 0: Success 1: Unified CCX Internal Error	UINT	4

**Table 46: TEAM\_CONFIG\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
Text <sub>[7]</sub> (optional)	Detailed text describing the Status field value.	STRING	128

## Agent-State messages

This section includes the following message definitions:

- [AGENT\\_STATE\\_EVENT](#), on page 42
- [QUERY\\_AGENT\\_STATE\\_REQ](#), on page 44

- [QUERY\\_AGENT\\_STATE\\_CONF](#), on page 45
- [SET\\_AGENT\\_STATE\\_REQ](#), on page 46
- [SET\\_AGENT\\_STATE\\_CONF](#), on page 47

## AGENT\_STATE\_EVENT

An agent-state change (such as logging on, becoming available to handle incoming calls, and so on) sends to the client an AGENT\_STATE\_EVENT message, defined in the following tables.

**Table 47: AGENT\_STATE\_EVENT fixed part message body format**

Fixed part Field name	Description	Data type	Byte size
reserved	A value of 0.	UINT	4
reserved	A value of 1.	UINT	4
reserved	A value of 0.	UINT	4
reserved	A value of 21.	USHORT	2
CSQState	One of the values representing the current state of the agent (see <a href="#">Table 1</a> ).  If only one event is sent for the agent (Not one for each CSQ to which the agent belongs) this is set to 0.	USHORT	2
StateDuration	The number of seconds since the agent entered this state (typically 0).	UINT	4
CSQID	The Customer Service Queue ID affected by the state change, as known by CCX.	UINT	4
reserved	A value of 0xFFFFFFFF.	UINT	4
reserved	A value of 0.	USHORT	2
AgentState	The value representing the current state of the associated agent (see <a href="#">Table 1</a> ).	USHORT	2
EventReasonCode	A Unified CCX code indicating the reason for the state change. (see <a href="#">Table 1</a> )	USHORT	2
reserved	A value of 1.	INT	4
reserved	A value of 0.	UINT	4

Fixed part Field name	Description	Data type	Byte size
reserved	A value of 0.	USHORT	2
reserved	A value of 0.	UINT	4
reserved	A value of 0.	INT	4
reserved	A value of 1.	INT	4
numCSQs	<p>If information for more than one CSQ is passed, this must be non-zero and indicates the number of records (CSQID, and CSQState, Reserved<sub>[63]</sub>, and Reserved<sub>[64]</sub> fields) present in the floating part of the message.</p> <p>There can be up to 99 records.</p> <p>If more than 99 are required, then another AGENT_STATE_EVENT message must be sent.</p> <p>If there are 0 records in the floating part of the message, then a single record (of CSQID and CSQState) is specified in the fixed part of the message.</p>	USHORT	2

**Table 48: AGENT\_STATE\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
CTIClientSignature <sub>[23]</sub> (optional)	The signature of the client that is associated with this agent.	STRING	64
reserved <sub>[5]</sub>	Ignore this value.	STRING	12
AgentExtension <sub>[4]</sub>	The agent's IP phone extension.	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64
AgentID <sub>[194]</sub> (optional)	The agent's Unified CCX login.	STRING	32
Duration <sub>[150]</sub> (optional)	If present specifies in seconds the anticipated time in the state specified. This is useful for work states to estimate the time before going ready or not ready.	UINT	4
NextAgentState <sub>[123]</sub>	The next agent state (if known).	USHORT	2

Floating part Field name	Value	Data type	Maximum size
CSQID <sub>[62]</sub>	The ID of the CSQ affected by the state change. If a particular CSQ is specified, the state in all other CSQs is implicitly made BUSY_OTHER.	UINT	4
reserved <sub>[63]</sub>	Set this value to 0xFFFFFFFF.	UINT	4
reserved <sub>[64]</sub>	A value of 0.	USHORT	2
CSQState <sub>[65]</sub>	One of the values from Table 1 representing the current state of the associated agent with respect to the CSQ. There can be more than one CSQ field in the message (see numCSQs above).	USHORT	2

## QUERY\_AGENT\_STATE\_REQ

The QUERY\_AGENT\_STATE\_REQ message, defined in the following tables, allows a client to retrieve the current state of an agent at a specified device.

**Table 49: QUERY\_AGENT\_STATE\_REQ field name message body format**

Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 1.	INT	4
reserved	Set this value to 0	INT	4

**Table 50: QUERY\_AGENT\_STATE\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentExtension <sub>[4]</sub>	The agent's IP phone number.	STRING	16
AgentInstrument <sub>[6]</sub>	The agent's IP phone number. At least one of AgentExtension, AgentID, or AgentInstrument must be provided.	STRING	64
AgentID <sub>[194]</sub>	The agent's Unified CCX login ID.	STRING	32

## QUERY\_AGENT\_STATE\_CONF

The QUERY\_AGENT\_STATE\_CONF message, defined in the following tables, is confirmation of the receipt of the QUERY\_AGENT\_STATE\_REQ message.

**Table 51: QUERY\_AGENT\_STATE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
AgentState	One of the values from representing the current state of the associated agent (see <a href="#">Table 1</a> ).	USHORT	2
numCSQs	The count of CSQID, reserved <sub>[63]</sub> , reserved <sub>[64]</sub> , and CSQState as a group in the floating part. The maximum count allowed is 20.	USHORT	2
reserved	This value is set to 1.	INT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	USHORT	2
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4

**Table 52: QUERY\_AGENT\_STATE\_CONF floatingfield name message body format**

FloatingField name	Value	Data type	Maximum size
reserved <sub>[5]</sub> (optional)	Ignore this value.	STRING	12
AgentExtension <sub>[4]</sub> (optional)	The agent's Unified CCX IP phone number, if the agent is logged on.	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number, if the agent is logged on.	STRING	64
AgentID <sub>[194]</sub>	The agent's Unified CCX login.	STRING	32

FloatingField name	Value	Data type	Maximum size
CSQID <sub>[62]</sub>	The ID of the CSQ affected by the state change. If a particular CSQ is specified, the state in all other CSQs is implicitly made BUSY_OTHER.	UINT	4
reserved <sub>[63]</sub>	This value is set to 0.	UINT	4
reserved <sub>[64]</sub>	This value is set to 0.	USHORT	2
CSQState <sub>[65]</sub>	One of the values from <a href="#">Table 1</a> representing the current state of the associated agent with respect to the CSQ identified by CSQID.	USHORT	2
InternalAgentState	One of the values from <a href="#">Table 2</a> representing the agent internal states. All the transitional states the agent goes through are part of agent internal states values.	USHORT	2

## SET\_AGENT\_STATE\_REQ

The SET\_AGENT\_STATE\_REQ message, defined in the following tables, allows a client to change an ACD agent's state.

**Table 53: SET\_AGENT\_STATE\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
AgentState	One of the values from representing the desired state of the associated agent (see <a href="#">Table 1</a> ).	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
EventReasonCode	A Unified CCX code indicating the reason for the agent state change (see <a href="#">Table 1</a> ).	USHORT	2

Fixed part Field name	Value	Data type	Byte size
ForcedFlag	Unified CCX is requested to force this state change regardless of its validity.  Used only with AGENT_STATE_LOGIN or AGENT_STATE_LOGOFF:  0: FALSE  1: TRUE  2: Agent authentication only. No agent state change. Use with AGENT_STATE_LOGIN (Version 12)	UCHAR	1
AgentCapacity[Version 12]	Specifies the agent capacity.  0x1: Outbound feature enabled	UINT	4

**Table 54: SET\_AGENT\_STATE\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentInstrument <sub>[6]</sub> (required)	The agent's IP phone number.	STRING	64
AgentPassword <sub>[49]</sub> (optional)	The password that allows an agent to log into a CSQ. This field is required when AgentState is AGENT_STATE_LOGIN.	STRING	64
AgentID <sub>[194]</sub>	The agent's Unified CCX login ID. This field is required when the AgentState is AGENT_STATE_LOGIN or AGENT_STATE_LOGOFF.	STRING	32

## SET\_AGENT\_STATE\_CONF

The SET\_AGENT\_STATE\_CONF message, defined in the following table, confirms the successful completion of a request for setting the agent state.

**Table 55: SET\_AGENT\_STATE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## Call-Event messages

Call-Event messages are unsolicited messages sent to clients when Unified CCX reports that a call-event has occurred. There are no request or confirmation messages associated with these unsolicited event messages. Every call can be announced to the client with an unsolicited `BEGIN_CALL_EVENT` message, informing the client that it has just been associated with a new call and providing the initial call context data.

Additional call events are then sent to the client as the call is handled, depending upon the type of ACD involved and the treatment that the call receives. Finally, an `END_CALL_EVENT` message is sent to the client when its association with a call is dissolved.

This section includes the following message definitions:

- [BEGIN\\_CALL\\_EVENT](#), on page 49
- [END\\_CALL\\_EVENT](#), on page 51
- [CALL\\_DATA\\_UPDATE\\_EVENT](#), on page 52
- [CALL\\_DELIVERED\\_EVENT](#), on page 55
- [CALL\\_ESTABLISHED\\_EVENT](#), on page 58
- [CALL\\_HELD\\_EVENT](#), on page 60
- [CALL\\_RETRIEVED\\_EVENT](#), on page 61
- [CALL\\_CLEARED\\_EVENT](#), on page 62
- [CALL\\_CONNECTION\\_CLEARED\\_EVENT](#), on page 63
- [CALL\\_ORIGINATED\\_EVENT](#), on page 64
- [CALL\\_FAILED\\_EVENT](#), on page 65
- [CALL\\_CONFERENCED\\_EVENT](#), on page 66
- [CALL\\_TRANSFERRED\\_EVENT](#), on page 69
- [CALL\\_DIVERTED\\_EVENT](#), on page 72
- [CALL\\_SERVICE\\_INITIATED\\_EVENT](#), on page 73
- [CALL\\_QUEUED\\_EVENT](#), on page 74
- [CALL\\_DEQUEUED\\_EVENT](#), on page 76
- [RTP\\_STARTED\\_EVENT \(OPTIONAL\)](#), on page 78
- [RTP\\_STOPPED\\_EVENT \(OPTIONAL\)](#), on page 79

## Primary.Actual Field Format

From Cisco Unified CCX 8.0(1) release onwards, Join Across Line (JAL) feature is supported. If an agent uses this feature while handling calls between an IPCC extension and non-ACD extension (non-IPCC extension), and the call on his non-ACD extension survives, then Unified CCX will treat this as a business call, which moved to secondary extension of the agent.



In this scenario, if a CTI client like CAD uses the Unified CCX CTI protocol version 14 for fetching call events, it will receive the call events in the new Primary.Actual field format. In this format, all connection device and subject device id fields in many of the Unified CCX CTI call events sent to the client will be changed to include the primary ICD extension concatenated with a "dot" and the actual extension used (for example, 1000.1001).

## General Rules

The general rules for the Primary.Actual field format in the Unified CCX CTI Protocol Version 14 are mentioned below:

- This format applies only to non-ICD secondary lines for logged on agents.
- This format is backward compatible with Unified CCX CTI clients that use versions prior to 14. For backward compatibility, Unified CCX removes the primary ID field and returns only the actual extension ID.
- All instances of ConnectionDeviceID, subject DeviceID, ANI, DNIS, and DialedNumbers fields are affected. These fields exist in many \_CONF and \_EVENT messages. Clients can also provide the new format to \_REQ messages (not required). Unified CCX will ignore the primary part and utilize only the actual extension to be used in the third party call control methods.
- The device type shall also change to reflect the field type. A new field DEVID\_NON\_ACD\_DEVICE is introduced to label "Primary.Actual" fields.
- Since the device ID is able to hold two IDs, the maximum length of the ID is essentially cut in half. With this new format, the maximum length for the device ID fields is cut from 64 bytes to 31 bytes (1 byte for the dot) assuming that both the primary and the actual IDs are of the same length.

## BEGIN\_CALL\_EVENT

The first association between a call and a client (a route point, a CTI port, or an agent phone to which the agent has logged in) generates a BEGIN\_CALL\_EVENT message to the client, providing the call ID and the initial call context data. This message is optional.

The CallID identifies the call, and the ConnectionDeviceType and ConnectionDeviceID uniquely identify the client's local call connection, if any, or another valid call connection.

This message always precedes any other event messages for that call. Subsequent changes to the call context data (if any) result in CALL\_DATA\_UPDATE\_EVENT messages containing the changed call data being sent to the client.



### Note

There can be multiple calls with the same CallID value.

The following tables define the format of the BEGIN\_CALL\_EVENT message.

**Table 56: BEGIN\_CALL\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 0.	UINT	4

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 21.	USHORT	2
NumCTIClients	The number of clients previously associated with this call. This value also indicates the number of client signatures and timestamps that are present in the floating part of the message.	USHORT	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2
CallType	The general classification of the call type. See <a href="#">CallType values</a> .	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">Table 1</a>	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
CalledPartyDisposition	Indicates the disposition of the called party. See <a href="#">Disposition values</a> .	USHORT	2

**Table 57: BEGIN\_CALL\_EVENT floating part message body format**

Floating part Field name	Value	Data type	MaxSize
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
ANI <sub>[8]</sub> (optional)	ANI (Automatic Number Identification). The telephone number of the person making the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	40
UserToUserInfo <sub>[9]</sub> (optional)	The user-to-user information element.	UNSPEC	131

Floating part Field name	Value	Data type	MaxSize
DNIS <sub>[10]</sub> (optional)	The DNIS (Dial Number Identification Service) provided with the call; that is, the number associated with a call on a switch. This can be different, though often it is not, from the number the caller dialed. This is different if the call is transferred. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	32
DialedNumber <sub>[11]</sub> (optional)	The telephone number dialed. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	40
CallerEnteredDigits <sub>[12]</sub> (optional)	The digits entered by the caller in response to IVR prompting.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> . (optional)throughCallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARRAY	252

## END\_CALL\_EVENT

An END\_CALL\_EVENT message is generated when the association between a call and the client is dissolved and no further call-event messages for the call are sent to this client. This message does not necessarily indicate that the subject call has been terminated.

This message is optional.

The following tables define the format of the END\_CALL\_EVENT message.

**Table 58: END\_CALL\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 0.	UINT	4
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4

**Table 59: END\_CALL\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_DATA\_UPDATE\_EVENT

Changes to the call context data generate a CALL\_DATA\_UPDATE\_EVENT to the client that contains only the items that have changed. This message is optional. The initial call context is provided in the BEGIN\_CALL\_EVENT message.



### Note

This event MUST be sent if Unified CCX changes the call ID with no other notifying events such as CALL\_CONFERENCED\_EVENT or CALL\_TRANSFERRED\_EVENT. One circumstance in Unified CCX where this can happen is when a non-ACD call is transferred through a route point into the ACD system. In the 1-2-1 transfer model, when the call is transferred, call 1 is the resultant call but is unknown to monitoring systems.

The CALL\_DATA\_UPDATE\_EVENT message is defined in the following tables.

**Table 60: CALL\_DATA\_UPDATE\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 0.	UINT	4
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 21.	USHORT	2
NumCTIClients	The number of clients associated with this call. This value also indicates the number of client signatures and timestamps that are present in the floating part of the message.	USHORT	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2
CallType	The general classification of the call type. See <a href="#">CallType values</a> .	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
NewConnectionDeviceType	The type of device ID supplied in the NewConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
NewCallID	The new Call ID value assigned to this call by Unified CCX.	UINT	4
CalledPartyDisposition	The disposition of the called party. See <a href="#">Disposition values</a> .	USHORT	2
CampaignID	The Campaign ID value. Set this field to zero if not used.	UINT	4
reserved	Set this value to zero.	UINT	4

Table 61: CALL\_DATA\_UPDATE\_EVENT floating part message body format

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The previous ID of the call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
NewConnectionDeviceID <sub>[47]</sub> (required)	The new ID of the call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
ANI <sub>[8]</sub> (optional)	ANI (automatic Number Identification). The telephone number of the person making the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	40
CallerEnteredDigits <sub>[12]</sub> (optional)	The digits entered by the caller in response to the IVR prompting.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARR	252
CustomerPhoneNumber (optional)	Customer phone number.	STRING	20
CustomerAccountNumber <sub>[96]</sub> (optional)	Customer Account Number.	STRING	32

## CALL\_DELIVERED\_EVENT

The arrival of a call at any device on Unified CCX generates a CALL\_DELIVERED\_EVENT message to the client. This event generally indicates the called device is ringing. This is defined in the following tables.

The LocalConnectionState field can be used to distinguish between those cases of the call arriving at the switch and those cases of the call arriving at an agent IP phone.

**Table 62: CALL\_DELIVERED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2
ApplicationID	The Application ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
CSQID	The Contact Service Queue ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
AlertingDeviceType	Indicates the device ID type supplied in the <b>AlertingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CallingDeviceType	Indicates the device ID type supplied in the <b>CallingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2

Fixed part Field name	Value	Data type	Byte size
CalledDeviceType	Indicates the device ID type supplied in the <b>CalledDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LastRedirectDeviceType	Indicates the type of the device ID supplied in the <b>LastRedirectDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2

**Table 63: CALL\_DELIVERED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
AlertingDeviceID <sub>[26]</sub> (required)	The device ID of the device that is alerting. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CallingDeviceID <sub>[27]</sub> (optional)	The device ID of the calling device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CalledDeviceID <sub>[28]</sub> (required)	The device ID of the originally called device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64



Floating part Field name	Value	Data type	Maximum size
LastRedirectDeviceID <sub>[29]</sub> (optional)	The device ID of the previously alerted device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
SecondaryCallID <sub>[202]</sub> (optional)	The ID of the consultation Call that Unified CCX placed from the CTI port to the agent IP phone.	UINT	4
ANI <sub>[8]</sub> (optional)	ANI (Automatic Number Identification). The telephone number of the person making the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	40
UserToUserInfo <sub>[9]</sub> (optional)	The user-to-user information element.	UNSPEC	131
DNIS <sub>[10]</sub> (optional)	The DNIS (Dialed Number Identification Service) provided with the call; that is, the number associated with a call on a switch. This can be different, though often it is not, from the number the caller dialed. This is different if the call is transferred. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	32
DialedNumber <sub>[11]</sub> (optional)	The telephone number dialed. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	40
CallerEnteredDigits <sub>[12]</sub> (optional)	The digits entered by the caller in response to the IVR prompting.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> . (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40

Floating part Field name	Value	Data type	Maximum size
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARR	252

## CALL\_ESTABLISHED\_EVENT

The answering of a call on an IP phone on Unified CCX creates a new call connection and generates a CALL\_ESTABLISHED\_EVENT message to the client. This is defined in the following tables.

The CallID identifies the call, and the ConnectionDeviceType and ConnectionDeviceID uniquely identify the new call connection that was created. When more than one call with the same CallID value exists, the connection being created by this CALL\_ESTABLISHED\_EVENT shall apply to the call that does not yet have a destination connection established.

**Table 64: CALL\_ESTABLISHED\_EVENT fixedfield name message body format**

Fixed Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2
ApplicationID	The Application ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
CSQID	The Contact Service Queue ID of the call.	UINT	4

Fixed Field name	Value	Data type	Byte size
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
AnsweringDeviceType	Indicates the type of the device ID supplied in the AnsweringDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CallingDeviceType	Indicates the device ID type supplied in the <b>CallingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CalledDeviceType	Indicates the device ID type supplied in the <b>CalledDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LastRedirectDeviceType	Indicates the type of the device ID supplied in the <b>LastRedirectDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 65: CALL\_ESTABLISHED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
AnsweringDeviceID <sub>[30]</sub> (required)	The device ID of the device that answered the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
CallingDeviceID <sub>[27]</sub> (optional)	The device ID of the calling device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64

Floating part Field name	Value	Data type	Maximum size
CalledDeviceID <sub>[28]</sub> (required)	The device ID of the originally called device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
LastRedirectDeviceID <sub>[29]</sub> (optional)	The device ID of the previously alerted device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_HELD\_EVENT

Placing a call on hold sends to the client a CALL\_HELD\_EVENT message, defined in the following tables.

**Table 66: CALL\_HELD\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
HoldingDeviceType	Indicates the device ID type supplied in the HoldingDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 67: CALL\_HELD\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
HoldingDeviceID <sub>[31]</sub> (required)	The device ID of the device that activated the hold. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_RETRIEVED\_EVENT

Resuming a call previously placed on hold sends to the client a CALL\_RETRIEVED\_EVENT message, defined in the following tables.

**Table 68: CALL\_RETRIEVED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
RetrievingDeviceType	Indicates the type of the device ID supplied in the RetrievingDeviceID floating field.	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 69: CALL\_RETRIEVED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
RetrievingDeviceID <sub>[32]</sub> (optional)	The device ID of the device that de-activated hold. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_CLEARED\_EVENT

A CALL\_CLEARED\_EVENT message, defined in the following tables, is sent to the client when a call is terminated, normally when the last device disconnects from a call.

**Table 70: CALL\_CLEARED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
reserved	This value is set to 0.	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 71: CALL\_CLEARED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
reserved	This value is left blank.	STRING	64

## CALL\_CONNECTION\_CLEARED\_EVENT

When a party drops from a conference call, a CALL\_CONNECTION\_CLEARED\_EVENT message, defined in the following tables, can be sent to the client.

**Table 72: CALL\_CONNECTION\_CLEARED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
ReleasingDeviceType	Indicates the device ID type supplied in the ReleasingDeviceID floating field.	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 73: CALL\_CONNECTION\_CLEARED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the cleared connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

Floating part Field name	Value	Data type	Maximum size
ReleasingDeviceID <sub>[33]</sub> (required)	The device ID of the device that cleared the connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_ORIGINATED\_EVENT

The initiation of a call at any monitored device sends to the client a CALL\_ORIGINATED\_EVENT, defined in the following tables.

**Table 74: CALL\_ORIGINATED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 7.	USHORT	2
ApplicationID	The Application ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
CSQID	The Contact Service Queue ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
CallingDeviceType	Indicates the device ID type supplied in the <b>CallingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2



Fixed part Field name	Value	Data type	Byte size
CalledDeviceType	Indicates the device ID type supplied in the <b>CalledDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 75: CALL\_ORIGINATED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CallingDeviceID <sub>[27]</sub> (required)	The device ID of the calling device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CalledDeviceID <sub>[28]</sub> (required)	The device ID of the called device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_FAILED\_EVENT

A CALL\_FAILED\_EVENT message, defined in the following tables, can be sent to the client when a call cannot be completed.

**Table 76: CALL\_FAILED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2

Fixed part Field name	Value	Data type	Byte size
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
FailingDeviceType	Indicates the type of the device ID supplied in the FailingDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CalledDeviceType	Indicates the type of the device ID supplied in the CalledDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 77: CALL\_FAILED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
FailingDeviceID <sub>[34]</sub> (optional)	The device ID of the failing device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CalledDeviceID <sub>[28]</sub> (optional)	The device ID of the called device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_CONFERENCED\_EVENT

The joining of calls into a conference call causes a CALL\_CONFERENCED\_EVENT message, defined in the following tables, to be sent to the client. Unified CCX MUST ensure that the

CALL\_CONFERENCED\_EVENT is sent after any DELIVERED events for the secondary call, even in the case of a blind conference call.

**Table 78: CALL\_CONFERENCED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
PrimaryDeviceType	Indicates the connection type supplied in the PrimaryDeviceID floating field.	USHORT	2
PrimaryCallID	The Call ID value that Unified CCX assigned to the primary call.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
NumParties	The number of active connections associated with this conference call, up to a maximum of 16. This value also indicates the number of ConnectedPartyCallID, ConnectedPartyDeviceType, and ConnectedPartyDeviceID floating fields present in the floating part of the message.	USHORT	2
SecondaryDeviceType	Indicates the connection type of the ID supplied in the SecondaryDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
SecondaryCallID	The Call ID value that Unified CCX assigns to the secondary call.	UINT	4
ControllerDeviceType	Indicates the device ID type supplied in the ControllerDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2

Fixed part Field name	Value	Data type	Byte size
AddedPartyDeviceType	Indicates device ID type supplied in the AddedPartyDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 79: CALL\_CONFERENCED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
PrimaryDeviceID <sub>[35]</sub> (required)	The device ID of the primary call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
SecondaryDeviceID <sub>[36]</sub> (required)	The device ID of the secondary call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
ControllerDeviceID <sub>[37]</sub> (required)	The device ID of the conference controller device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
AddedPartyDeviceID <sub>[38]</sub> (optional)	The device ID of the device added to the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
ConnectedPartyCallID <sub>[39]</sub> (optional)	The Call ID value assigned to one of the conference call parties. There can be more than one ConnectedPartyCallID field in the message (see the preceding TypeParties field description).	UINT	4

Floating part Field name	Value	Data type	Maximum size
ConnectedPartyDeviceType <sub>[40]</sub> (optional)	The device ID type supplied in the following ConnectedPartyDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .  There can be more than one ConnectedPartyDeviceType field in the message (see the preceding TypeParties field description). This field always immediately follows the corresponding ConnectedPartyCallID field.	USHORT	2
ConnectedPartyDeviceID <sub>[41]</sub> (optional)	The device ID of one of the conference call parties. See <a href="#">DeviceType values</a> .  There can be more than one ConnectedPartyDeviceID field in the message (see the preceding TypeParties field description). This field always immediately follows the corresponding ConnectedPartyDeviceType field. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64

## CALL\_TRANSFERRED\_EVENT

The transfer of a call to another destination causes a CALL\_TRANSFERRED\_EVENT message, defined in the following tables, to be sent to the client.

A CALL\_TRANSFERRED\_EVENT must always be sent AFTER any corresponding CALL\_DELIVERED\_EVENT for the secondary call.

**Table 80: CALL\_TRANSFERRED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
PrimaryDeviceType	Indicates the connection type supplied in the PrimaryDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

Fixed part Field name	Value	Data type	Byte size
PrimaryCallID	The Call ID value that Unified CCX assigned to the primary call.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
NumParties	The number of active connections associated with this conference call, up to a maximum of 16.  This value also indicates the number of the ConnectedPartyCallID, the ConnectedPartyDeviceType, and the ConnectedPartyDeviceID floating fields present in the floating part of the message.	USHORT	2
SecondaryDeviceType	Indicates the connection type supplied in the SecondaryDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
SecondaryCallID	The Call ID value that Unified CCX assigned to the secondary call.	UINT	4
TransferringDeviceType	Indicates the device ID type supplied in the TransferringDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
TransferredDeviceType	Indicates the device ID type supplied in the TransferredDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 81: CALL\_TRANSFERRED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
PrimaryDeviceID <sub>[35]</sub> (required)	The device ID of the primary call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
SecondaryDeviceID <sub>[36]</sub> (required)	The device ID of the secondary call connection. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
TransferringDeviceID <sub>[42]</sub> (required)	The device ID of the device that transferred the call. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
TransferredDeviceID <sub>[43]</sub> (required)	The device ID of the device to which the call was transferred. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64
ConnectedPartyCallID <sub>[39]</sub> (optional)	The Call ID value assigned to one of the call parties. There can be more than one ConnectedPartyCallID field in the message (see the preceding NumParties field description).	UINT	4
ConnectedPartyDeviceType <sub>[40]</sub> (optional)	Indicates the type of the device ID supplied in the following ConnectedPartyDeviceID floating field. There can be more than one ConnectedPartyDeviceType field in the message (see the preceding TypeParties field description). This field always immediately follows the corresponding ConnectedPartyCallID field.	USHORT	2
ConnectedPartyDeviceID <sub>[41]</sub> (optional)	The device ID of one of the call parties. There can be more than one ConnectedPartyDeviceID field in the message (see the preceding NumParties field description). This field always immediately follows the corresponding ConnectedPartyDeviceType field. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format, on page 48</a> will apply to this field.	STRING	64

## CALL\_DIVERTED\_EVENT

The moving of a call from one device or target to another can cause a CALL\_DIVERTED\_EVENT message, defined in the following tables, to be sent to the client. Examples of this are a call ringing at one agent and getting diverted to another. Another example is a call getting diverted out of queue to an agent.

**Table 82: CALL\_DIVERTED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
Application ID	The Application ID of the call.	UNIT	4
reserved	This value is set to 0xffffffff.	UNIT	4
DivertingDeviceType	The type of the device ID supplied in the DivertingDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CalledDeviceType	The type of the device ID supplied in the CalledDeviceID floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	A reason or explanation for the occurrence of the event. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2



**Table 83: CALL\_DIVERTED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
DivertingDeviceID <sub>[44]</sub> (required)	The device ID of the device from which the call was diverted. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CalledDeviceID <sub>[28]</sub> (required)	The device ID of the device to which the call was diverted. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_SERVICE\_INITIATED\_EVENT

The initiation of telecommunications service (“dial tone”) at a device causes a CALL\_SERVICE\_INITIATED\_EVENT message, defined in the following tables, to be sent to the client.

**Table 84: CALL\_SERVICE\_INITIATED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2
ApplicationID	The Application ID of the call.	UINT	4

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0xffffffff.	UINT	4
CSQID	The Contact Service Queue ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
reserved	This value is set to 0.	USHORT	2
CallingDeviceType	Indicates the device ID type supplied in the <b>CallingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 85: CALL\_SERVICE\_INITIATED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CallingDeviceID <sub>[27]</sub> (required)	The device ID of the calling device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64

## CALL\_QUEUED\_EVENT

The placing of a call in a queue pending the availability of some resource causes a CALL\_QUEUED\_EVENT message, defined in the following tables, to be sent to the client.

Clients with Client Events Service can receive this message when an outbound call is queued waiting for a resource. Clients with All Events Service can also receive this message when inbound calls are queued.

Table 86: CALL\_QUEUED\_EVENT fixed part message body format

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
ApplicationID <sub>[77]</sub>	The Application ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
QueueDeviceType	Indicates the device ID type supplied in the <b>Queue DeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CallingDeviceType	Indicates the device ID type supplied in the <b>CallingDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
CalledDeviceType	Indicates the device ID type supplied in the <b>CalledDeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
LastRedirectDeviceType	Indicates the device ID type supplied in the <b>LastRedirect DeviceID</b> floating field. See <a href="#">DeviceType values</a> .	USHORT	2
reserved	This value is set to zero.	USHORT	2
NumCSQs	The number of CSQs to which the call has queued, up to a maximum of 20.	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 87: CALL\_QUEUEUED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. This is the CTI Port that the call is on. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
QueuedDeviceID <sub>[45]</sub> (required)	The ID of the queuing device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CallingDeviceID <sub>[27]</sub> (optional)	The calling line ID (if any). In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CalledDeviceID <sub>[28]</sub> (required)	The DN of the Route point that was called. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
LastRedirectDeviceID <sub>[29]</sub> (optional)	The device ID of the redirecting device. In CTI Protocol Version 14, the general rules for the <a href="#">Primary.Actual Field Format</a> , on page 48 will apply to this field.	STRING	64
CSQID <sub>[62]</sub> (required)	The Contact Service Queue ID of the call.	UINT	4
reserved <sub>[63]</sub>	This value is set to 0xffffffff.	UINT	4
reserved <sub>[64]</sub>	This value is set to 0.	USHORT	2

## CALL\_DEQUEUED\_EVENT

The explicit removal of a call from a queue causes a CALL\_DEQUEUED\_EVENT message, defined in the following tables, to be sent to the client.

Note that this event is not reported when calls leave a queue “normally” (that is, due to resource availability, call termination, and so on). In those cases, a DIVERTED event is expected. It is not currently anticipated that Unified CCX will need to send this event. One possible exception would be if a call is queued to multiple queues and then a script or some mechanism on Unified CCX dequeues the call from less than all the queues.

**Table 88: CALL\_DEQUEUED\_EVENT fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
reserved	This value is set to 21.	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4
ApplicationID	The Application ID of the call.	UINT	4
reserved	This value is set to 0xffffffff.	UINT	4
QueueDeviceType	Indicates the type of device supplied in the QueueDeviceID floating field.	USHORT	2
NumQueued	The number of calls remaining in the queue for this service.	USHORT	2
NumCSQs	The number of CSQs that the call has been removed from, up to a maximum of 20. A zero value indicates that the call has been implicitly removed from all queues.	USHORT	2
LocalConnectionState	The local end state of the connection. For more information, see <a href="#">LocalConnectionState (LCS) values</a> .	USHORT	2
EventCause	Indicates a reason or explanation for the event occurrence. See <a href="#">Call EventCause (CEC) values</a> .	USHORT	2

**Table 89: CALL\_DEQUEUED\_EVENT floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device.	STRING	64
QueueDeviceID <sub>[45]</sub> (required)	The device ID of the queuing device. For Unified CCX this is "".	STRING	64

Floating part Field name	Value	Data type	Maximum size
CSQID <sub>[62]</sub> (required)	The Contact Service Queue ID of the call.	UINT	4
reserved <sub>[63]</sub>	This value is set to 0xffffffff.	UINT	4
reserved <sub>[64]</sub>	This value is set to 0.	USHORT	2

## RTP\_STARTED\_EVENT (OPTIONAL)

The RTP\_STARTED\_EVENT message indicates that an RTP (Real Time Protocol) media stream has been started. There are two media streams for audio media (one for the caller and one for the receiver). So there are two RTP Started events, one indicating the input has started (that is, the phone is listening) and the other that the output has started (that is, the outgoing media from the agent phone has begun).

The RTP Started event generally comes up at the same time as the established event. It also occurs when a call is retrieved from being on hold, and when the transfer or conference operations are completed.

There is no guarantee of the order of the RTP started events in relationship to the established and retrieved events. The RTP started events can occur before or after the established event.

The following tables define the format of the RTP\_STARTED\_EVENT message.

**Table 90: RTP\_STARTED\_EVENT (OPTIONAL) fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
clientPort	The TCP/IP port number of the client connection.	UINT	4
Direction	The direction of the event. One of the following values: 0: Input1: Output2: Bi-directional.	USHORT	2
RTPType	The type of the RTP event. One of the following values: 0: Audio1: Video2: Data	USHORT	2
BitRate	The media bit rate, used for a G.723 payload only: RTPBitRateR5_3: 1RTPBitRateR6_4: 2	UINT	4
EchoCancellation	0: off1: on	USHORT	2

Fixed part Field name	Value	Data type	Byte size
PacketSize	The packet size in milliseconds	UINT	4
PayloadType	The audio codec type. See <a href="#">Audio Codec Type values</a> .	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4

**Table 91: RTP\_STARTED\_EVENT (OPTIONAL) floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the Primary.Actual Field Format will apply to this field.	STRING	64
clientAddress <sub>[81]</sub> (required)	The IP address of the client.	STRING	16
AgentExtension <sub>[4]</sub> (optional)	The agent's IP phone extension	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number	STRING	64
SendingAddress <sub>[125]</sub> (optional)	The IP Address to which the client is sending the RTP stream.	STRING	16
SendingPort <sub>[126]</sub> (optional)	The UDP (User Datagram Protocol) port number to which the client is sending the RTP Stream.	UINT	4
AgentID <sub>[194]</sub>	The agent's Unified CCX login.	STRING	32

## RTP\_STOPPED\_EVENT (OPTIONAL)

The RTP\_STOPPED\_EVENT message indicates that an RTP media has been stopped. There are two media streams for audio media so there are two RTP Stopped events, one indicating the input has stopped (that is, the phone is not listening) and the other that the output has stopped (that is, the outgoing media from the agent phone has stopped).

The RTP Stopped Event is received when the call is placed on hold and when the call disconnects. The following tables define the format of the RTP\_STOPPED\_EVENT message.

**Table 92: RTP\_STOPPED\_EVENT (OPTIONAL) fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 1.	UINT	4
clientPort	The TCP/IP port number of the client connection that was closed.	UINT	4
Direction	The direction of the event. One of the following values: 0: Input 1: Output2: Bi-directional	USHORT	2
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to this call by Unified CCX.	UINT	4

**Table 93: RTP\_STOPPED\_EVENT (OPTIONAL) floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The device ID between the call and the device. In CTI Protocol Version 14, the general rules for the Primary.Actual Field Format will apply to this field.	STRING	64
ClientAddress <sub>[81]</sub> (required)	The IP address of the client.	STRING	16
AgentExtension <sub>[4]</sub> (optional)	The agent's ACD IP phone extension.	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64
SendingAddress <sub>[125]</sub> (optional)	The IP Address to which the client was sending the RTP stream.	STRING	16



Floating part Field name	Value	Data type	Maximum size
SendingPort <sub>[126]</sub> (optional)	The UDP (User Datagram Protocol) port number to which the client was sending the RTP Stream.	UINT	4
AgentID <sub>[194]</sub>	The agent's Unified CCX login.	STRING	32

## Call-Control (Client-Control) messages

The call-control messages are from client applications requesting changes to agent states or establishing, answering, controlling, or terminating calls on behalf of a specified agent phone number, or manipulating the telephone features associated with an agent's IP phone.

These messages evoke a message response from Unified CCX. Consequently the messages are paired request/response messages. A request message for the desired control action is sent, and the outcome of the request is indicated by the type of response message that is received. Depending on the specifics of the request, as much as 10 or 15 seconds might elapse before the response message is returned. A successfully executed request is indicated by the corresponding control-action confirmation message, while an unsuccessful request is indicated by a CONTROL\_FAILURE\_CONF message.

This section includes the following message definitions:

- [CONTROL\\_FAILURE\\_CONF](#), on page 82
- [ALTERNATE\\_CALL\\_REQ](#), on page 83
- [ALTERNATE\\_CALL\\_CONF](#), on page 84
- [ANSWER\\_CALL\\_REQ](#), on page 84
- [ANSWER\\_CALL\\_CONF](#), on page 85
- [CLEAR\\_CALL\\_REQ](#), on page 85
- [CLEAR\\_CALL\\_CONF](#), on page 86
- [CLEAR\\_CONNECTION\\_REQ](#), on page 87
- [CLEAR\\_CONNECTION\\_CONF](#), on page 87
- [CONFERENCE\\_CALL\\_REQ](#), on page 88
- [CONFERENCE\\_CALL\\_CONF](#), on page 90
- [CONSULT\\_CALL\\_REQ](#), on page 91
- [CONSULT\\_CALL\\_CONF](#), on page 93
- [HOLD\\_CALL\\_REQ](#), on page 94
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- RECONNECT\_CALL\_REQ, on page 97
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- SET\_CALL\_DATA\_REQ, on page 104
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- SUPERVISOR\_ASSIST\_EVENT, on page 110
- BAD\_CALL\_REQ, on page 111
- BAD\_CALL\_CONF, on page 112

## CONTROL\_FAILURE\_CONF

The CONTROL\_FAILURE\_CONF message, defined in the following tables, confirms that the previously requested control-service function identified by the given invokeID was unsuccessful. This message is sent in place of the corresponding confirmation message for the requested control-service function.

**Table 94: CONTROL\_FAILURE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
FailureCode	One of the values specifying the reason that the request failed. See <a href="#">Control Failure (CF) values</a> .	USHORT	2
Unified CCX ErrorCode	Unified CCX detailed error data, if available. Otherwise, 0. See <a href="#">Unified CCX ErrorCode values</a> .	UINT	4

**Table 95: CONTROL\_FAILURE\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
Text <sub>[7]</sub>	Text describing the error.	STRING	255

## ALTERNATE\_CALL\_REQ

The ALTERNATE\_CALL\_REQ message, defined in the following tables, requests the double action of placing an active call on hold and then either retrieving a previously held call or answering an alerting call at the same device.



### Note

When specifying an alerting call, since there is no formal connection between a call and an alerting device, the ConnectionDeviceID of the calling connection is used here (as given in the CALL\_DELIVERED\_EVENT message).

**Table 96: ALTERNATE\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ActiveCallID	The Call ID value assigned to the currently active call by Unified CCX.	UINT	4
OtherCallID	The Call ID value assigned to the other call by Unified CCX.	UINT	4
ActiveConnectionDeviceType	The device ID type supplied in the ActiveConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
OtherConnectionDeviceType	The device ID type supplied in the OtherConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 97: ALTERNATE\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ActiveConnectionDeviceID <sub>[50]</sub> (required)	The ID of the currently active call connection.	STRING	64
OtherConnectionDeviceID <sub>[52]</sub> (required)	The ID of the other call connection.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## ALTERNATE\_CALL\_CONF

The ALTERNATE\_CALL\_CONF message, defined in the following table, confirms the processing completion of the Alternate Call request.

**Table 98: ALTERNATE\_CALL\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## ANSWER\_CALL\_REQ

The ANSWER\_CALL\_REQ message, defined in the following tables, allows a client to connect an alerting call at the device which is alerting.


**Note**

Since there is no formal connection between a call and an alerting device, the ConnectionDeviceID of the calling connection is used here (as given in the CALL\_DELIVERED\_EVENT message).

**Table 99: ANSWER\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4

Fixed part Field name	Value	Data type	Byte size
CallID	The Call ID value assigned to the call by Unified CCX. Can contain the special value 0xffffffff when alerting callID is not provided.	UINT	4
ConnectionDeviceType	The device ID type supplied in the ConnectionDeviceID floating field. Set this field to CONNECTION_ID_NONE when the alerting callID is not provided. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 100: ANSWER\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (optional)	The ID of the connection between the call and the device. Either ConnectionDeviceID or AgentInstrument must be specified.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The IP phone number that answers the call. Either ConnectionDeviceID or AgentInstrument must be specified.	STRING	64

## ANSWER\_CALL\_CONF

The ANSWER\_CALL\_CONF message, defined in the following table, confirms successful completion of the Answer Call request.

**Table 101: ANSWER\_CALL\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## CLEAR\_CALL\_REQ

The CLEAR\_CALL\_REQ message, defined in the following tables, allows a client to release all devices from the specified call without regard to the number of other call parties.

**Note**

Most applications use the CLEAR\_CONNECTION\_REQ message to avoid inadvertent clearing of all conference parties when dropping from a conference call.

**Table 102: CLEAR\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 103: CLEAR\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## CLEAR\_CALL\_CONF

The CLEAR\_CALL\_CONF message, defined in the following table, confirms the processing completion of the Clear Call request.

**Table 104: CLEAR\_CALL\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## CLEAR\_CONNECTION\_REQ

The CLEAR\_CONNECTION\_REQ message, defined in the following tables, allows a client to release a specific device connection from a designated call.

If only one party remains connected to the call following this request, the remaining connection is cleared and the call is terminated.

**Table 105: CLEAR\_CONNECTION\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	An ID for this request message that is returned in the corresponding confirm message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 106: CLEAR\_CONNECTION\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the device connection that is to be released.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The phone number of the agent's IP phone whose connection is to be released.	STRING	64

## CLEAR\_CONNECTION\_CONF

The CLEAR\_CONNECTION\_CONF message, defined in the following table, confirms the processing completion of the Clear Connection request.

**Table 107: CLEAR\_CONNECTION\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## CONFERENCE\_CALL\_REQ

The CONFERENCE\_CALL\_REQ message, defined in the following tables, allows a client to conference an existing held call with another active call.

The two calls are merged and the two connections at the conferencing device are in the connected state.

**Table 108: CONFERENCE\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	An ID for this request message that is returned in the corresponding confirm message.	UINT	4
reserved	Set this value to 1.	UINT	4
HeldCallID	The Call ID value assigned to the call held by Unified CCX.	UINT	4
ActiveCallID	The Call ID value assigned to the active call by Unified CCX.	UINT	4
HeldConnectionDeviceType	The type device ID supplied in the HeldConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
ActiveConnectionDeviceType	The type device ID supplied in the ActiveConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	BOOL	2
reserved	Set this value to 0.	BOOL	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2



Fixed part Field name	Value	Data type	Byte size
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2

**Table 109: CONFERENCE\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ActiveConnectionDeviceID <sub>[50]</sub> (required)	The ID of the active call connection.	STRING	64
HeldConnectionDeviceID <sub>[53]</sub> (optional)	The ID of the held call connection. Either a HeldConnectionDeviceID or DialedNumber is required.	STRING	64
AgentInstrument <sub>[6]</sub> (required)	The agent's IP phone number.	STRING	64
DialedNumber <sub>[11]</sub> (optional)	The number to be dialed. Either a HeldConnectionDeviceID or DialedNumber is required.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARRAY	252
AccountCode <sub>[78]</sub> (optional)	Account code used by CTI applications.	STRING	40

## CONFERENCE\_CALL\_CONF

The CONFERENCE\_CALL\_CONF message, defined in the following tables, confirms successful completion of the Conference Call request.

**Table 110: CONFERENCE\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
NewCallID	The Call ID value assigned to the resulting conference call by Unified CCX.	UINT	4
NewConnectionDeviceType	The connection type of the device supplied in the NewConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
NumParties	The number of active connections associated with this conference call, up to a maximum of 16. This value also indicates the number of ConnectedPartyCallID, ConnectedPartyDeviceType and ConnectedPartyDeviceID floating fields present in the floating part of the message.	USHORT	2
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2

**Table 111: CONFERENCE\_CALL\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
NewConnectionDeviceID <sub>[47]</sub> (required)	The ID of the connection between the call and the device.	STRING	64
ConnectedPartyCallID <sub>[39]</sub> (optional)	The Call ID value assigned to one of the conference call parties. There can be more than one ConnectedPartyCallID field in the message (see NumParties, above).	UINT	4
ConnectedPartyDeviceType <sub>[40]</sub> (optional)	The device ID type of the device supplied in the following ConnectedPartyDeviceID floating field. There can be more than one ConnectedPartyDeviceType field in the message (see NumParties, above).	USHORT	2

Floating part Field name	Value	Data type	Maximum size
ConnectedPartyDeviceID <sub>[41]</sub> (optional)	The device ID of one of the conference call parties. There can be more than one ConnectedPartyDeviceID field in the message (see NumParties, above).	STRING	64

## CONSULT\_CALL\_REQ

The CONSULT\_CALL\_REQ message, defined in the following tables, requests the combined action of placing an active call on hold and then making a new call.

By default, the call context data of the active call is used to initialize the context data of the consultation call. A client can override some or all of this original call context in the consultation call by providing the desired values in this request.

**Table 112: CONSULT\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ActiveCallID	The Call ID value assigned to the active call by Unified CCX.	UINT	4
ActiveConnectionDeviceType	The connection type of the device supplied in the ActiveConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
ConsultType	Use following values: 0: Unspecified 1: Transfer 2: Conference	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	BOOL	2
reserved	Set this value to 0.	BOOL	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2

**Table 113: CONSULT\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ActiveConnectionDeviceID <sub>[50]</sub> (required)	The device ID of the active call connection.	STRING	64
DialedNumber <sub>[11]</sub> (required)	The number to be dialed to establish the new call.	STRING	40
AgentInstrument <sub>[6]</sub> (optional)	The phone number of the agent's IP phone that initiates the new call.	STRING	64
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data used in place of the corresponding variable from the active call.	STRING	40
CallVariable2 <sub>[14]</sub> (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data that used in place of the corresponding variable from the active call.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data used in place of the corresponding data from the active call.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251

Floating part Field name	Value	Data type	Maximum size
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	<del>NAMEDARRAY</del>	252
AccountCode <sub>[78]</sub> (optional)	Account code used by CTI applications.	STRING	40

## CONSULT\_CALL\_CONF

The CONSULT\_CALL\_CONF message, defined in the following tables, confirms successful completion of the Consult Call request:

**Table 114: CONSULT\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
NewCallID	The Call ID value assigned to the resulting new call by Unified CCX.	UINT	4
NewConnectionDeviceType	The type of device ID supplied in the NewConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2

**Table 115: CONSULT\_CALL\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
NewConnectionDeviceID <sub>[47]</sub> (required)	The ID of the device connection associated with the new call.	STRING	64

## HOLD\_CALL\_REQ

The HOLD\_CALL\_REQ message, defined in the following tables, allows a client to place an existing call connection into the held state.

**Table 116: HOLD\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The connection type of the device supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	Set this value to 0.	BOOL	2

**Table 117: HOLD\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## HOLD\_CALL\_CONF

The HOLD\_CALL\_CONF message, defined in the following table, confirms successful completion of the Hold Call request.

**Table 118: HOLD\_CALL\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## MAKE\_CALL\_REQ

The MAKE\_CALL\_REQ message, defined in the following tables, allows a client to initiate a call between two devices.

This request attempts to create a new call and establish a connection between the calling device (originator) and the called device (destination).

**Table 119: MAKE\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	BOOL	2
reserved	Set this value to 0.	BOOL	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2

Fixed part Field name	Value	Data type	Byte size
reserved (Version 14 and later)	Set this value to NULL_CSQ (0xFFFFFFFF).	UINT	4

**Table 120: MAKE\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentInstrument <sub>[6]</sub> (required)	The agent's IP phone number	STRING	64
DialedNumber <sub>[11]</sub> (required)	The number to be dialed to establish the new call.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARR	252
AccountCode <sub>[78]</sub> (optional)	Account code used by CTI applications.	STRING	40

## MAKE\_CALL\_CONF

The MAKE\_CALL\_CONF message, defined in the following tables, confirms the processing completion of the Make Call request.



**Table 121: MAKE\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
NewCallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
NewConnectionDeviceType	The connection type of the device supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2

**Table 122: MAKE\_CALL\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
NewConnectionDeviceID <sub>[47]</sub> (required)	The device ID of the connection between the call and the device.	STRING	64

## RECONNECT\_CALL\_REQ

The RECONNECT\_CALL\_REQ message, defined in the following tables, requests the combined action of clearing an active call and then retrieving an existing held call.

**Table 123: RECONNECT\_CALL\_REQ fixed part field name message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ActiveCallID	The Call ID value assigned to the currently active call by Unified CCX.	UINT	4
HeldCallID	The Call ID value assigned to the held call by Unified CCX.	UINT	4

Fixed part Field name	Value	Data type	Byte size
ActiveConnectionDeviceType	The type of device ID supplied in the ActiveConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
HeldConnectionDeviceType	The type device ID supplied in the HeldConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 124: RECONNECT\_CALL\_REQ floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
ActiveConnectionDeviceID <sub>[50]</sub> (required)	The device identifier of the currently active call connection.	STRING	64
HeldConnectionDeviceID <sub>[53]</sub> (required)	The device identifier of the held call connection.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## RECONNECT\_CALL\_CONF

The RECONNECT\_CALL\_CONF message, defined in the following table, confirms the processing completion of the Reconnect Call message request.

**Table 125: RECONNECT\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## RETRIEVE\_CALL\_REQ

The RETRIEVE\_CALL\_REQ message, defined in the following tables, allows a client to retrieve an existing held connection.

**Table 126: RETRIEVE\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
HeldCallID	The Call ID value assigned to the held call by Unified CCX.	UINT	4
HeldConnectionDeviceType	The connection type of the device supplied in the HeldConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 127: RETRIEVE\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
HeldConnectionDeviceID <sub>[53]</sub> (required)	The device ID of the held call connection.	STRING	64
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## RETRIEVE\_CALL\_CONF

The RETRIEVE\_CALL\_CONF message, defined in the following table, confirms the processing completion of the Retrieve Call request.

**Table 128: RETRIEVE\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## TRANSFER\_CALL\_REQ

The TRANSFER\_CALL\_REQ message, defined in the following tables, allows a client to transfer a held call with an active call at the same device.

This request merges the two calls with connections to a single common device. Both of the connections with the common device become NULL and their device IDs are released.

**Table 129: TRANSFER\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ActiveCallID	The Call ID value assigned to the currently active call by Unified CCX.	UINT	4
HeldCallID	The Call ID value assigned to the held call by Unified CCX.	UINT	4
ActiveConnectionDeviceType	The connection type of the device supplied in the ActiveConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
HeldConnectionDeviceType	The connection type of the device supplied in the HeldConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	USHORT	2
reserved	Set this value to 0.	BOOL	2
reserved	Set this value to 0.	BOOL	2

Fixed part Field name	Value	Data type	Byte size
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2

**Table 130: TRANSFER\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ActiveConnectionDeviceID <sub>[50]</sub> (required)	The device ID of the currently active call connection.	STRING	64
HeldConnectionDeviceID <sub>[53]</sub> (optional)	The device ID of the held call connection. Either a HeldConnectionDeviceID or DialedNumber is required.	STRING	64
AgentInstrument <sub>[6]</sub> (required)	The agent's IP phone number.	STRING	64
DialedNumber <sub>[11]</sub> (optional)	The telephone number dialed.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	<del>NAMEDVAR</del>	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	<del>NAMEDARR</del>	252
AccountCode <sub>[78]</sub> (optional)	Account code used by CTI applications.	STRING	40

## TRANSFER\_CALL\_CONF

The TRANSFER\_CALL\_CONF message, defined in the following tables, confirms the processing completion of the Transfer Call request.

**Table 131: TRANSFER\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
NewCallID	The Call ID value assigned to the resulting transferred call by Unified CCX.	UINT	4
NewConnectionDeviceType	The type of device ID supplied in the NewConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
NumParties	The number of active connections associated with this conference call, up to a maximum of 16.	USHORT	2
reserved	This value is set to 0xffff.	USHORT	2
reserved	This value is set to 3.	USHORT	2

**Table 132: TRANSFER\_CALL\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
NewConnectionDeviceID <sub>[47]</sub> (required)	The device ID of the connection between the call and the device.	STRING	64

## SEND\_DTMF\_SIGNAL\_REQ

The SEND\_DTMF\_SIGNAL\_REQ message, defined in the following tables, allows a client to have the ACD transmit a sequence of DTMF tones on behalf of a call party.

**Table 133: SEND\_DTMF\_SIGNAL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The connection type of the device supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
ToneDuration	The duration in milliseconds of the DTMF digit tones. A value of 0 can be used to select a default value. Can be ignored if Unified CCX is unable to alter the DTMF tone timing.	USHORT	2
PauseDuration	Specifies the duration in milliseconds of the DTMF inter-digit spacing. A value of 0 can be used to select a default value. Can be ignored if Unified CCX is unable to alter the DTMF tone timing.	UINT	4

**Table 134: SEND\_DTMF\_SIGNAL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device.	STRING	64
DTMFString <sub>[67]</sub> (required)	The sequence of tones to be generated.	STRING	32
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64

## SEND\_DTMF\_SIGNAL\_CONF

The SEND\_DTMF\_SIGNAL\_CONF message, defined in the following table, confirms the processing completion of the send DTMF signal request.

**Table 135: SEND\_DTMF\_SIGNAL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## SET\_CALL\_DATA\_REQ

This message is sent by a client or Unified CCX to set one or more call variables and/or call wrap-up data. The combination of CallID, ConnectionDeviceType, and ConnectionDeviceID uniquely identify the call to be operated on. Variables not provided in the message are not affected. See also [Call context data](#).

The SET\_CALL\_DATA\_REQ and SET\_CALL\_DATA\_CONF messages are defined in the following table and in [SET\\_CALL\\_DATA\\_CONF](#), on page 106.

**Table 136: SET\_CALL\_DATA\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2
CallType	The general classification of the call type. See <a href="#">CallType Values</a> , page 9-13.	USHORT	2
CalledPartyDisposition	Indicates the disposition of the called party. See <a href="#">Disposition Values</a> , page 9-19.	USHORT	2
reserved	Set this value to 0.	UINT	4



Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 1.	UINT	4

**Table 137: SET\_CALL\_DATA\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the device.	STRING	64
ANI <sub>[8]</sub> (optional)	The calling line ID of the caller.	STRING	40
CallerEnteredDigits <sub>[12]</sub> (optional)	The digits entered by the caller in response to IVR prompting.	STRING	40
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARRAY	252
CustomerAccountNumber <sub>[96]</sub> (optional)	Customer Account Number.	STRING	32

## SET\_CALL\_DATA\_CONF

The SET\_CALL\_DATA\_CONF message confirms the processing completion of the SET\_CALL\_DATA\_REQ message.

When the requested call variables have been updated, and the new values are guaranteed to remain set in the event that the CTI session is abnormally terminated, Unified CCX responds to the client that requested the update with the SET\_CALL\_DATA\_CONF message.

**Table 138: SET\_CALL\_DATA\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## SUPERVISE\_CALL\_REQ

At any time, for monitoring quality of service, training, and so on, a supervisor client can send a SUPERVISE\_CALL\_REQ message to Unified CCX to request barge-in or interception of a call. At the end of such call supervision, a supervisor client should send a SUPERVISE\_CALL\_REQ message with SUPERVISOR\_CLEAR as the SupervisorAction value to disconnect the supervisor's device from the call. The SUPERVISE\_CALL\_REQ message, defined in the following tables, allows a supervisor client to supervise an agent's call, either through barge-in or interception.

**Table 139: SUPERVISE\_CALL\_REQ fixed part field name message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
AgentCallID	The Call ID value assigned to the call by Unified CCX. This Call ID value is normally the Integer CallID on the agent's device.	UINT	4
SupervisorCallID	The Call ID value of the supervisor. If there is no supervisor call, this field must be set to 0xffffffff.	UINT	4
AgentConnectionDeviceType	The type of device ID supplied in the AgentConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

Fixed part Field name	Value	Data type	Byte size
SupervisorConnectionDeviceType	The type of device ID supplied in the SupervisorConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
SupervisoryAction	One of the values from <a href="#">Table 141: Supervisory Action Values, on page 107</a> specifying the desired call supervision operation.	USHORT	2

**Table 140: SUPERVISE\_CALL\_REQ floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
AgentConnectionDeviceID <sub>[90]</sub>	The identifier of the connection of the agent call and the agent's device. Either the CallID and the ConnectionDeviceID, or one of AgentExtension, AgentID, or AgentInstrument must be provided.	STRING	64
SupervisorConnectionDeviceID <sub>[91]</sub>	The identifier of the connection of the supervisor call and the supervisor's device. Either the CallID and the ConnectionDeviceID, or one of AgentExtension, AgentID, or AgentInstrument must be provided.	STRING	64
AgentExtension <sub>[4]</sub>	The agent's IP phone extension. Either CallID and ConnectionDeviceID, or one of AgentExtension, AgentID, or AgentInstrument must be provided.	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number.	STRING	64
SupervisorInstrument <sub>[85]</sub>	The supervisor's IP phone number.	STRING	64
AgentID <sub>[194]</sub> (optional)	The agent's login ID	STRING	32

### Supervisory Action Values

**Table 141: Supervisory Action Values**

Supervisory Action	Description	Value
SUPERVISOR_MONITOR	The supervisor device is to be connected to the call for silent monitoring. This allows the supervisor to hear all parties participating in the call.	1

Supervisory Action	Description	Value
SUPERVISOR_BARGE_IN	The supervisor device is to be connected to the call as an active participant. This allows the supervisor to speak to all parties participating in the call, as in a conference.	3
SUPERVISOR_INTERCEPT	The supervisor device is to be connected to the call as an active participant and the agent connection will be dropped.	4

## SUPERVISE\_CALL\_CONF

The SUPERVISE\_CALL\_CONF message, defined in the following tables, confirms the processing completion of the SUPERVISE\_CALL\_REQ message.

**Table 142: SUPERVISE\_CALL\_CONF fixed part field name message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 143: SUPERVISE\_CALL\_CONF floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The identifier of the connection between the call and the agent device that is being supervised.	STRING	64

## SUPERVISOR\_ASSIST\_REQ

When an agent needs supervisor assistance, an agent can send a SUPERVISOR\_ASSIST\_REQ message to Unified CCX asking for assistance from a team supervisor.

Once an available supervisor is found, a call with calltype SUPERVISOR\_ASSIST is initiated and a SUPERVISOR\_ASSIST\_CONF is sent to the requesting client. If no supervisor can be found a FAILURE\_CONF response is returned to the requesting client.

The SUPERVISOR\_ASSIST\_REQ message, defined in the following tables, allows a client to notify the client agent's supervisor that assistance with the indicated call is required.

**Table 144: SUPERVISOR\_ASSIST\_REQ fixed part field name message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value of the call with which the agent needs assistance. Can contain the special value 0xffffffff when there is no related call.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 145: SUPERVISOR\_ASSIST\_REQ floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The identifier of the connection between the call and the agent's device.	STRING	64
AgentExtension <sub>[4]</sub>	The agent's IP phone extension.	STRING	16
AgentInstrument <sub>[6]</sub> (optional)	The agent's IP phone number	STRING	64
AgentID <sub>[194]</sub> (optional)	The agent's Unified CCX login.	STRING	32

## SUPERVISOR\_ASSIST\_CONF

The SUPERVISOR\_ASSIST\_CONF message, defined in the following tables, confirms the processing completion of the SUPERVISOR\_ASSIST\_REQ message.

**Table 146: SUPERVISOR\_ASSIST\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
CallID	The Call ID value assigned to the resulting SupervisorAssist call by Unified CCX.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	Set this value to 0xffff	USHORT	2
reserved	Set this value to 0.	USHORT	2

**Table 147: SUPERVISOR\_ASSIST\_CONF floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The identifier of the device connection associated with the new call.	STRING	64

## SUPERVISOR\_ASSIST\_EVENT

The SUPERVISOR\_ASSIST\_EVENT message, defined in the following tables, indicates that a client requested supervisor assistance.

**Table 148: SUPERVISOR\_ASSIST\_EVENT fixed part field name message body format**

Fixed part Field name	Value	Data type	Byte size
reserved	This value is set to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The type of device ID supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
reserved	This value is set to 0.	UINT	4

**Table 149: SUPERVISOR\_ASSIST\_EVENT floating part field name message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The identifier of the connection between the call and the agent's device. In CTI Protocol Version 14, the general rules for the Primary.Actual Field Format will apply to this field.	STRING	64
ClientID[1] (required)	The ID of the client making the notification.	STRING	64
Text <sub>[7]</sub>	Text describing the assistance requested.	STRING	255

## BAD\_CALL\_REQ

The BAD\_CALL\_REQ message, defined in the following tables, allows a CTI client to notify Unified CCX of the bad quality of a call.

Given this information, Unified CCX can log information on the call that can help diagnose the issue.

**Table 150: BAD\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
ConnectionDeviceType	The connection type of the device supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2
CallID	The Call ID value of the call that the agent needs assistance with. Can contain the special value 0xffffffff when there is no related call.	UINT	4

**Table 151: BAD\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The ID of the connection between the call and the agent's device.	STRING	64

Floating part Field name	Value	Data type	Maximum size
AgentID <sub>[194]</sub> (optional)	The agent's Unified CCX login.	STRING	32

## BAD\_CALL\_CONF

The BAD\_CALL\_CONF message, defined in the following table, confirms the processing completion of the BAD\_CALL\_REQ message.

*Table 152: BAD\_CALL\_CONF fixed part message body format*

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4

## Miscellaneous messages

This section contains the following message definitions:

- [QUERY\\_QUEUE\\_STATISTICS\\_REQ](#), on page 112
- [QUERY\\_QUEUE\\_STATISTICS\\_CONF](#), on page 113
- [QUERY\\_AGENT\\_QUEUE\\_STATISTICS\\_REQ](#), on page 115
- [QUERY\\_AGENT\\_QUEUE\\_STATISTICS\\_CONF](#), on page 116
- [QUERY\\_DEVICE\\_INFO\\_REQ](#), on page 117
- [QUERY\\_DEVICE\\_INFO\\_CONF](#), on page 117
- [QUERY\\_SUMMARY\\_STATISTICS\\_REQ](#), on page 118
- [QUERY\\_SUMMARY\\_STATISTICS\\_CONF](#), on page 119
- [SNAPSHOT\\_CALL\\_REQ](#), on page 121
- [SNAPSHOT\\_CALL\\_CONF](#)
- [SNAPSHOT\\_DEVICE\\_REQ](#), on page 124
- [SNAPSHOT\\_DEVICE\\_CONF](#), on page 125

## QUERY\_QUEUE\_STATISTICS\_REQ

The QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ message, defined in the following tables, allows a CTI client to obtain the current call handling statistics for one of the client agent's CSQs. To avoid impacting



system performance, clients should not request queue statistics too frequently. Depending on the needs of the client application, updating queue statistics after each call is handled can be appropriate.

**Table 153: QUERY\_QUEUE\_STATISTICS\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4

**Table 154: QUERY\_QUEUE\_STATISTICS\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
CSQID <sub>[62]</sub>	The ID of the Contact Service Desk.	INT	4

## QUERY\_QUEUE\_STATISTICS\_CONF

The QUERY\_QUEUE\_STATISTICS\_CONF message, defined in the following tables, confirms the processing completion of the QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ message.

Today values represent statistics accumulated since StartTime as indicated in the message. Call counts and times are updated when any after-call work for the call is completed (calls currently in progress are not included in the statistics).

**Table 155: QUERY\_QUEUE\_STATISTICS\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
<b>Real-Time Statistics</b>			
LoggedInAgents	The number of agents currently belonging to the CSQ who are currently logged in.	USHORT	2
InSessionAgents	The number of agents currently belonging to the CSQ who are currently In-Session (talking state).	USHORT	2
AvailableAgents	The number of agents currently available (ready state).	USHORT	2
UnAvailableAgents	The number of agents currently belonging to the CSQ who are currently Unavailable (not ready state).	USHORT	2

Fixed part Field name	Value	Data type	Byte size
InWorkAgents	The number of agents currently belonging to the CSQ who are currently in Work state (work not ready state).	USHORT	2
SelectedAgents	The number of agents currently belonging to the CSQ who are currently in Selected state (reserved state).	USHORT	2
CallsInPriorityQueue1	The total number of calls that are in the priority queue 1 of CSQ.	UINT	4
CallsInPriorityQueue2	The total number of calls that are in the priority queue 2 of CSQ.	UINT	4
CallsInPriorityQueue3	The total number of calls that are in the priority queue 3 of CSQ.	UINT	4
CallsInPriorityQueue4	The total number of calls that are in the priority queue 4 of CSQ.	UINT	4
CallsInPriorityQueue5	The total number of calls that are in the priority queue 5 of CSQ.	UINT	4
CallsInPriorityQueue6	The total number of calls that are in the priority queue 6 of CSQ.	UINT	4
CallsInPriorityQueue7	The total number of calls that are in the priority queue 7 of CSQ.	UINT	4
CallsInPriorityQueue8	The total number of calls that are in the priority queue 8 of CSQ.	UINT	4
CallsInPriorityQueue9	The total number of calls that are in the priority queue 9 of CSQ.	UINT	4
CallsInPriorityQueue10	The total number of calls that are in the priority queue 10 of CSQ.	UINT	4
<b>Today (from StartTime until EndTime) statistics</b>			
StartTime	The Date and Time that the following counters have started accumulating.	TIME	4
EndTime	The Date and Time that the following counters ended.	TIME	4
TotalCalls	The total number of calls that were associated to this CSQ in the current day.	UINT	4

Fixed part Field name	Value	Data type	Byte size
OldestCallInQueue	The elapsed wait time for the oldest call currently in queue.	UINT	4
HandledCallsToday	The total number of calls that were handled by agents belonging to the CSQ in the current day.	UINT	4
CallsAbandoned	The total number of calls that were associated with the CSQ and were abandoned by the callers before connecting to an agent.	UINT	4
CallsDequeued	The total number of calls that were dequeued from the CSQ queue.	UINT	4
AverageTalkDuration	The average talk duration for the calls coming in to this CSQ.	UINT	4
AverageWaitDuration	The average wait time for a call before it gets connected to an agent.	UINT	4
LongestTalkDuration	The longest time that a caller was talking to an agent (for this CSQ).	UINT	4
LongestWaitDuration	The longest wait time before a caller got connected to an agent.	UINT	4

**Table 156: QUERY\_QUEUE\_STATISTICS\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
CSQID <sub>[62]</sub>	The ID of the Contact Service Desk.	INT	4

## QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ

The QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ message allows a CTI client to obtain the summary queue statistics for an agent for all the CSQs to which the agent belongs. To avoid impacting system performance, clients should not request agent statistics too frequently. Depending on the needs of the client application, updating agent statistics after each call is handled may be appropriate.

**Table 157: QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4

**Table 158: QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentID <sub>[194]</sub> (required)	The Agent ID.	STRING	32

## QUERY\_AGENT\_QUEUE\_STATISTICS\_CONF

The QUERY\_AGENT\_QUEUE\_STATISTICS\_CONF message, defined in the following tables, confirms the completion of the QUERY\_AGENT\_QUEUE\_STATISTICS\_REQ message.

**Table 159: QUERY\_AGENT\_QUEUE\_STATISTICS\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
<b>Real-Time Statistics</b>			
CallsInQueue	The sum of the total number of calls in queue for all the CSQs that this Agent belongs to.	UINT	4
OldestCallInQueue	The elapsed wait time of the oldest call currently in queue for any of the CSQs to which the Agent belongs.	UINT	4

**Table 160: QUERY\_AGENT\_QUEUE\_STATISTICS\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentID <sub>[194]</sub> (required)	The Agent ID.	STRING	

## QUERY\_DEVICE\_INFO\_REQ

The QUERY\_DEVICE\_INFO\_REQ message, defined in the following tables, allows a client to retrieve general information about a specified device.

**Table 161: QUERY\_DEVICE\_INFO\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
reserved	Set this value to 0.	USHORT	2

**Table 162: QUERY\_DEVICE\_INFO\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentInstrument <sub>[6]</sub> (required)	The agent IP phone number.	STRING	64

## QUERY\_DEVICE\_INFO\_CONF

The QUERY\_DEVICE\_INFO\_CONF message, defined in the following tables, confirms the processing completion of the Query Device Info request.

**Table 163: QUERY\_DEVICE\_INFO\_CONF field name message body format**

Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
reserved	This value is set to 21.	USHORT	2
reserved	This value is set to -1.	USHORT	2
reserved	This value is set to -1.	USHORT	2
reserved	This value is set to 0.	USHORT	2

Field name	Value	Data type	Byte size
reserved	This value is set to 0.	USHORT	2
MaxActiveCalls	The maximum number of concurrent calls that can be active at the device.	USHORT	2
MaxHeldCalls	The maximum number of concurrent calls that can be held at the device. Set to 0xFFFF if unknown or unavailable.	USHORT	2
MaxDevicesInConference	The maximum number of devices that can participate in conference calls at the device. Set to 0xFFFF if unknown or unavailable.	USHORT	2
MakeCallSetup	A bitwise combination of Agent State masks in which a MAKE_CALL_REQ message can be initiated.	UINT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	UINT	4

**Table 164: QUERY\_DEVICE\_INFO\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
reserved <sub>[70]</sub>	This value is set to 0xffff.	USHORT	2
reserved <sub>[71]</sub>	This value is set to 3.	USHORT	2

## QUERY\_SUMMARY\_STATISTICS\_REQ

The QUERY\_SUMMARY\_STATISTICS\_REQ message, defined in the following table, allows a CTI client to obtain system summary statistics for Unified CCX. To avoid impacting system performance, clients should not request statistics too frequently.

**Table 165: QUERY\_SUMMARY\_STATISTICS\_REQ field name message body format**

Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4

## QUERY\_SUMMARY\_STATISTICS\_CONF

The QUERY\_SUMMARY\_STATISTICS\_CONF message, defined in the following table, confirms the processing completion of the QUERY\_SUMMARY\_STATISTICS\_REQ message.

Today values represent statistics accumulated since StartTime as indicated in the message. Call counts and times are updated when any after-call work for the call is completed (calls currently in progress are not included in the statistics).

**Table 166: QUERY\_SUMMARY\_STATISTICS\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
<b>Resource Statistics</b>			
NumQueues	The number of CSQs configured in the Unified CCX system.	USHORT	2
LoggedInAgents	The number of agents who are currently logged in	USHORT	2
InSessionAgents	The number of agents who are currently In-Session.	USHORT	2
AvailableAgents	The number of agents who are currently available.	USHORT	2
UnAvailableAgents	The number of agents who are currently Unavailable.	USHORT	2
InWorkAgents	The number of agents who are currently in Work state.	USHORT	2
SelectedAgents	The number of agents who are currently in Selected state.	USHORT	2
CallsInPriorityQueue1	The total number of calls that are in priority queue 1 for all CSQs.	UINT	4
CallsInPriorityQueue2	The total number of calls that are in priority queue 2 for all CSQs.	UINT	4

Fixed part Field name	Value	Data type	Byte size
CallsInPriorityQueue3	The total number of calls that are in priority queue 3 for all CSQs.	UINT	4
CallsInPriorityQueue4	The total number of calls that are in priority queue 4 for all CSQs.	UINT	4
CallsInPriorityQueue5	The total number of calls that are in priority queue 5 for all CSQs.	UINT	4
CallsInPriorityQueue6	The total number of calls that are in priority queue 6 of all CSQs.	UINT	4
CallsInPriorityQueue7	The total number of calls that are in priority queue 7 for all CSQs.	UINT	4
CallsInPriorityQueue8	The total number of calls that are in priority queue 8 for all CSQs.	UINT	4
CallsInPriorityQueue9	The total number of calls that are in priority queue 9 for all CSQs.	UINT	4
CallsInPriorityQueue10	The total number of calls that are in priority queue 10 for all CSQs.	UINT	4
<b>Today (from StartTime until EndTime) Statistics</b>			
StartTime	The Date and Time that the following counters have started accumulating.	TIME	4
EndTime	The Date and Time that the following counters ended.	TIME	4
TotalCalls	The total number of calls in the current day	UINT	4
OldestCallInQueue	The time that the oldest call currently in queue has been waiting.	UINT	4
HandledCallsToday	The total number of calls that were handled in the current day.	UINT	4
CallsAbandoned	The total number of calls that were abandoned by the callers before connecting to an agent.	UINT	4
AverageTalkDuration	The average talk duration.	UINT	4
AverageWaitDuration	The average wait time for a call before it gets connected to an agent	UINT	4



Fixed part Field name	Value	Data type	Byte size
LongestTalkDuration	The longest time that a caller was talking to an agent	UINT	4
LongestWaitDuration	The longest wait time before a caller got connected to an agent.	UINT	4

## SNAPSHOT\_CALL\_REQ

The SNAPSHOT\_CALL\_REQ message, defined in the following tables, allows a client to retrieve information on a specified call.

The call information provided consists of a list of the associated devices and the connection state for each device.

**Table 167: SNAPSHOT\_CALL\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4
reserved	Set this value to 1.	UINT	4
CallID	The Call ID value assigned to the call by Unified CCX.	UINT	4
ConnectionDeviceType	The connection type of the device supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

**Table 168: SNAPSHOT\_CALL\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID <sub>[25]</sub> (required)	The identifier of the connection between the call and the device.	STRING	64

## SNAPSHOT\_CALL\_CONF

The SNAPSHOT\_CALL\_CONF message, defined in the following tables, confirms the processing completion of the requested Snapshot Call data.

**Table 169: SNAPSHOT\_CALL\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
CallType	This value is set to 0. For a silent monitoring call, this value is set to 21 (CALLTYPE_SUPERVISOR_MONITOR).	USHORT	2
reserved	This value is set to 0.	USHORT	2
NumCallDevices	The number of active devices associated with this call, up to a maximum of 16.  This value also indicates the number of CallCallID, CallConnectionDeviceType, CallConnectionDeviceID, CallDeviceType, CallDeviceID, and CallDeviceConnectionState floating fields present in the floating part of the message.	USHORT	2
NumNamedVariables	The number of NamedVariable floating fields present in the floating part of the message.	USHORT	2
NumNamedArrays	The number of NamedArray floating fields present in the floating part of the message.	USHORT	2
reserved	This value is set to 0.	USHORT	2
reserved ( Only available in CTI Protocol version 11 and later.)	This value is set to 0.	INT	4

**Table 170: SNAPSHOT\_CALL\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
ANI <sub>[8]</sub> (optional)	The calling line ID of the caller.	STRING	40
DNIS <sub>[10]</sub> (optional)	The DNIS provided with the call.	STRING	32

Floating part Field name	Value	Data type	Maximum size
DialedNumber <sub>[11]</sub> (optional)	The number dialed.	STRING	40
CallerEnteredDigits <sub>[12]</sub> (optional)	The digits entered by the caller in response to IVR prompting.	STRING	40
reserved <sub>[72]</sub> (required)	This value is set to 0.	UINT	4
reserved <sub>[73]</sub> (required)	This value is set to 0.	UINT	4
CallVariable1 <sub>[13]</sub> (optional)	Call-related variable data.	STRING	40
CallVariable2 <sub>[14]</sub> . (optional) through CallVariable9 <sub>[21]</sub> (optional)	...	...	...
CallVariable10 <sub>[22]</sub> (optional)	Call-related variable data.	STRING	40
CallWrapupData <sub>[46]</sub> (optional)	Call-related wrapup data.	STRING	40
NamedVariable <sub>[82]</sub> (optional)	Call-related variable data that has a variable name defined in the Unified CCX Editor. See <a href="#">NAMEDVARIABLE data format</a> , for the format of this field.	NAMEDVAR	251
NamedArray <sub>[83]</sub> (optional)	Call-related variable data that has an array variable name defined in the Unified CCX Editor. See <a href="#">NAMEDARRAY data format</a> , for the format of this field.	NAMEDARRAY	252
CallConnectionCallID <sub>[56]</sub> (optional)	The Call ID value assigned to one of the call device connections. There can be more than one CallCallID field in the message (see NumCallDevices, above).	UINT	4
CallConnectionDeviceType <sub>[57]</sub> (optional)	The connection type of the device supplied in the following CallConnectionDeviceID floating field. There can be more than one CallConnectionDeviceType fields in the message (see NumCallDevices, above). This field always immediately follows the corresponding CallConnectionCallID field. See <a href="#">ConnectionDeviceType values</a> .	USHORT	2

Floating part Field name	Value	Data type	Maximum size
CallConnectionDeviceID <sub>[58]</sub> (optional)	The device ID of one of the call connections. There can be more than one CallConnectionDeviceID field in the message (see NumCallDevices, above). This field always immediately follows the corresponding CallConnectionDeviceType field. See <a href="#">ConnectionDeviceType values</a> .	STRING	64
CallDeviceType <sub>[59]</sub> (optional)	The device ID type of the device supplied in the following CallDeviceID floating field. See <a href="#">DeviceType values</a> .  There can be more than one CallDeviceType field in the message (see NumCallDevices, above). This field always immediately follows the corresponding CallConnectionDeviceID field.	USHORT	2
CallDeviceID <sub>[60]</sub> (optional)	The device ID of the subject device. There can be more than one CallDeviceID field in the message (see NumCallDevices, above). This field always immediately follows the corresponding CallDeviceType field.	STRING	64
CallDeviceConnectionState <sub>[61]</sub> (optional)	The local connection state of one of the call device connections. There can be more than one CallDeviceConnectionState field in the message (see NumCallDevices, above). This field always immediately follows the corresponding CallDeviceID field.	USHORT	2

## SNAPSHOT\_DEVICE\_REQ

The SNAPSHOT\_DEVICE\_REQ message, defined in the following tables, allows a client to retrieve information on a specified device.

The device information provided consists of a list of the calls associated with the device and the current state of each call.

**Table 171: SNAPSHOT\_DEVICE\_REQ fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	A unique ID generated by the CTI client for each request message. This ID is returned in the corresponding confirmation message.	UINT	4

Fixed part Field name	Value	Data type	Byte size
reserved	Set this value to 1.	UINT	4
SnapshotDeviceType	For non-agent devices this indicates the type of the device specified in the following AgentInstrument floating field.	USHORT	2

**Table 172: SNAPSHOT\_DEVICE\_REQ floating part message body format**

Floating part Field name	Value	Data type	Maximum size
AgentInstrument <sub>[6]</sub> (required)	The agent's IP phone number or any valid phone number.	STRING	64

## SNAPSHOT\_DEVICE\_CONF

The SNAPSHOT\_DEVICE\_CONF message, defined in the following tables, confirms the requested completion of the Snapshot Device data request.

**Table 173: SNAPSHOT\_DEVICE\_CONF fixed part message body format**

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
NumCalls	The number of active calls associated with this device, up to a maximum of 16.  This value also indicates the number of CallConnectionCallID, CallConnectionDeviceType, CallConnectionDeviceID, and CallState floating fields present in the floating part of the message.	USHORT	2

**Table 174: SNAPSHOT\_DEVICE\_CONF floating part message body format**

Floating part Field name	Value	Data type	Maximum size
CallConnectionCallID <sub>[56]</sub> (optional)	The Call ID value assigned to one of the calls. There can be more than one CallConnectionCallID field in the message (see NumCalls, above).	UINT	4
CallConnectionDeviceType <sub>[57]</sub> (optional)	The connection type of the device supplied in the following CallConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .  There can be more than one CallConnectionDeviceType field in the message (see NumCalls, above). This field always immediately follows the corresponding CallConnectionCallID field.	USHORT	2
CallConnectionDeviceID <sub>[58]</sub> (optional)	Indicates the connection type supplied in the ConnectionDeviceID floating field. See <a href="#">ConnectionDeviceType values</a> .	STRING	64
CallDeviceConnectionState <sub>[61]</sub> (optional)	The active state of the call ( <a href="#">LocalConnectionState (LCS) values</a> ). There can be more than one CallState field in the message (see NumCalls, above). This field always immediately follows the corresponding CallConnectionDeviceID field.	USHORT	2

## START\_RECORDING\_REQ

A CTI client sends a START\_RECORDING\_REQ message, requesting Unified CCX to start recording a call. Upon receiving the START\_RECORDING\_REQ, Unified CCX processes the recording request. If the recording is successful, Unified CCX sends back START\_RECORDING\_CONF to the requesting CTI client. If not, Unified CCX sends back CONTROL\_FAILURE\_CONF with appropriate error codes indicating the failure cause.

**Table 175: START\_RECORDING\_REQ Message Format**

Fixed part Field name	Value	Data type	Byte size
MessageHeader	Standard message header. MessageType = 147.	MHDR	8
InvokeID	An ID for this request message that will be returned in the corresponding confirm message.	UINT	4

Fixed part Field name	Value	Data type	Byte size
reserved	Set the value to 1.	UINT	4
ConnectionCallID	The Call ID value assigned to this call.	UINT	4
reserved	Set the value to 0.	UINT	4
reserved	Set the value to 0.	UINT	4
reserved	Set the value to 0.	UINT	4
ConnectionDeviceIDType	Indicates the type of the connection identifier supplied in the ConnectionDeviceID floating field.	USHORT	2
reserved	Set the value to 0.	USHORT	2
reserved	Set the value to 0.	USHORT	2
reserved	Set the value to 0.	USHORT	2
reserved	Set the value to 0.	USHORT	2

Floating part Field name	Value	Data type	Maximum size
ConnectionDeviceID (required)	The identifier of the connection between the call and the device.	STRING	64
ClientAddress (server only)	The IP address of the CTI client requesting call recording, provided by CTI Server when this message is sent to a server application.	STRING	16
AgentExtension	The agent's ACD teleset extension. For requesting clients with All Events or Peripheral Monitor service, at least one of Agent Extension or Agent Instrument must be provided.	STRING	16
AgentInstrument	The agent's ACD instrument number. For requesting clients with ALL EVENTS or PERIPHERAL MONITOR service, at least one of Agent Extension or Agent Instrument must be provided.	STRING	64
ClientAddressIPv6 (v14+)(not supported by ICM)	The IP address of the CTI client (Where supported, this address can replace ClientAddress. One but not both must be present.).	STRING	16
Maximum message size (including header)			280

## START\_RECORDING\_CONF

The CTI server sends START\_RECORDING\_CONF message, confirming that it has started to record the call.

*Table 176: START\_RECORDING\_CONF Message Format*

Fixed part Field name	Value	Data type	Byte size
InvokeID	Set to the same value as the InvokeID from the corresponding request message.	UINT	4
reserved	This value is set to 0.	UINT	4
reserved	This value is set to 0.	UINT	4