



Changes and Additions

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Protocol Version 24

Following is a list of changes made in Protocol Version 24:

- Added STANDBY_ACTIVE_EVENT_MSG, ACTIVE_MAINTENANCE_REQ_MSG, ACTIVE_MAINTENANCE_RESP_MSG, ACTIVE_MAINTENANCE_EVENT_MSG, and STOPPING_REQUESTS_TO_THIS_SIDE_IND to [Message Types](#).
- Updated OPEN_REQ and OPEN_CONF in [Message Types](#)
- Updated CONFIG_AGENT_SERVICE_EVENT, SET_AGENT_SERVICE_DATA_REQ and SET_AGENT_SERVICE_DATA_CONF in [Message Types](#)
- Added E_CTI_INVALID_CLIENT_FOR_STANDBY to the [Failure Indication Message Status Codes](#) table.
- Added the following new messages:

1. CONFIG_AGENT_SERVICE_EVENT
 2. SET_AGENT_SERVICE_DATA_REQ
 3. SET_AGENT_SERVICE_DATA_CONF
- Modified the existing messages:
 1. AGENT_PRE_CALL_EVENT
 2. SNAPSHOT_CALL_CONF
 - Added the following values to the [Tag Values](#) table:
 1. FLT_ENABLED_SERVICES for the messages CONFIG_AGENT_SERVICE_EVENT and SET_AGENT_SERVICE_DATA_REQ.
 2. NUM_OF_ENABLED_SERVICES for the messages CONFIG_AGENT_SERVICE_EVENT and SET_AGENT_SERVICE_DATA_REQ.
 3. CCAI_CONFIG_ID for the message AGENT_PRE_CALL_EVENT
 4. NUM_POSITIVE_ANSWERS_SUGGESTIONS for the message SET_AGENT_SERVICE_DATA_REQ
 5. NUM_NEGATIVE_ANSWERS_SUGGESTIONS for the message SET_AGENT_SERVICE_DATA_REQ
 - Add a new row for the CONFIG_MSG_AGENT_SERVICE_MASK to Table 11: CTI Service Masks.

Protocol Version 23

Following is a list of changes made in Protocol Version 23:

- Added START_NETWORK_RECORDING_REQ and STOP_NETWORK_RECORDING_REQ to Client Control Service.
- Added the following values to the [Tag Values](#) table:
 - FLT_TASK_ID_TAG for the AGENT_TASKS_EVENT message
 - CALL_VAR_1_TAG through CALL_VAR_10_TAG for the SNAPSHOT_TASK_EVENT message
 - DESKTOP_CONNECTED_FLAG_TAG for the AGENT_TASKS_REQUEST_EVENT message
 - TEXT_TAG for the AGENT_TASKS_END_EVENT message
 - NUM_MRDS_TAG for the DESKTOP_CONNECTED_IND message
- Modified the existing message: MEDIA_LOGIN_REQ.
- Added the following new messages:
 - NETWORK_RECORDING_STARTED_EVENT

- NETWORK_RECORDING_ENDED_EVENT
- NETWORK_RECORDING_FAILED_EVENT
- NETWORK_RECORDING_TARGET_INFO_EVENT

Protocol Version 22

Following is a list of changes made in Protocol Version 22:

- Added MaxBeyondTaskLimit under AGENT_STATE_EVENT and QUERY_AGENT_STATE_CONF.
- Added FltPrecisionQueueID and FltPrecisionQueueName under CONFIG_SKILL_GROUP_EVENT.
- Added AgentDeskSettingsID in CONFIG_AGENT_EVENT.
- Added CONFIG_AGENT_DESK_SETTINGS_EVENT and CONFIG_PERIPHERAL_EVENT.
- Added PeripheralConfigKey and AgentDeskSettingsConfigKey under CONFIG_KEY_EVENT and CONFIG_BEGIN_EVENT.
- Changed the behavior of CALL_DATA_UPDATE_EVENT for ECC variables.

Protocol Version 21

Following is a list of changes made in Protocol Version 21:

- Added NumMRDs, FLTAgentMRDID, and FltAgentMRDState under CONFIG_AGENT_EVENT.
- Added a new Message with the type 259. This Message is reserved for internal use only.
- Changed the behavior of the PeripheralType field in the OPEN_CONF message.

Protocol Version 20

Following is a list of additional changes made in Protocol Version 20 (Unified CCE Release11.5(1)):



Important

In the CTI Server Protocol Version 20 the floating field tag and length size changed from 1 byte to 2 byte USHORT.

- Added the fixed AgentSkillTargetID and floating AgentID fields to the AGENT_PRE_CALL_EVENT message.
- Added the CONFIG_MRD_EVENT message.
 - Added bit mask value 32=Media Routing Domain Information to the CONFIG_REQUEST_EVENT message ConfigInformation field. Added a cross-reference to this field from the OPEN_REQ message ConfigMsgMask field.

- Added bit mask value 32=Media Routing Domain Information to the CONFIG_BEGIN_EVENT message ConfigInformation field.
- Added the MR_DOMAIN_ID_TAG, DESCRIPTION_TAG, ENTERPRISE_NAME_TAG, MAX_TASK_DURATION_TAG, AND INTERRUPTIBLE_TAG to the event CONFIG_MRD_EVENT.
- Added that the AGENT_PRE_CALL_ABORT_EVENT message is sent to the to ALL_EVENTS client.
- Added the following values to the [Tag Values](#) table:
 - SSO_ENABLED_TAG for the CONFIG_AGENT_EVENT and SET_AGENT_STATE_REQ
 - FLT_TASK_ID_TAG for the AGENT_TASKS_RESP message
 - FLT_ICM_DISP_TAG and FLT_APP_DISP_TAG for the MEDIA_LOGOUT_IND message
- For the CONFIG_AGENT_EVENT message, the length of the LoginName field is increased to 255 Bytes.
- Floating field subfields have changed:
 - The Tag subfield is a Data Type of USHORT and a Byte Size of 2.
 - The FieldLength subfield is a Data Type of USHORT and a Byte Size of 2.
- Added or modified these tags in the Tag Values table for the SNAPSHOT_TASKS_RESP message: SCRIPT_SELECTOR_TAG , APPLICATION_STRING1_TAG, APPLICATION_STRING2_TAG, CALL_VAR_1_TAG through CALL_VAR_10_TAG, NAMED_VARIABLE_TAG, NAMED_ARRAY_TAG.
- Added new TaskState Values that may appear in SNAPSHOT_TASK_RESP messages.
- Added the following values to the Disposition Codes table for nonvoice tasks:
 - 63=Task Transferred
 - 64=Application Disconnected
 - 65=Task Transferred on Agent Logout

Protocol Version 19

The following is a list of changes made for CTI Server in Protocol Version 19:

- Updated Message Types in Messaging Conventions chapter.
- Added Configuration Acquisition Messages section in Application Level Interfaces chapter.
- Added row containing INTERNAL_AGENT_STATE_TAG to Tag Values. Table [Tag Values](#).
- Added values 27 to 37 for outbound call types to CallType Values [CallType Values](#).
- Added row containing InternalAgentState to QUERY_AGENT_STATE CONF Message Form to Table [Message Types](#).

- Added Agent's Internal States and their Status Values to Table [Agent's Internal States and their Status Values](#).
- Removed the ClientAddressIPV6 and SendingAddressIPV6 elements and the CLIENT_ADDRESS_IPV6_TAG (226) and SENDING_ADDRESS_IPV6_TAG(227) tags due to a change in the handling of IPv6 addresses.
- Changed ClientAddress and SendingAddress elements' size from 16 byte to 64 byte to support IPv6 addresses.
- Added the DepartmentID field to the following messages:
 - OPEN_CONF
 - AGENT_STATE_EVENT
 - AGENT_TEAM_CONFIG_EVENT
 - QUERY_AGENT_STATE_CONF

Protocol Version 18

The following is a list of changes made for CTI Server in Protocol Version 18 (Unified CCE version 10.0(1) - internal use only):

- Added values 247 to 254 to Tag Values Table [Tag Values](#).

Protocol Version 17

The following is a list of changes made for CTI Server in Protocol Version 17 (Unified CCE version 9.0(1) - internal use only):

Added row containing OPTIONS_TAG to Tag Values Table [Tag Values](#).

Protocol Version 16

The following is a list of changes made for CTI Server in Protocol Version 16 (Unified CCE version 9.0(1)).

- Added Agent TeamName to AGENT_TEAM_CONFIG_EVENT Table [Supervisor Service](#)
Added AGENT_TEAM_NAME_TAG(243) to Table [Tag Values](#)
Added Direction to AGENT_STATE_EVENT Table [Tag Values](#)
Added DIRECTION_TAG(244) to Table [Tag Values](#)

Protocol Version 15

The following is a list of additions and changes made to the CTI Server in Protocol Version 15 (Unified CCE Version 8.5(x)).

- Added three message types to Table [Tag Values](#).

Added CALL_AGENT_GREETING_MASK to Table [Unsolicited Call Event Message Masks](#).

Added CALL_AGENT_GREETING_EVENT in Table [Unsolicited Call Event Message Masks](#).

Added AGENT_GREETING_CONTROL_REQ in Table [Message Types](#).

Added AGENT_GREETING_CONTROL_CONF in Table [Message Types](#).

Added CF_AGENT_GREETING_CONTROL_OPERATION_FAILURE Extended Control Failure Code to Table [ControlFailureCode Values](#).

Protocol Version 14

The following is a list of additions and changes made to the CTI Server in Protocol Version 14 (Unified CCE Version 8.0(x)).

- Changed the VersionNumber field in OPEN_REQ to 14 from 13.

Added new floating field tags to Table [Tag Values](#):

- REQUESTING_DEVICE_ID_TAG (219)
- REQUESTING_DEVICE_ID_TYPE_TAG (220)
- PRE_CALL_INVOKE_ID_TAG (221)
- ENTERPRISE_QUEUE_TIME (222)
- CALL_REFERENCE_ID_TAG (223)
- MULTI_LINE_AGENT_CONTROL_TAG (224)
- NETWORK_CONTROLLED_TAG (225)
- CLIENT_ADDRESS_IPV6_TAG (226)
- SENDING_ADDRESS_IPV6_TAG(227)
- NUM_PERIPHERALS_TAG(228)
- COC_CONNECTION_CALL_ID_TAG(229)
- COC_CALL_CONNECTION_DEVICE_ID_TYPE_TAG(230)
- COC_CALL_CONNECTION_DEVICE_ID_TYPE_TAG(231)
- CALL_ORIGINATED_FROM_TAG(232)
- SET_APPDATA_CALLID_TAG(233)
- CLIENT_SHARE_KEY_TAG(234)

- Added SkillGroupNumber field to MAKE_CALL_REQ.

- Added RouterCallKeyDay, RouterCallKeyCallID, and RouterCallKeySequenceNumber fields to SET_CALL_DATA.
- Added floating CallTypeID field and floating PreCallInvokeID field to AGENT_PRE_CALL_EVENT and SET_APP_DATA.
- Added CallReferenceIDfield (for solution call trace) to BEGIN_CALL_EVENT, CALL_DATA_UPDATE_EVENT, and SNAPSHOT_CALL_CONF.
- Added optional parms RequestingDeviceID and RequestingDeviceIDType to CLEAR_CONNECTION_REQ.
- Added DEVID_NON_ACD_DEVICE_IDENTIFIER and DEVID_SHARED_DEVICE_IDENTIFIER to Table [DeviceIDType Values](#).
- Added non ACD line types LINETYPE_NON_ACD_IN and LINETYPE_NON_ACD_OUT to Table [LineType Values](#).
- Added calltype CALLTYPE_NON_ACD (27) to Table [CallType Values](#).
- Added the NumPeripherals, FltPeripheralID, and MultilineAgentControl fields to OPEN_CONF.
- Added the following status codes to Table [PGStatusCode Values](#):
 - E_CTI_INVALID_CONFIG_MSG_MASK
 - E_CTI_AUTO_CONFIG_RESET
 - E_CTI_INVALID_MONITOR_STATUS
 - E_CTI_INVALID_REQUEST_ID_TYPE
- Added the following ControlFailureCode values to Table [ControlFailureCode Values](#):
 - CF_INVALID_TRUNK_ID_SPECIFIED
 - CF_SPECIFIED_EXTENSION_ALREADY_IN_USE
 - CF_ARBITRARY_CONF_OR_XFER_NOT_SUPPORTED
 - CF_NETWORK_TRANSFER_OR_CONSULT
 - CF_NETWORK_TRANSFER_OR_CONSULT_FAILED
 - CF_DEVICE_RESTRICTED
 - CF_LINE_RESTRICTED
 - CF_AGENT_ACCOUNT_LOCKED_OUT
 - CF_ARBITRARY_CONF_OR_XFER_NOT_SUPPORTED
 - CF_MAXIMUM_LINE_LIMIT_EXCEEDED
 - CF_SHARED_LINES_NOT_SUPPORTED
 - CF_EXTENSION_NOT_UNIQUE
- Added CTI_SERVICE_ACD_LINE_ONLY and CTI_SERVICE_IGNORE_CONF to Table [CTI Service Masks](#).

- Added the ClientAddressIPV6 field to the following events:
 - RTP_STARTED_EVENT
 - RTP_STOPPED_EVENT
 - CLIENT_SESSION_OPENED_EVENT
 - CLIENT_SESSION_CLOSED_EVENT
 - EMERGENCY_CALL_EVENT
 - START_RECORDING_REQ
 - START_RECORDING_CONF
 - STOP_RECORDING_REQ
 - STOP_RECORDING_CONF
- Added the SendingAddressIPV6 field to RTP_STARTED_EVENT and RTP_STOPPED_EVENT.
- Added the COCConnectionCallID, COCConnectionDeviceIDType, and COCConnectionDeviceID fields to CALL_SERVICE_INITIATED_EVENT and SNAPSHOT_CALL_CONF.
- Added device types DEVT_CTI_PORT_SCCP, and DEVT_CTI_PORT_SIP to Table [TypeOfDevice Values](#).

Protocol Versions 10-13

The following is a list of additions and changes made to the CTI Server in Protocol Versions 10-13 (ICM Version 7.0(x)).

- Added New Types to Existing Tables, New fields to existing Messages, New fields added to existing messages
- Added following fields to AGENT_STATE_EVENT: Duration (optional), NextAgentState, FltSkillGroupNumber, FltSkillGroupID, FltSkillGroupPriority, FltSkillGroupState
- Changed Version Number in OPEN_REQ to 13 from 6.
- Added DeviceIDType to SNAPSHOT_CALL_REQ to allow for Queues and Agent extensions with the same number.
- Added ForcedFlag and AgentServiceReq to SET_AGENT_STATE_REQ
- Added CTI_AGENT_STATE_CONTROL_ONLY, CTI_DEVICE_STATE_CONTROL, CTI_ROUTING, CTI_SERVICE_MINIMIZE_EVENTS, CTI_SERVICE_CONFIG_EVENTS, CTI_SERVICE_UPDATE_EVENTS, and CTI_SERVICE_IGNORE_DUPLICATE_AGENT_EVENTS in the CTI Service Masks table.
- Corrected CALL_QUEUED_EVENT scenarios to reflect a QueueDeviceIDType of DEVID_NONE and remove the QueueDeviceID floating field.
- Added DEVID_QUEUE to the device ID type table.
- Removed CallsInQueue from the QUERY_AGENT_STATISTICS_CONF message.

- In CALL_DELIVERED_EVENT, changed AlertingDevice to required.
- Removed Duplicate tag SKILL_GROUP_PRIORITY_TAG.
- Added DEVICE_TYPE_TAG to the tag value table.
- Removed OldestCallInQueue from the QUERY_AGENT_STATISTICS_CONF message.
- Added AgentAvailabilityStatus to QUERY_AGENT_STATE_CONF and AGENT_STATE_EVENT.
- Added AgentsICMAvailable, and AgentsApplicationAvailable to QUERY_SKILL_GROUP_STATISTICS_CONF.
- Added ICMAvailableTimeSession, RoutableTimeSession, ICMAvailableTimeToday, and RoutableTimeToday to QUERY_AGENT_STATISTICS_CONF.
- Added AGENT_UPDATED_EVENT and QUEUE_UPDATED_EVENT to the message type table. The individual messages were covered but they were missing from the table.
- Corrected EMERGENCY_CALL_CONF table.
- Changed PauseDuration in SEND_DTMF_SIGNAL_REQ from USHORT to UINT. The type was mistakenly changed and there is special code to cover the backward compatibility.
- Added EventDeviceType and EventDeviceID in SYSTEM_EVENT to allow specifying a non-numeric device on the in and out of service events.
- Corrected CustomerPhoneNumber, and CustomerAccountNumber to be optional in CALL_DATA_UPDATE_EVENT and SET_CALL_DATA_REQ
- Added NumFltSkillGroups field and floating fields for FltSkillGroupNumber, FltSkillGroupID, FltSkillGroupState, and FltSkillGroupPriority to allow specifying more than 1 skill group in the event to AGENT_STATE_EVENT
- Added RA_CALL_BY_CALL and RA_NAILED_CONNECTION in AgentWorkMode table.
- Updated following messages with new fields:
 - AGENT_STATE_EVENT: NextAgentState, Duration
 - CALL_DEQUEUED_EVENT: DeQueueType
 - OPEN_REQ: EventMsgMask
 - RTP_STARTED_EVENT: SendingAddress, SendingPort
 - RTP_STOPPED_EVENT: SendingAddress, SendingPort
 - SET_AGENT_STATE_REQ: ForcedFlag
- Updated tables with various new values.
- Updated tables with various new values.

Protocol Version 9

The following is a list of additions and changes made to the CTI Server in Protocol Version 9 (ICM Version 5.0).

- Added Server Service. See the section “Server Service” in Chapter 5, “Application Level Interfaces.”
- Added the CampaignID and QueryRuleID fields to the SET_CALL_DATA_REQ and CALL_DATA_UPDATE_EVENT messages.
- During an OPEN_REQ of an ALL_EVENTS client session, additional SYSTEM_EVENTS are now sent to the ALL_EVENTS client to indicate the status of each peripheral associated with the PG.
- Added AgentAvailabilityStatus and ICMAgentID fields to QUERY_AGENT_STATE_CONF and AGENT_STATE_EVENT.
- Added field AgentsICMAvailable and AgentsApplicationAvailable to QUERY_SKILL_GROUP_STATISTICS_CONF.
- Added fields ICMAvailableTimeSession, RoutableTimeSession, ICMAvailableTimeToday, and RoutableTimeToday to QUERY_AGENT_STATISTICS_CONF.
- Added ICMAgentID, AgentExtension, AgentID, and AgentInstrument fields to QUERY_AGENT_STATE_REQ.
- Updates to several tables in Chapter 6, “Constants and Status Codes.”

Protocol Version 8

The following is a list of additions and changes made to the CTI Server in Protocol Version 8 (ICM Version 4.6).

- Moved the RTP_STARTED_EVENT and RTP_STOPPED_EVENT messages to the ClientEvents Service.
- Added AgentInstrument optional field to the following messages:
 - ALTERNATE_CALL_REQ
 - CLEAR_CALL_REQ
 - CONFERENCE_CALL_REQ
 - DEFLECT_CALL_REQ
 - HOLD_CALL_REQ
 - RECONNECT_CALL_REQ
 - RETRIEVE_CALL_REQ
 - TRANSFER_CALL_REQ
 - SEND_DTMF_SIGNAL_REQ

- Added CalledPartyDisposition field to the BEGIN_CALL_EVENT, CALL_DATA_UPDATE_EVENT, and SNAPSHOT_CALL_CONF messages.
- Added CallType and CalledPartyDisposition fields to the SET_CALL_DATA_REQ message.
- Added BlendedAgent support.
- Add CALLTYPE_PREVIEW and CALLTYPE_RESERVATION call types (see table [CallType Values](#)).
- Add CallType and/or CalledPartyDisposition fields to the set_call_data_req, BEGIN_CALL_EVENT, CALL_DATA_UPDATE_EVENT, and snapshot_call_conf messages.
- Added CampaignID and QueryRuleID fields to the SET_CALL_DATA_REQ and CALL_DATA_UPDATE_EVENT messages.
- Add real time and 5 minutes fields to the query_skill_group_statistics_conf message.
- Add new AutoOut, Preview, and Reservation call metrics to the query_AGENT_statistics_conf and query_skill_group_statistics_conf messages.
- Added SessionID field to the AGENT_STATE_EVENT message.
- Add new BargeIn, Intercept, Monitor, Whisper, and Emergency call metrics to the query_AGENT_statistics_conf and query_skill_group_statistics_conf messages.
- Added Supervisor services. See [Supervisor Service](#) in Chapter 5, “Application Level Interfaces.”
- Added the following new messages:
 - SET_DEVICE_ATTRIBUTES_REQ / CONF
 - SUPERVISOR_ASSIST_REQ/CONF
 - EMERGENCY_CALL_REQ/CONF
 - SUPERVISE_CALL_REQ/CONF
 - AGENT_TEAM_CONFIG_REQ/CONF/EVENT
 - SET_APP_DATA_REQ/CONF
 - AGENT_DESK_SETTINGS_REQ/CONF
 - LIST_AGENT_TEAM_REQ/CONF
 - MONITOR_AGENT_TEAM_START_REQ/CONF
 - MONITOR_AGENT_TEAM_STOP_REQ/CONF
 - BAD_CALL_REQ/CONF
 - SET_DEVICE_ATTRIBUTES_REQ/CONF
 - REGISTER_SERVICE_REQ/CONF
 - UNREGISTER_SERVICE_REQ/CONF
 - START_RECORDING_REQ/CONF
 - STOP_RECORDING_REQ/CONF

- Added the CustomerPhoneNumber, and CustomerAccountNumber fields. Developers may receive these fields in the CALL_DATA_UPDATE_EVENT messages.

Protocol Version 7

The following is a list of additions and changes made to the CTI Server in Protocol Version 7 (ICM Version 4.5).

- Added the RTP_STARTED_EVENT and RTP_STOPPED_EVENT messages
- Added skill group parameters to the CALL_DELIVERED_EVENT message.
- Added LineHandle and LineType parameters to the CALL_REACHED_NETWORK_EVENT message.

Protocol Version 6

The following is a list of additions and changes made to the CTI Server in Protocol Version 6 (ICM Version 4.1).

- Added the NAMEDVAR and NAMEDARRAY data types.
- Added ICRCentralControllerTime and SystemCapabilities fields to the OPEN_CONF and SYSTEM_EVENT messages.
- System Events Service renamed to Miscellaneous Services.
- NamedVariable and NamedArray optional fields added to the following messages:
 - BEGIN_CALL_EVENT
 - CALL_DATA_UPDATE_EVENT
 - CALL_TRANSLATION_ROUTE_EVENT
 - SET_CALL_DATA_REQ
 - CONFERENCE_CALL_REQ
 - CONSULTATION_CALL_REQ
 - MAKE_CALL_REQ
 - MAKE_PREDICTIVE_CALL_REQ
 - TRANSFER_CALL_REQ
 - SNAPSHOT_CALL_CONF
- EventReasonCode field added to the AGENT_STATE_EVENT message.
- AGENT_PRE_CALL_EVENT and AGENT_PRE_CALL_ABORT_EVENT messages added .
- New messages added to Miscellaneous Services:
 - USER_MESSAGE_REQ/CONF

- USER_MESSAGE_EVENT
- SUPERVISOR_ASSIST_REQ/CONF
- EMERGENCY_CALL_REQ/CONF
- QUERY_AGENT_STATISTICS_REQ/CONF
- QUERY_SKILL_GROUP_STATISTICS_REQ/CONF

- AgentExtension and AgentID fields added to the QUERY_AGENT_STATE_REQ message.
- New values SYS_CTI_SERVER_OFFLINE, SYS_CTI_SERVER_ONLINE, and SYS_HALF_HOUR_CHANGE added to SystemEventID Values table (Table [SystemEventID Values](#)).
- Maximum length of all instances of the AgentInstrument field increased from 12 to 64 bytes.
- SystemCapabilities field removed from the OPEN_CONF and SYSTEM_EVENT messages.
- NumNamedVariables and NumNamedArrays fixed fields added to all messages that contain the NamedVariable and NamedArray floating fields.
- Supervisor Service removed.
- Queue information added to the QUERY_SKILL_GROUP_STATISTICS_CONF message.
- AgentInstrument field added to QUERY_AGENT_STATE_CONF message.
- Added the following fields to the QUERY_DEVICE_INFO_CONF message:
 - MaxActiveCalls
 - MaxHeldCalls
 - MaxDevicesInConference
 - MakeCallSetup
 - TransferConferenceSetup
 - CallEventsSupported
 - CallControlSupported
 - OtherFeaturesSupported

- New PGStatus code values PGS_CTI_SERVER_OFFLINE and PGS_LIMITED_FUNCTION added to the PGStatusCode table (Table [PGStatusCode Values](#)).
- Added HandledCallsAfterCallTimeSession and HandledCallsAfterCallTimeToday fields to the QUERY_AGENT_STATISTICS_CONF message.
- Added HandledCallsAfterCallTimeToHalf and HandledCallsAfterCallTimeToday fields to the QUERY_SKILL_GROUP_STATISTICS_CONF message.
- New Transfer/Conference Setup Mask values CONF_SETUP_SINGLE_ACD_CALL, TRANS_SETUP_SINGLE_ACD_CALL, and TRANS_SETUP_ANY_SINGLE_CALL added to the QUERY_DEVICE_INFO_CONF message.

- New SystemEventIDs SYS_INSTRUMENT_OUT_OF_SERVICE and SYS_INSTRUMENT_BACK_IN_SERVICE added to the SystemEventID Values table (Table [SystemEventID Values](#)).
- Added REGISTER_VARIABLES_REQ and REGISTER_VARIABLES_CONF messages.
- Added MonitorID field to AGENT_PRECALL_EVENT and AGENT_PRECALL_ABORT_EVENT messages.
- PeripheralID field added to the USER_MESSAGE_REQ message.
- Updated StatusCodes table (Table [Failure Indication Message Status Codes](#)).
- New LineTypes LINETYPE_OUTBOUND and LINETYPE_DID added to the LineTypes table (Table 6-14 LineType Values).
- Added ServiceNumber, ServiceID, SkillGroupNumber, SkillGroupID, and SkillGroupPriority fields to AGENT_PRECALL_EVENT message.
- Added note for CALL_ESTABLISHED_EVENT for Spectrum ACDs.
- Added /CCT (Call Control Table) optional field to the MAKE_CALL_REQ and MAKE_PREDICTIVE_CALL_REQ messages.

Protocol Version 5

The following is a list of additions and changes made to the CTI Server in Protocol Version 5 (ICM Version 4.0).

- Added Peripheral Monitor service and related messages.
- Added a new MonitorID field to all Call and Agent Event messages.
- Added Client Monitor service and related messages.
- Added CallingDeviceType and CallingDeviceID fields to the CALL_SERVICE_INITIATED_EVENT message.
- Increased the maximum number of skill groups from 10 to 20.
- Added AlertRings, CallOption, AuthorizationCode, and AccountCode fields to the CONSULTATION_CALL_REQ, MAKE_CALL_REQ, and TRANSFER_CALL_REQ messages.
- Readded MAKE_PREDICTIVE_CALL_REQ and MAKE_PREDICTIVE_CALL_CONF messages.
- Added new SYS_PERIPHERAL_GATEWAY_OFFLINE System Event ID to the SystemEventID Values table (Table [PeripheralType Values](#)).
- Added new AM_NONE, AM_NONE_NO_MODEM and AM_CONNECT_NO_MODEM AnsweringMachine values to the AnsweringMachine Values table (Table [AnsweringMachine Values](#)).
- ANSWER_CALL_REQ message (Table [SystemEventID Values](#)) revised for peripherals that do not provide alerting call identification.
- Added fields for single step conference to the CONFERENCE_CALL_REQ message:
 - CallPlacementType

- CallMannerType
 - AlertRings
 - CallOption
 - FacilityType
 - Priority
 - PostRoute
 - DialedNumber
 - UserToUserInfo
 - CallVariable1 – CallVariable10
 - CallWrapupData
 - FacilityCode
 - AuthorizationCode
 - AccountCode
- Replaced the AgentInstrument field in the MAKE_PREDICTIVE_CALL_REQ message with the OriginatingDevice field.
 - Added the following new fields to the MAKE_PREDICTIVE_CALL_REQ message:
 - AnswerDetectMode
 - AnswerDetectTime
 - AnswerDetectControl1
 - AnswerDetectControl2
 - DestinationCountry
 - OriginatingLineID
 - PeripheralOnline field added to the OPEN_CONF message.
 - ClientPort field added to the CLIENT_SESSION_OPENED_EVENT and CLIENT_SESSION_CLOSED_EVENT messages.
 - Optional AgentInstrument field added to the CLEAR_CONNECTION_REQ message.
 - AnsweringMachine field added to the CONFERENCE_CALL_REQ and TRANSFER_CALL_REQ messages.
 - Optional AgentInstrument field added to the CONSULTATION_CALL_REQ message.
 - Added the symbolic constant NULL_CALL_ID to the Special Values table (Table [Special Values](#) Special Values).
 - New peripheral types PT_SIEMENS_9005 and PT_ALCATEL added to the PeripheralType Values table (Table [PeripheralType Values](#)).

