



Overview

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The Unified CCX CTI Protocol

The Unified CCX Computer Telephony Integration (CTI) Protocol is a set of rules and message definitions for enabling a client to receive telephony information and control telephony functions through Unified CCX such as making and receiving voice calls and caller identification. The CTI protocol is supported for standard, enhanced, and premium license packages of Unified CCX.

Unified CCX

Unified CCX is an IP-based Automated Call Distribution (ACD) system that queues and distributes incoming calls destined for groups of Cisco Unified Communications Manager or Cisco Unified Communications Manager Express users.

You can use Unified CCX applications to route calls to specific agents. You can also integrate Unified CCX with Unified IP IVR to gather caller data and classify incoming calls. Unified CCX includes a web-based real-time and historical reporting system that you can use to monitor system, Contact Service Queue (CSQ), and resource performance. For more information about Unified CCX, see the Cisco Unified Contact Center Express Administration Guide and other documentation, found on the web at:

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

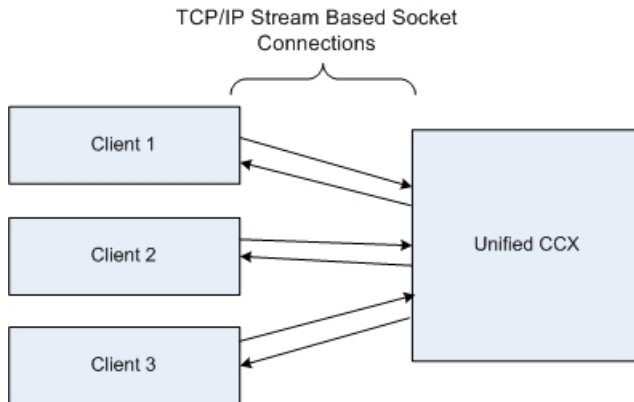
Unified CCX CTI Client/Server Architecture

[Figure 1: General Architecture of a Cisco Unified CCX CTI Client-Server System, on page 2](#) shows the general architecture of a Unified CCX CTI client/server system. It shows one or more CTI clients exchanging

information with a Unified CCX system. Each client is its own separate program. CTI protocol messages are transported on top of TCP/IP protocol. They are stored in the data section of TCP/IP packets.

The Unified CCX CTI system listens on a configurable TCP/IP port for socket connections from CTI clients. After a TCP/IP connection is established between the Unified CCX and a CTI client, hand-shake messages are exchanged between the Unified CCX and the CTI client. If the handshake is successful, a session is opened. When the session is successfully opened between the CTI client and Unified CCX, the client may begin using the full set of Unified CCX CTI features. This is the subject of the rest of this guide.

Figure 1: General Architecture of a Cisco Unified CCX CTI Client-Server System



All Unified CCX CTI messages are received and sent through the CTI server module of the RMCM (Resource Manager- Contact Manager) Subsystem, used for resource distribution and the queuing of calls to call centers. See the *Cisco Unified Contact Center Express Administration Guide* for more information on this.

Uses of the Unified CCX CTI Protocol

The Unified CCX CTI protocol is a message based protocol that allows Unified CCX clients to send and receive information about:

- Current system configuration and future updates.
- Agents and their states
- Calls and their states
- Statistics for agents, calls, and queues
- Third-party call control



Note Not all Unified CCCX configurations support third party call control. For example, Cisco Unified Communications Manager Express does not support this feature.

- Device snapshots

Accordingly, you can create different applications that use the preceding protocol functions. For example:

- A reporting application

If an application developer wants to write a reporting application, the developer may write an Unified CCX CTI client running in the bridge mode to monitor all events related to all agents and agent devices. The application may monitor these agent activities and device states and add business logic based on these activities and states. For example, if a device is down, the application may send a pager or e-mail to notify IT staff for further investigation. The application may also send a notification to a supervisor if an agent state change pattern is out of ordinary.

- An integration application

Agents may use several applications on their desktop. To integrate these applications with Unified CCX, a developer may write a Unified CCX CTI client to get agent information. The integration application may manipulate agent states based on the agent information and information from other applications.

- An agent or supervisor desktop

