



Preface

This section explains the objectives, intended audience, and organization of this publication and describes the conventions that convey instructions and other information.

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Purpose

This document describes the following Cisco Unified Communications Manager (formerly Cisco Unified CallManager) APIs:

- The Cisco Unified Communications Manager AXL implementation allows applications to modify the Cisco Unified Communications Manager system database. Be aware that AXL is not intended as a real-time API but as a provisioning and configuration API.
- Cisco Unified Communications Manager real-time information, performance counters, and database information exposure occur through the AXL Serviceability API.
- The Cisco Unified Communications Manager Extension Mobility Service provides a rich API, which enables extension mobility on IP phones and allows application control over authentication, scheduling, and availability. It allows a device, usually a Cisco Unified IP Phone, to temporarily embody a new device profile, including lines, speed dials, and services. An application that uses the Cisco Unified Communications Manager Extension Mobility Service represents an IP phone service that allows a user to log in by entering a userID and PIN. The architecture and implementation of the Cisco Unified Communications Manager Extension Mobility Service make many other applications possible.

Some examples follow:

- An application that automatically activates phones for employees when they reserve a particular desk for a particular time (the scheduling application).
- A lobby phone does not have a line appearance until a user logs in.
- The Cisco Unified Communications Manager Web Dialer application, which is installed on a Cisco Unified Communications Manager server, enables click-to-dial functionality by creating hyperlinked telephone numbers in a company directory. This functionality allows users to make calls from a web page by clicking the telephone number of the person that they are trying to call. The Web Dialer application, which has a SOAP interface, uses JavaScript to provide the web page functionality.

Audience

The *Cisco Unified Communications Manager Developers Guide* provides information for developers who write applications that extend the functionality of the APIs that are described in this document.

This guide assumes the developer has knowledge of a high-level programming language such as C++, Java, or an equivalent language. You must also have knowledge or experience in the following areas:

- Extensible Markup Language (XML)
- Hypertext Markup Language (HTML)
- Hypertext Transport Protocol (HTTP)
- Simple Object Access Protocol (SOAP) 1.1
- Socket programming
- TCP/IP Protocol
- Web Service Definition Language (WSDL) 1.1
- Secure Sockets Layer (SSL)

In addition, users of the Cisco Unified Communications Manager APIs must have a firm grasp of XML Schema. For more information on XML Schema, refer to <http://www.w3.org/TR/xmlschema-0/>.

The developer must also have an understanding of Cisco Unified Communications Manager and its applications. The [Related Documentation](#) section lists documents on Cisco Unified Communications Manager and other related technologies.

Organization

The following organization applies for this guide.

Table 1 **Organization**

Chapter	Description
Chapter 1, “AXL Configuration Programming”	This chapter describes the Administrative XML Layer (AXL) API, which provides a mechanism for inserting, retrieving, updating, and removing data from the database by using an XML SOAP interface. This API lets you access Cisco Unified Communications Manager data by using XML and receive the data in XML form.
Chapter 2, “AXL Serviceability API Programming”	This chapter describes the AXL Serviceability APIs, which are based on Java Servlets on the Apache Tomcat web server. Cisco Unified Communications Manager real-time information, performance counters, and database information exposure occurs through the AXL Serviceability APIs.
Chapter 3, “Cisco Extension Mobility Service API”	This chapter includes high-level concepts that are important in understanding the Cisco Extension Mobility Service as well as an overview of configuring EM services, messages, message DTDs, and error codes.
Chapter 4, “Cisco Web Dialer API Programming”	This chapter describes the Simple Object Access Protocol (SOAP) and HTML over HTTP (and HTTPS) interfaces that are used to develop JavaScript-based directory search web pages and applications for Cisco Web Dialer.

New and Changed Information

The *Cisco Unified Communications Manager New and Changed Information Guide for Release 6.0(1)* describes new features and or changes that are pertinent to release 6.0 of the Cisco Unified Communications Manager.

See also [New and Changed Information](#) in [Chapter 1, “AXL Configuration Programming.”](#)

Related Documentation

This section lists documents and URLs that provide information on Cisco Unified Communications Manager, Cisco Unified IP Phones, and the technologies that are required to develop applications.

- Cisco Unified Communications Manager Release 6.0—A suite of documents that relate to the installation and configuration of Cisco Unified Communications Manager. Refer to the *Cisco Unified Communications Manager Documentation Guide for Release 6.0* for a list of documents on installing and configuring Cisco Unified Communications Manager 6.0, including

- *Cisco Unified Communications Manager Administration Guide, Release 6.0.*
- *Cisco Unified Communications Manager System Guide, Release 6.0.*
- *Cisco Unified Communications Manager Features and Services Guide, Release 6.0.*
- *Cisco Unified IP Phones and Services*—A suite of documents that relate to the installation and configuration of Cisco Unified IP Phones.
- *Cisco DistributedDirector*—A suite of documents that relate to the installation and configuration of Cisco DistributedDirector.

Related Information

- [Simple Object Access Protocol \(SOAP\) 1.1](#)
- [Web Service Definition Language \(WSDL\) 1.1](#)
- [SOAP Tutorial](#)
- [WSDL Tutorial—Web Service Definition Language tutorial.](#)
- <http://www.soapagent.com/>—Open SOAP directory with links to articles, tutorials, and white papers.

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen</i>	<i>italic screen</i>
→	

Convention	Description
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Non-printing characters, such as passwords, are in angle brackets.



Note

reader take note



Timesaver

the described action saves time



Tip

the following are useful tips.

Cautions use the following conventions:



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Warnings use the following conventions:



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Cisco Product Security Overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: <http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>. If you require further assistance please contact us by sending email to export@cisco.com.