

Cisco Unified Communications Manager Version 8.5 with 8.6

Cisco® Unified Communications Solutions unify voice, video, data, and mobile applications on fixed and mobile networks, enabling easy collaboration every time from any workspace.

Product Overview

Cisco Unified Communications Manager (UCM) is the powerful call-processing component of the Cisco Unified Communications Solution. It is a scalable, distributable, and highly available enterprise call-processing solution.

New with Cisco Unified Communications Manager Version 8.6

Cisco Unified Communications Manager Version 8.6 builds on TCO and video capability of Version 8.5 by enhancing scalability on the core call processing platform, computer telephony integration (CTI), and Trivial File Transfer Protocol (TFTP); bringing in important upgrades to the base OS; and adding support for Windows 7 and 64-bit Windows clients. This release emphasizes unified call control by natively supporting the Cisco TelePresence® System EX60 and EX90 models on Cisco Unified Communications Manager and expanding the feature set on the E20, with some important features such as Binary Floor Control Protocol (BFCP), video encryption, and support for the Cisco TelePresence MCU as an impromptu conferencing resource. Table 1 illustrates the major features that were added to Cisco Unified Communications Manager Version 8.6.

Table 1. New Features on Cisco UCM 8.6

Feature	Benefits
Platform Enhancements	<ul style="list-style-type: none"> OS upgrade to Red Hat Enterprise Linux (RHEL) 5.5 Upgrade process enhancements to support refresh upgrade to accommodate RHEL OS version change SE Linux for replacement of CSA Java Telephony Application Programming Interface (JTAPI) Native x64 Client Cisco Unified Communications client support for Windows 7 x64 Cisco UCM support in VMware on third-party server (HP and IBM)
Scalability	<ul style="list-style-type: none"> Up to 10,000 users per server pair (33% increase) CTI for every user on the cluster Up to 10,000 CTI-enabled users per server pair (100% increase) Increased TFTP scalability Directory scale enhancements ~ 160,000 users
Cisco EnergyWise™ Technology	<ul style="list-style-type: none"> You can configure the phone power save schedule (Cisco UCM) The switch is informed of power consumption for each power save state The power save plus mode switch wakes the phone at a specified schedule New phone models (Cisco Unified IP Phones 9900, 8900, and 6900 models) manually wake phone using the Select key (lit by LED)
Video	<ul style="list-style-type: none"> Session Initiation Protocol (SIP) presentation share (BFCP) SIP video encryption support for 32- and 80-bit encryption negotiation Cisco TelePresence MCU (rendezvous, conference button, and barge) Additional SIP wideband audio codecs (AAC-LATM and G.722.1) Expanded E20 features and more native endpoints - EX60 and EX90 Support for Cisco Integrated Services Routers Generation 2 (ISR G2) Video Conference Bridge

Feature	Benefits
Mobility	<ul style="list-style-type: none"> • Differentiated services code point (DSCP) for telepresence calls • Single registration for Wi-Fi and cellular data for feature consistency • Least cost routing (LCR)-enabled hand-off, using Dial via Office (DVO) for out-calling • Multisite -enabled hand-off: Different Forced Authorization Codes (FAC) at different sites for cost savings • Provisioning enhancements: End-user page enhancements
Hosted Environments	<ul style="list-style-type: none"> • IP Multimedia Subsystem (IMS) integration support • Remote upgrades for monitoring and patching: Upgrade orchestration • Reduced virtual high-definition (HD) footprint • Support for higher CPU oversubscription • IMS P-Charging Vector • IP Multimedia Subsystem ISC compatibility • Dial-plan enhancements • Scriptable voicemail instance cloning
Other Call-Processing Features	<ul style="list-style-type: none"> • Call completion on busy and no answer for analog endpoints through VGXX gateways • Real Time Monitoring Tool Windows 7 support • E20 and Cisco Unified IP Phone 8940 phone interoperability with ISR video • Directory enhancements through Unified Data Sharing Services

New with Cisco Unified Communications Manager Version 8.5

Feature Highlights and Benefits

As collaboration needs evolve, Cisco Unified Communications Manager continues to evolve to meet those needs. Cisco Unified Communications Manager Version 8.5 aims to lower the TCO for organizations and improve the communications experience for end users as well as system administrators. Some of the important features of the recent release follow:

- **Cisco Unified Communications Manager Session Management Edition:** Cisco Unified Communications Manager Session Management Edition support is greatly enhanced in Version 8.5 with features such as Cisco SIP Early Offer and SIP Normalization and Transparency. Cisco Unified Communications Manager Session Management Edition allows for centralized SIP trunking and routing to help simplify complex networks and reduce costs by consolidating trunking. Cisco Unified Communications Manager Session Management Edition can also aggregate voice applications and policy control.
- **HD video interoperability:** Cisco Unified Communications Manager now supports interworking among Cisco clients including IP phones and Client Services Framework (CSF)-based clients, Cisco TelePresence endpoints, and third-party video endpoints. This support is for the H.264 video standard and takes advantage of the Cisco Media Experience Engine. Now Communications Manager supports calls in HD resolutions among those endpoints. **Cisco Cius™ support:** Cisco Unified Communications Manager 7.1(5), 8.5, and later support the Cisco Cius business tablet for mobile collaboration. You can increase productivity for mobile and office workers through access to multiple collaboration applications from Cisco and the Android marketplace.
- **Native mobile unified communications client support:** Cisco Unified Communications Manager 8.5 adds native support for our suite of mobile unified communications clients, allowing customers to greatly simplify mobile unified communications deployments by eliminating the need for mobile proxy servers and directly connect those clients to the Cisco Unified Communications Manager. DVO and LCR enhancements have also been added for mobile unified communications clients in Cisco Unified Communications Manager 8.5. Contact center enhancements and native support for Whisper Coaching and Agent Greeting have been added to Cisco Unified Communications Manager 8.5. Announcement and monitoring triggers are exposed through CTI (J/TAPI) for Cisco and third-party interactive-voice-response (IVR) solutions, enabling the

contact center to use Cisco Unified Communications Manager 8.5 to provide an enhanced, more consistent customer experience while providing better information to agents and supervisors.

- Single Sign On (SSO) for unified communications: Cisco Unified Communications Manager 8.5 extends the utility of SSO solutions into the unified communications environment. An integrated Windows log-in is supported with Communications Manager User Pages, CTI Manager, and CSF-based clients. This open, standards-based implementation of SSO provides a scalable and secure solution to which additional application support will be added in future releases.

Table 2 lists the new features included in Cisco Unified Communications Manager Version 8.5.

Table 2. New Features in Cisco Unified Communications Manager 8.5

Session Management Edition Enhancements
<ul style="list-style-type: none"> • Incremental feature support includes: <ul style="list-style-type: none"> ◦ SIP early offer ◦ Q.SIG support over SIP trunk ◦ SIP Normalization and Transparency ◦ OPTIONS ping ◦ SIP ladder diagrams ◦ Static routing enhancements ◦ Performance enhancements
HD Video Interoperability
<ul style="list-style-type: none"> • HD video (720p/1080p) resolution interworking among Cisco Unified Communications hard phones and clients, Cisco TelePresence endpoints, and third-party HD video endpoints in standard H.264 codec • Native video endpoint support for simplified registration and provisioning including E20 • End-to-end solution testing including Cisco TelePresence Video Communications Server (Cisco VCS) • Support for multiple H.264 payload negotiation for optimal resolution • Support for mid-call video codec parameter changes and consolidation
Serviceability Enhancements
<ul style="list-style-type: none"> • Clarity and consistency of alarm and events • New performance-monitoring counters (external call control, Cisco Service Advertisement Framework (SAF) Client, and Cisco Unified Intelligent Contact Management Enterprise, Cisco Intercompany Media Engine link • Changes in Simple Network Management Protocol (SNMP) MIBs • Administrative XML (AXL) serviceability application-programming-interface (API) cipher support • VMware support
Simplified Administration and Upgrades
<ul style="list-style-type: none"> • User phone add page with default, hidden, and read-only check boxes • Template-based phone add page • Bridged upgrade
RSVP
<ul style="list-style-type: none"> • SIP preconditions: End-to-end Resource Reservation Protocol (RSVP) • Application ID
Extension Mobility Enhancements
<ul style="list-style-type: none"> • Extension Mobility Cross Cluster • Extension Mobility PIN change through phone • Secure HTTP (HTTPS) for phone services, including Extension Mobility and Extension Mobility Cross Cluster
Mobility Features
<ul style="list-style-type: none"> • Dialed Number Identification Services pool of direct-inward-dialing (DID) numbers • LCR policy for DVO R/F • DVO support without Cisco Unified Mobility Advantage • Mobility On/Off with SIP interface • Send Call to Mobile feature for Blackberry

API Enhancements

- External Call Control (ECC) service and Cisco Unified Routing Rules Interface (URRI)
- CTI with hunt list and call pickup
- CTI support for call forward
- AXL enhancements: AXL interface automated to support all the database fields supported by Admin interfaces
- Next-generation Telephony Application Programming Interface (TAPI) and Wave Driver

Telephony Feature Enhancements

- Caller ID on Media Gateway Control Protocol (MGCP) foreign exchange office (FXO)
- Delivery Status Notification (DSN) hotline feature for tactical deployments in the military and government communication-system space
- Unified capabilities requirements for 2007 (UCR2007) private branch exchange 1 (PBX1) requirements as outlined for military and government systems
 - Multilevel precedence and preemption (MLPP) on E1 Primary Rate Interface (PRI) circuits
 - MLPP support services + Cancel call waiting
- HTTPS phone services: Extension Mobility, Extension Mobility Cross Cluster, Cisco IP Manager Assistant (IPMA), Cisco Unified Communications Manager IP Phone Services (Unified MCIP), Cisco Unified Communications Manager Personal Directory, and change credentials
- Secure recording and monitoring
- Annunciator support for SIP phones

Endpoint Support

- HTTP-based downloads - Firmware and configuration
- Support for Cisco Unified IP Phone 6901, 6911, 6921, 6941, and 6961 models
- Support for Cisco Unified IP Phone 8961, 9951, and 9971 models
- Key Expansion Module support
- Dialed number capacity on SIP phones (56 lines for Cisco Unified IP Phone 7902 and 7905 phones)

Video

- USB video camera module

Cisco UCM Infrastructure Enhancements

- Serial Data Input (SDI) trace reduction reduced; improved overall Cisco UCM performance by reducing I/O wait caused by redundant trace
- Updated Cisco Security Agent Version 6.0.1
- AXL enhancements (changes to AXL versioning, partial response, list of APIs improvements, member associations, and schema improvements)
- Tool for Auto-Registered Phones Support (TAPS) support for Linux-based Cisco Unified Contact Center Express (Unified CCX)

Session Management Edition Support

- Continued support for Session Management Edition introduced in Version 7.1(3) with value-add with new Cisco UCM features: Intercompany Media Engine; SAF; and RSVP

PBX Interoperability and Migration

- Parsing of large incoming Q.SIG messages

Directory

- Lightweight Directory Access Protocol (LDAP) filtering: Ability to create multiple, custom LDAP filters that can be assigned to one or more synchronous agreements

Servers

- Cisco Unified Computing System™ (8.5(2)) (Cisco UCS®) B200 M1: Blade server; based on market-leading VMware vSphere 4 (ESXi 4.0)
- Cisco UCS (8.5(2)) C210 M1: 2-rack-unit (2RU) rack server; based on market-leading VMware vSphere 4 (ESXi 4.0)
- Cisco MCS 7800 Series Media Convergence Servers, including the Cisco MCS 7816, MCS 7825, MCS 7828, MCS 7835, and MCS 7845
- Software-only options for both HP and IBM

Product Specifications

Platforms

- Cisco MCS 7800 Series Media Convergence Servers, including the Cisco MCS 7816, MCS 7825, MCS 7828, MCS 7835, and MCS 7845
- Starting with Cisco Unified Communications Manager 8.5(2), Cisco UCS B200 M1 - blade server and Cisco UCS C210 M1 - 2RU rack server; based on market-leading VMware vSphere 4 (ESXi 4.0)

- Selected third-party servers: For details, visit: <http://www.cisco.com/go/swonly>
- Cisco Unified Communications Manager Business Edition: For details, visit: <http://www.cisco.com/en/US/products/ps7273/index.html>

The appliance model provides a platform for call processing with the software preloaded on a Cisco MCS platform; the software is optionally available as a DVD kit for equivalent customer-provided servers. The appliance comes with a single firmware image that includes the underlying operating system as well as the Cisco Unified Communications Manager application. The appliance is accessed through a GUI, and a command-line interface (CLI) has been added to facilitate diagnostics and basic system management, such as the starting or stopping of services and rebooting of the appliance. No access to the underlying operating system is necessary. All system management activities - for example, disk-space monitoring, system monitoring, and upgrades - are controlled through the GUI. Because onboard agents are no longer supported on the appliance, all Cisco Unified Communications Manager management interfaces are enhanced to allow tight integration with third-party applications.

Starting with Cisco Unified Communications Manager 8.5(2), Cisco will support Cisco Unified Communications Manager running on VMware vSphere 4 (ESXi 4.0). This support will allow Cisco UCM to run on the Cisco Unified Computing System platform. Thus Cisco Unified Communications Manager administrators will have more flexibility in how and where they implement Cisco Unified Communications Manager to meet the needs of their enterprise. Initial support will be on the Cisco UCS B200 M1 and UCS C210 M1 platforms.

Additionally, the SNMP interface has added an overall syslog performance MIB. The serviceability interface has instrumented, appliance-specific counters. The programming interface has added the capability to run **insert**, **update**, and **delete** database commands. To further enhance security, Cisco Security Agent for Cisco Unified Communications Manager comes preloaded on the appliance.

Bundled Software

- Cisco Unified Communications Manager Version 8.5, a call-processing and call-control application, is included.
- The Cisco Unified Communications Manager Version 8.5 configuration database contains system and device-configuration information, including the dial plan.
- Cisco Unified Communications Manager administration software is included.
- Cisco Unified Mobility service is included.
- The Cisco Unified Communications Manager CDR Analysis and Reporting Tool (CAR) provides reports for calls based on call detail records (CDRs) that include calls on a user basis, calls through gateways, simplified call quality, and a CDR search mechanism. The tool also provides limited database administration - for example, deletion of records based on database size.
- The Cisco Unified Communications Manager Bulk Administration Tool (BAT) allows administrators to perform bulk insert, delete, and update operations for devices and users. The application was enhanced in Version 6 to provide export and import of database information, including calling search space, device pool, and Cisco Survivable Remote Site Telephony (SRST). Version 8.5 further enhances the solution by adding many other features, among them hunt and pilot lists, CTI route groups, transformation patterns, presence groups, message waiting, and mobility information.
- The Cisco Unified Communications Manager Attendant Console application is no longer bundled nor supported with Cisco Unified Communications Manager.

- The Cisco Unified Communications Manager RTMT monitors real-time behavior of the components in a Cisco Unified Communications Manager cluster. With Cisco Unified Communications Manager 8.5, RTMT functions include Analysis Manager, which allows diagnostic support of Cisco Unified Communications Manager, Cisco Unified Communications Manager Business Edition, Cisco Unified Customer Voice Portal, Cisco Unified Intelligent Contact Management Enterprise, Cisco Unified Contact Center Express, Cisco IOS® Gateway devices and Cisco IOS ACS, Cisco Unified Expert Advisor, and Cisco Unified Contact Center Enterprise. Cisco Unified Communications Manager RTMT uses HTTP and TCP to monitor device status, system performance, device discovery, and CTI applications. It also provides trace and log file-management capabilities, including download scheduling of all trace and log files, user-defined events in trace and log files, and real-time monitoring of trace and log files. You can upload trace files to a Cisco TAC FTP server and save preferences. Cisco Unified Communications Manager RTMT can send email and page alerts when problems are detected. It connects directly to devices by using HTTP for troubleshooting system problems.
- The Cisco Conference Bridge application provides software conference-bridge resources that Cisco Unified Communications Manager can use.
- The Cisco Unified IP Phone Address Book Synchronizer allows you to synchronize Microsoft Outlook or Outlook Express address books with Cisco Personal Address Book. After installing and configuring Cisco Personal Address Book, you can access this feature from the Cisco Unified IP Phone Configuration website.
- The Cisco Unified Communications Manager Locale Installer provides user and network locales for Cisco Unified Communications Manager, adding support for languages other than English. Locales allow you to view translated text, receive country-specific phone tones, and receive TAPS prompts in a chosen language when working with supported interfaces. You can download this application from the Cisco website as needed.
- The Cisco Dialed Number Analyzer is a serviceability tool that analyzes the dialing plan for specific numbers.
- Cisco Unified Communications Manager Assistant provides call-routing and display capabilities required by busy administrative assistants and their managers in a business environment. By combining a PC-based console application and various soft keys and display panes on Cisco Unified IP Phones, Cisco Unified Communications Manager Assistant can offer you job-specific tools to more efficiently manage calls in this environment. This function is also available as an XML service on the phone.
- The Cisco Unified Communications Manager JTAPI plug-in is installed on all computers that host applications that interact with Cisco Unified Communications Manager with the JTAPI. JTAPI reference documentation and sample code are included.
- Cisco Telephony Service Provider contains the Cisco TAPI service provider (TSP) and the Cisco WAV drivers that TAPI applications use to make and receive calls on the Cisco Unified Communications System.

SIP support is available in Cisco Unified Communications Manager with support for line-side devices, including IETF RFC 3261-compliant devices available from Cisco and other manufacturers. Cisco SIP-compliant devices include the Cisco Unified IP Phone 7905G, 7912G, 7940G, and 7960G models. SIP is also available on the Cisco Unified IP Phone 7906G, 7911G, 7931G, 7941G, 7941G-GE, 7942G, 7945G, 7961G, 7961G-GE, 7962G, 7965G, 7970G, 7971G, 7975G, 8961, 9951, and 9971 models, as well as on the Cisco Unified IP Phone Expansion Module 7914 and Cisco Unified IP Color Key Expansion Module.

The SIP trunk interface is available and conforms to RFC 3261, allowing support of video calls over the SIP trunk and improving conferencing and application support experiences when used with Cisco Unity® and Cisco Unified MeetingPlace® solutions.

CAC helps ensure that voice quality of service (QoS) is maintained across constricted WAN links, and it automatically diverts calls to alternate public-switched-telephone-network (PSTN) routes when WAN bandwidth is not available. A web interface to the configuration database allows remote device and system configuration. HTML-based online help is available for users and administrators.

Cisco Unified Communications Manager supports RSVP agent capability. The RSVP agent on a Cisco router extends CAC capability beyond a hub-and-spoke topology within or between clusters. Now a call can be routed directly between two locations in different clusters without having to traverse the hub, allowing alternative network topologies and more efficient use of networks. RSVP now supports application ID, which associates RSVP reservation with a specific application and sub-application. Initially voice and video are supported.

SNMP is available to manage Cisco Unified Communications Manager, allowing managers to set and report traps on conditions that could affect service and send them to remote-monitoring systems.

System Capabilities Summary

- Alternate automatic routing (AAR)
- Analysis Manager: Capabilities are listed in Table 1; Analysis Manager supports the following products:
 - Cisco Unified Communications Manager
 - Cisco Unified Communications Manager Business Edition
 - Cisco Unified Customer Voice Portal
 - Cisco Unified Intelligent Contact Management Enterprise
 - Cisco Unified Contact Center Express
 - Cisco IOS Gateway devices and Cisco IOS ACS
 - Cisco Unified Expert Advisor
 - Cisco Unified Contact Center Enterprise
- Annunciator support for Skinny Client Control Protocol (SCCP) and SIP
- Audio message-waiting indicator (AMWI)
- Automated bandwidth selection
- Automatic route selection (ARS)
- AXL Simple Object Access Protocol (SOAP) API with performance and real-time information
- Basic Rate Interface (BRI) endpoint support: Registers BRI endpoints as SCCP devices
- CAC
 - Static modeling using locations-based Call Admission Control
 - Dynamic admission control using RSVP intercluster and intracluster Application ID for voice and video CAC differentiation
- Call coverage
 - Forwarding based on internal and external calls
 - Forwarding out of a coverage path

- Timer for maximum time in coverage path
- Time of day
- Call display restrictions
- Call preservation - redundancy and automated failover - on call-processing failure
- Call recording for encrypted and nonencrypted calls
- Codec support for automated bandwidth selection: G.711 (mu-law and a-law), G.722, G.722.1, G.723.1, G.728, G.729A/B, Global System for Mobile-Enhanced Full Rate (GSM-EFR), Global System for Mobile-Full Rate (GSM-FR) Internet Low Bitrate Codec (iLBC), iSAC, wideband audio (proprietary 16-bit resolution; 16-kHz sampled audio), and Advanced Audio codec (AAC) for use with Cisco TelePresence devices
- Digit analysis and call treatment (digit-string insertion, deletion, stripping, dial access codes, digit-string translation, and dial-pattern transformation)
- Database resiliency to increase feature availability for the following:
 - Extension Mobility
 - Call forward all
 - MWI
 - Privacy
 - Device mobility
 - Do not disturb
 - End-user and Application User Certificate Authority Proxy Function (CAPF) for CTI
 - Monitoring
 - Hunt groups
- Device mobility changes in the location-specific information when a device moves within the cluster
- Dial-plan partitioning
- Distributed call processing
 - Deployment of devices and applications across an IP network
 - Virtual clusters of up to eight Cisco Unified Communications Manager servers for scalability, redundancy, and load balancing
 - Maximum of 7500 Cisco Unified IP Phones per Cisco Unified Communications Manager server and 30,000 per server cluster (configuration dependent)
 - Maximum of 100,000 busy-hour call completions (BHCCs) per Cisco Unified Communications Manager server and 250,000 per server cluster (configuration dependent)
 - Intercluster scalability to more than 100 sites or clusters through H.323 gatekeeper
 - Intracluster feature and management transparency
- Divert calls to voicemail (iDivert)
- External Call Control, which provides an API (Routing Rules Interface) that allows routing decisions to be made outside of Cisco Unified Communications Manager
- Fax over IP: G.711 pass-through and Cisco Fax Relay
- Forced authorization codes and client matter codes (account codes)

- H.323 interface to selected devices
- H.323 FastStart (inbound and outbound)
- Hotline and private-line automated ringdown (PLAR)
- Hunt groups: broadcast; circular; longest idle; and linear, login, and logout
- Cisco Intercompany Media Engine support for intercompany business-to-business communication
- Interface-to-H.323 gatekeeper for scalability, CAC, and redundancy
- IPv4
- Language support for client-user interfaces (languages specified separately)
- Multilocation: Dial-plan partition
- Multiple ISDN protocol support
- Multiple remote Cisco Unified Communications Manager platform administration and debug utilities
 - Prepackaged alerts, monitor views, and historical reports with RTMT
 - Real-time and historical application performance monitoring through operating system tools and SNMP
 - Monitored data-collection service
 - Remote terminal service for off-net system monitoring and alerting
 - Real-time event monitoring and presentation to common syslog
 - Trace setting and collection utility
 - Browse to onboard device statistics
 - Clusterwide trace-setting tool
 - Trace collection tool
- Multisite (cross-WAN) capability with intersite CAC
- Off-premises extension (OPX)
- Outbound call blocking
- Out-of-band dual-tone multifrequency (DTMF)
- Programmable line keys
- PSTN failover on route no availability: AAR
- Q.SIG
 - Alerting name specified in ISO 13868 as part of the Connected Name Identification Presentation (SS-CONP)
 - Basic call
 - ID services
 - General function procedures
 - Call back: ISO/IEC 13870: 2nd Edition, 2001-07 (completion of calls to busy subscriber [CCBS] and call completion on no reply [CCNR])
 - Call diversion: SS-CFB (busy), SS-CFNR (no answer), and SS-CFU (unconditional); service ISO/IEC 13872 and ISO/IEC 13873, first edition 1995 - call diversion by forward switching and by rerouting
 - Call transfer by join

- H.323 Annex M.1 (Q.SIG over H.323) - ITU recommendation for Annex M.1
- Identification restriction (Calling Name Identification Restriction [CNIR], Connected Line Identification Restriction [COLR], and Connected Name Identification Restriction [CONR])
- Loop prevention, diversion counter and reason, loop detection, diverted-to number, diverting number, original called name and number, original diversion reason, and redirecting name
- MWI
- Path replacement ISO/IEC 13863: 2nd Ed. 1998, and ISO/IEC 13974: 2nd Ed. 1999
- Station through trunk (MGCP gateways)
 - JTAPI and TAPI applications enabled with automated failover and automatic update
 - Triple Cisco Unified Communications Manager redundancy per device (phones, gateway, and applications) with automated failover and recovery
 - Trunk groups
 - MGCP BRI support (ETSI BRI basic-net3 user-side only)
- Security
 - Secure conferencing is available to all members of the conference
 - Configurable operation modes: Nonsecure or secure modes can be configured
 - Device authentication: New model phones have an embedded X.509v3 certificate; a CAPF is used to install a locally significant certificate in the phones
 - Data integrity: The Transport Layer Security (TLS) cipher NULL-SHA is supported; messages are appended with the SHA1 hash of the message to help ensure that they are not altered on the wire and can be trusted
 - Cisco Unified Communications Manager offers secure HTTP support for Cisco Unified Communications Manager Administration, Cisco Unified Communications Manager Serviceability, Cisco Unified Communications Manager User Pages, and Cisco Unified Communications Manager CDR Analysis and Reporting Tool
 - Privacy: Signaling and media are encrypted, including Cisco Unified IP Phone 7906G, 7911G, 7921G, 7940G, 7931G, 7941G, 7941G-GE, 7942G, 7945G, 7960G, 7961G, 7961G-GE, 7962G, 7965G, 7970G, 7971G, and 7975G models; Cisco Unified SRST; and MGCP gateways
 - Secure Sockets Layer (SSL) for directory: Supported applications include Cisco Unified Communications Manager Bulk Administration Tool (BAT), Cisco Unified Communications Manager CDR Analysis and Reporting Tool, Cisco Unified Communications Manager Admin User Pages, Cisco Unified Communications Manager Assistant Admin Pages, Cisco Unified IP Phone Options Pages, Cisco Conference Connection, Cisco CTI Manager, Cisco Unified Communications Manager Extension Mobility, and Cisco Unified Communications Manager Assistant
 - A USB eToken containing a Cisco rooted X.509v3 certificate is used to generate a Certificate of Trust List (CTL) file for the phones and to configure the security mode of the cluster
 - Phone security: TFTP files (configuration and firmware loads) are signed with the self-signed certificate of the TFTP server; the Cisco Unified Communications Manager system administrator can disable HTTP and Telnet on IP phones
 - SIP trunk (RFC 3261) and line side (RFC 3261-based services) are supported

- Cisco Unified SRST is supported
- Service Advertisement Framework - Call Control Discovery
- Shared resource and application management and configuration
 - Transcoder resource
 - Conference bridge resource
 - Topological association of shared resource devices (conference bridge, music-on-hold [MoH] sources, and transcoders)
 - Media termination point (MTP): Support for SIP trunk and RFC 2833
 - Annunciator
- Silence suppression and voice activity detection (VAD)
- Silent monitoring
- Simplified North American Numbering Plan (NANP) and non-NANP support
- SIP routing (centralized) with Session Management Edition
- SIP trunk Call Admission Control (SIP CAC)
- T.38 fax support (H.323, MGCP, and SIP)
- Third-party applications support
 - Broadcast paging: Through foreign exchange station (FXS)
 - Simple Messaging Desktop Interface (SMDI) for MWI
 - Hook-flash feature support on selected FXS gateways
 - TSP 2.1
- Support for hunt lists, call pickup, and call forward
 - JTAPI 2.0 service provider interface
- Support for hunt lists, call pickup, and call forward
 - Billing and call statistics
 - Configuration database API (Cisco AXL)
- Time-of-day, day-of-week, and day-of-year routing and restrictions
- Toll restriction: Dial-plan partition
- Toll-fraud prevention
 - Prevent trunk-to-trunk transfer
 - Drop conference call when originator hangs up
 - Require forced-authorization codes
- Unified device and system configuration
- Unified dial plan
- Video codecs: H.261, H.263, H.264, and Cisco Wideband Video Codec (Cisco Unified Video Advantage)
- Video telephony (SCCP, H.323, and SIP)

Summary of User Features

Note: Asterisks (*) in this list indicate SIP support for Cisco Unified Communications Manager 7.0.

- *Abbreviated dial
- *Answer and answer release
- *Auto answer and intercom
- *Callback busy and no reply to station
- *Call connection
- *Call coverage
- *Call forward: All (off net and on net), busy, no answer, no bandwidth, and not registered
- *Call hold and retrieve
- Call join
- *Call park and pickup
- *Call pickup group: Universal
- *Call pickup notification (audible or visual)
- *Call status per line (state, duration, and number)
- *Call waiting and retrieve (with configurable audible alerting)
- *Calling line identification (CLID) and calling party name identification (CNID)
- Calling line identification restriction (CLIR) call by call
- *Conference barge
- *Conference chaining
- *Conference list and drop any party (impromptu conference)
- *Dialed-number display
- *Direct inward dialing (DID) and direct outward dialing (DOD)
- *Directed call park with busy lamp field (BLF)
- *Directory dial from phone: Corporate and personal
- *Directories: Missed, placed, and received calls list stored on selected IP phones
- *Distinctive ring for on- and off-net status, per-line appearance, and per phone
- *Do not disturb (do not ring and call reject)
- *Drop last conference party (impromptu conferences)
- *Extension Mobility
- *Extension Mobility Cross Cluster
- *Extension Mobility PIN change from phone
- *Hands-free, full-duplex speakerphone
- *HTML help access from phone
- *HTTPS for phone services; for example, Extension Mobility
- *Hold reversion

- *Immediate divert to voicemail
- *Intercom with whisper
- *Join across lines
- *Last-number redial (on and off net)
- *Log in and log out of hunt groups
- Malicious-caller ID and trace
- *Manager-assistant service (Cisco Unified Communications Manager Assistant application) proxy line support
 - Manager features: Immediate divert or transfer, do not disturb, divert all calls, call intercept, call filtering on CLID, intercom, and speed dials
 - Assistant features: Intercom, immediate divert or transfer, divert all calls, and manager call handling through assistant console application
- *Manager-assistant service (Cisco Unified Communications Manager Assistant application) shared-line support
 - Manager features: Immediate divert or transfer, do not disturb, intercom, speed dials, barge, direct transfer, and join
 - Assistant features: Handle calls for managers; view manager status and calls; create speed dials for frequently used numbers; search for people in directory; handle calls on their own lines; immediate divert or transfer, intercom, barge, privacy, multiple calls per line, direct transfer, and join; send DTMF digits from console; and determine MWI status of manager phone
- *Manager-assistant service (Cisco Unified Communications Manager Assistant application) system capabilities: Multiple managers per assistant (up to 33 lines) and redundant service
- *Manager-assistant service now available on a Cisco Unified IP Phone with Cisco Unified Communications Manager 6.0
- *MWI (visual and audio)
- *Multiparty conference: Impromptu with add-on meet-me features
- *Multiple calls per line appearance
- *Multiple line appearances per phone
- *MoH
- *Mute capability from speakerphone and handset
- *On-hook dialing
- *Original calling party information on transfer from voicemail
- *Privacy
- *Real-time QoS statistics through HTTP browser to phone
- *Recent dial list: Calls to phone, calls from phone, autodial, and edit dial
- *Service URL: Single-button access to IP phone service
- *Single-button barge
- *Single-directory number and multiple phones: Bridged line appearances
- *Speed dial: Multiple speed dials per phone

- *Station volume controls (audio and ringer)
- *Transfer: Blind, consultative, and direct transfer of two parties on a line
- *User-configured speed dial and call forward through web access
- *Video (SCCP, H.323, and SIP)
- VPN client on IP Phone
- *Web services access from phone
- *Web dialer: Click to dial
- *Wideband audio codec support: Proprietary 16-bit resolution; 16-kHz sampling rate codec

Cisco Unified Mobility

The Cisco Unified Mobility service helps mobile workers direct their inbound business calls to their IP phone number and initiate outbound business calls as if they were at their Cisco Unified IP phone - all from their mobile phone (or other remote phone destination). They can answer incoming calls on the desk phone or mobile phone, pick up calls between the desk phone and mobile phone without losing the connection, and originate enterprise calls from a mobile or other remote phone. Cisco Unified Mobility is included in Cisco Unified Communications Manager 8.5 and provides the following features:

- Allowed and blocked call filters
- Caller identification
- Call screening and call divert
- Call tracing
- Cisco Mobile Voice access
- Desktop pickup
 - Pick up through DTMF in 8.5
 - Pick up calls directly to mobile phone
- Directed call park through DTMF
- Mobile call pickup
- New mobility device model type
- Remote on and off control
- Reverse callback to nonmobile number
- Security and privacy for Cisco Unified Mobility calls
- Single enterprise voice mailbox
- Simultaneous desktop ringing
- System administrator-controllable user profile access
- Voice-based access with user identification and personal identification number protection

Summary of Administrative Features

- Application discovery and registration to SNMP manager
- AXL SOAP API with performance and real-time information
- Cisco Unified Communications Manager BAT (including new import and export capabilities)
- Call detail records (CDRs)
- Cisco Unified Communications Manager CDR Analysis and Reporting Tool
- Call-forward reason-code delivery
- Centralized, replicated configuration database and distributed web-based management reports
- Configurable and default ringer WAV files per phone
- Configurable call-forward display
- Database automated change notification
- Date and time display format configurable per phone
- Debug information to common syslog file
- Device addition through wizards
- Device-downloadable feature upgrades: Phones, hardware transcoder resource, hardware conference bridge resource, and voice-over-IP (VoIP) gateway resource
- Device groups and pools for large-system management
- Device mapping tool: IP address to MAC address
- Dynamic Host Configuration Protocol (DHCP) block IP assignment: Phones and gateways
- Dialed Number Analyzer (DNA)
- Dialed-number translation table (inbound and outbound translation)
- Dialed-number identification service (DNIS)
- Enhanced 911 service
- H.323-compliant interface to H.323 clients, gateways, and gatekeepers
- JTAPI 2.0 CTI
- LDAP Version 3 directory interface to selected vendors' LDAP directories: Active Directory and Netscape Directory Server
 - LDAP filtering: Ability to create multiple, custom LDAP filters that can be assigned to one or more synchronization agreements
- MGCP signaling and control to selected Cisco VoIP gateways
 - Caller ID for PRI and FXO
- Native supplementary services support to Cisco H.323 gateways
- Paperless phone DNIS: Display-directed button labels on phones
- Performance-monitoring SNMP statistics from applications to SNMP manager or to operating system performance monitor
- QoS statistics recorded per call
- Redirected DNIS (RDNIS) inbound and outbound (to H.323 devices)

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- Select specified line appearance to ring
 - Ability to select specified phone to ring
 - Single CDR per cluster
 - Single-point system and device configuration
 - Sortable component inventory list by device, user, or line
 - System event reporting to common syslog or operating system event viewer
 - TAPI 2.1 CTI
 - Time zone-configurable per phone
 - Cisco Unity software user integration
 - TAPS
 - XML API for IP phones
 - Zero-cost automated phone moves
 - Zero-cost phone adds
 - Data migration assistant
 - Log partition monitor
 - Disaster-recovery framework
 - Cisco Security Agent for Cisco Unified Communications Manager
 - IP Security (IPsec) and certificate management
 - CDR delivery manager
 - CLI
 - Enhanced remote access through serial, console, and Secure Shell (SSH) Protocol
 - Scheduled provisioning with Cisco Unified Communications Manager BAT
 - Scheduled trace collection
 - User-defined events
 - Real-time trace monitoring
 - Enhanced upgrade process to minimize service downtime
 - Enhanced upgrade process to allow upgrades when old hardware is not compatible with new release
 - Enhanced installation process to minimize install time
 - Installation answer file for no-touch installation
 - Syslog-to-SNMP trap MIB
 - Enhanced AXL SOAP API to modify the database

SIP Trunk and Endpoint Support

SIP trunk and endpoint support provides enhancements to support SIP and host SIP phones, improving interoperability and opening ways to develop innovative applications. Cisco Unified Communications Manager supports coexistence of SCCP and SIP phones, allowing migration to SIP while protecting investments in existing devices. Cisco Unified Communications Manager includes the following major SIP functions:

- Native support of SIP devices
- CTI for Internet-service-provider (ISP) phones
- Presence information for SIP devices, including support for PUBLISH
- Fault, configuration, accounting, performance, and security (FCAPS) enhancements to support SIP
- SIP trunk enhancements for external applications, such as conferencing and presence
- Third-party SIP devices supporting RFC 3261
- SIP line-side RFCs: RFCs 3261, 3262, 3264, 3265, 3311, 3515, and 3842
- SIP trunk RFC support: RFCs 2833, 2976, 3261, 3262, 3264, 3265, 3311, 3323, 3325, 3515, 3842, 3856, and 3891

Licensing

Application and phone software licenses are enforced. The system manages the maximum number of devices that can be provisioned.

- Each device (Cisco Unified IP Phones, soft phones, third-party devices, and video devices) provisioned in the system corresponds to a number of device license units (DLUs), depending on its capabilities. The total number of units is managed in Cisco Unified Communications Manager to determine capacity.
- DLUs must be purchased to cover the number of devices connected to Cisco Unified Communications Manager.
- Third-party SIP devices require DLUs for operation with Cisco Unified Communications Manager.

Cisco Unified Workspace Licensing

This product is a part of Cisco Unified Workspace Licensing (UWL). Please visit

http://www.cisco.com/go/workspace_licensing for more information and to determine whether Cisco Unified Workspace Licensing is appropriate for your customer.

Localization

The following user locales (languages) are supported: Arabic, Bulgarian, Catalan, Chinese (Hong Kong), Chinese (simplified), Chinese (traditional), Croatian, Czechoslovakian, Danish, Dutch, Estonian, Finnish, French, French (Canadian), German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Spanish (Latin American), Swedish, Thai, and Turkish.

The following network locales (tones and cadences) are supported: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Colombia, Cyprus, Czech Republic, Denmark, Egypt, Finland, France, Germany, Ghana, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kenya, Korea Republic, Lebanon, Luxembourg, Malaysia, Mexico, Nepal, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Russian Federation, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, United States, Venezuela, and Zimbabwe.

Ordering Information

Software Upgrades

You can order Cisco Unified Communications Manager 8.5 installation CDs and DVDs for existing systems.

Customers with a Cisco Unified Communications Software Subscription running Cisco Unified Communications Manager 4.1 to 7.0 who want to upgrade to Cisco Unified Communications Manager 8.5 can order upgrades using the Product Upgrade Tool located at: <http://www.cisco.com/upgrade>.

If you are planning an upgrade to Cisco Unified Communications Manager Version 8.5, please refer to the upgrade program for supported servers at: <http://www.cisco.com/go/swonly>.

Hard disk capacity of 72 GB or greater and 2 GB of RAM are required.

Cisco Unified Communications Services

Cisco Unified Communications Services allows you to accelerate cost savings and productivity gains associated with deploying a secure, resilient Cisco Unified Communications Solution. Delivered by Cisco and our certified partners, our portfolio of services is based on proven methodologies for unifying voice, video, data, and mobile applications on fixed and mobile networks. Our unique lifecycle approach to services can enhance your technology experience to accelerate true business advantage.

For More Information

For more information about Cisco Unified Communications Manager, please visit <http://www.cisco.com/go/unifiedcm> or contact your local Cisco account representative.



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