

## Cisco Unified Operations Manager 8.5

### **Q. What is Cisco® Unified Operations Manager (UOM)?**

#### **A. Overview:**

Cisco Unified Operations Manager is part of the Cisco Unified Communications (UC) Management Suite. It provides comprehensive monitoring for the entire Cisco Unified Communications system, including the underlying transport infrastructure. It discovers the UC network from a phone perspective and creates a phone layer view of all the UC components, ignoring devices that are not part of the UC network. Cisco Unified Operations Manager provides a real-time view of the Cisco Unified Communications system and presents the current operational status of each element. It also provides extensive capabilities for application-level testing of telephony functions that can be used in real time or scheduled to identify problems to help ensure that the phones and their supporting applications are functioning correctly.

#### Details:

- Monitors and evaluates the current operational status of all the key components of the Cisco Unified Communications system, including the underlying transport infrastructure.
- Presents the current operational status of the Cisco Unified Communications system through the fault monitor, diagnostic, and cluster-level connectivity views of the network and provides contextual tools to look at the current alert status, historical information, and service impact of any outages.
- Increases productivity of network managers and facilitates faster trouble isolation by providing contextual diagnostic tools to help enable rapid troubleshooting and fault isolation:
  - Through diagnostic tests, performance, and connectivity details about elements of the Cisco Unified Communications system.
  - Through use of synthetic tests that replicate end-user activity and verify gateway availability as well as other configuration aspects of the Cisco Unified Communications infrastructure. Tests may be run on synthetic phones or real IP phones (both Session Initiation Protocol [SIP]-based and Skinny Client Control Protocol [SCCP]-based phones) deployed in the network.
  - Through Cisco IOS® IP Service-Level Agreement (SLA)-based diagnostic tests that can be used to troubleshoot network-related issues, determine paths, and proactively monitor voice quality across WAN links.
  - By providing actionable information in notification messages through context-sensitive links to more detailed information about service outages.
  - By context-sensitive links to CiscoWorks products to provide the user with a broad and deep array of infrastructure device-level visual and diagnostic capabilities.
- Provides a very powerful set of dynamic phone-testing capabilities that use IP phones (both SIP- and SCCP-based phones) in the Cisco Unified Communications system as test probes to run dial-plan tests, acceptance tests, phone-feature tests, and more. These phone-testing capabilities can be used to rapidly troubleshoot issues related to connectivity (signaling/media stream) and voice quality as well as call processing/dial-plan management issues.

- Provides visibility into key performance metrics of Cisco Unified Communications elements, such as resource usage (CPU, memory, Media Termination Point [MTP] resources, transcoder resources), call statistics (active calls), trunk statistics (trunk usage, port usage, gateway statistics) that aid in tasks such as troubleshooting and capacity planning.
- Presents voice-quality alerts from information delivered by Cisco Unified Service Monitor (USM) when the latter is deployed.
- Provides current information about connectivity and registration-related outages affecting IP phones in the network and provides additional contextual information to facilitate the location and identification of the IP phones.
- Facilitates tracking of Cisco Unified Communications devices and IP phone inventory, tracks IP phone status changes, and creates a variety of reports that document move, add, and change operations on IP phones in the network.
- Provides extensive northbound real-time notifications, using Simple Network Management Protocol (SNMP) traps, email, and syslog notifications that facilitate integration with a higher-level entity (typically a manager of managers). The email notifications contain context-sensitive links that let network managers quickly determine the nature of the outage and rapidly troubleshoot the problem.
- Cisco Unified Operations Manager also features phone-based diagnostic testing using real IP phones for phone-feature validation.
- Cisco Unified Operations Manager can use Cisco Unified Service Monitor to monitor and provide alerts on voice-quality issues detected by the Cisco Voice Transmission Quality (VTQ) metric that is available in the newer generations of phones (Cisco Unified IP Phone 7921, 7931, 7941, 7961, and 7971 and later) when used in Cisco Unified Communications Manager 4.2 and later deployments.

**Q. What's new in Cisco Unified Operations Manager 8.5?**

**A.** Cisco Unified Operations Manager 8.5 is a minor release and adds support for Unified Communications 8.5. It also provides new features:

- SIP trunk utilization
- Route group utilization
  - Inbound and outbound utilization and call volume report
  - Drill down into individual gateway inbound and outbound utilization and call volume report
- Digital signal processor (DSP) failure detection
- Reasoning IP phone outage for scenarios such as
  - Transition from/to Deep Sleep mode (EnergyWise)
  - Status change due to Device Unregistered, Extension Mobility login or logout
- Performance dashboard
  - New graphic chart display format
  - Select a start and stop for a report period
  - Export performance metrics into comma-separated value (CSV) format
- Network Address Translation (NAT) support
- 1vCPU CPU and 3 GB RAM for 500 and 1000 phone installation for standalone UOM and UOM/USM coresident
- Voice Mail Diagnostic View

**Q. What devices does Cisco Unified Operations Manager 8.5 support?**

- A.** Cisco Unified Operations Manager 8.5 supports all the devices that were supported in UOM 8.0. It continues its industry-leading support for Cisco Unified Communications devices by adding support for newly released Cisco products.

Support for components of the Unified Communications 8.5 solution includes:

- Cisco Unified Communications Manager 8.5
- Cisco Unified Communications Manager Session Management Edition 8.5
- Cisco Unified Communications Manager Business Edition 8.5
- Cisco Emergency Responder 8.5
- Cisco Unity Connection 8.5
- Cisco Unified Contact Center Enterprise 8.5
- Cisco Unified Contact Center Express 8.5
- Cisco Unified Presence 8.5
- Cisco Unified Personal Communicator 8.5
- Cisco Unified Communications Manager Express 8.5
- Cisco Unity Express 8.5
- Cisco Unified Border Element 1.4 and later - enhanced
  - Added support to monitor MTP and Transcoder Sessions usage
  - SIP trunk utilization (call volume)
  - Usage graphs supported
- Cisco Unified Expert Advisor 8.5
- Cisco Hosted Collaboration Solution 8.0.1
- Cisco Unified Communications on Cisco Unified Computing System (UCS), support for monitoring of the UCS server
  - Unity Connection on UCS - UC application only
  - Cisco Unified Contact Center Enterprise on UCS - UC application only
  - Cisco Unified Customer Voice Portal (CVP) on UCS - UC application only

Refer to the Cisco Unified Operations Manager 8.5 Supported Devices Table at

[http://www.cisco.com/en/US/products/ps6535/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/ps6535/products_device_support_tables_list.html) or to the Cisco Unified Operations Manager 8.5 Release Notes at

[http://www.cisco.com/en/US/products/ps6535/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html) for a complete list.

**Q. Does Cisco Unified Operations Manager monitor Unified Communications applications running on the Cisco Unified Computing System?**

- A.** Yes, Cisco Unified Operations Manager monitors Cisco Unified Communications Manager 8.5 and Cisco Unity Connection 8.5 running on the UCS B-series and C-series blade server. Unity Connection, Contact Center Enterprise Edition, and Cisco Voice Portal on UCS are now supported, but only the UC application and not the UCS statistics.

**Q. Does Cisco Unified Operations Manager use any agents?**

- A.** No, Cisco Unified Operations Manager does not require any additional agent software on Cisco monitored devices or the operator workstation, making initial setup simple. It uses standard interfaces such as SNMP, HTTP, and Windows Management Instrumentation (WMI) to receive events and statistics and will periodically poll the devices for additional status information. The user client uses Internet Explorer 7.x, 8.x, and Firefox 3.6 to allow users to log in from anywhere in the network, providing easy access to real-time information on the current status of the devices.

**Q. How is Cisco Unified Operations Manager different from other products that manage Cisco Unified Communications deployments?**

- A.** Cisco Unified Operations Manager is part of the new industry-leading Cisco Unified Communications Management Suite. It is differentiated from other management system vendors' products that manage Cisco Unified Communications deployments because it comes with the Cisco commitment to quality and 24-hour support and combines all of the following capabilities into a comprehensive management package:
- Extensive coverage of Cisco Unified Communications devices as well as the underlying transport infrastructure
  - Support for the latest Unified Communications versions in a timely fashion, thanks to parallel development and testing
  - Cluster service-level views of the Cisco Unified Communications system, with current status information about all monitored elements
  - Context-sensitive tools that can be launched from different user interfaces to aid in trouble isolation and resolution
  - Diagnostic tests that can replicate end-user activities, validate phone features, and proactively test dial-plan configuration by way of making phone calls, leaving voicemail, and so on
  - Use of open interfaces such as SNMP and HTTP to remotely and periodically poll devices without the need for additional agent software
  - Real-time voice-quality monitoring by using Cisco Unified Service Monitor with a combination of Cisco 1040 Sensors, Network Analysis Module (NAM), or the VTQ metric that's available from Cisco Unified Communications Manager 4.2 and higher call-detail records
  - Phone and video-enabled IP phone reports with extensive information such as IP/MAC addresses, physical connectivity information, and signaling status
  - IP Phone Activity Report presents phone movement, MAC/IP address conflict, extension change, and suspicious phones on the network. Option exists to email all these reports daily
  - IP Phone Audit Report records an audit trail of IP phone add, remove, and status change operations and maintains this information for a period of up to 30 days
- What IP transport elements does Cisco Unified Operations Manager monitor?

Cisco Unified Operations Manager monitors the devices in the voice signal path, such as routers, Ethernet switches, gateways, and gatekeepers.

**Q. What are some of the benefits of the phone-based diagnostic tests? How can they be used to monitor the availability of the network?**

**A.** Cisco Unified Operations Manager includes the ability to dynamically test phones and help ensure that the Cisco Unified Communications deployment is functioning smoothly. Phone testing lets network managers dynamically test the behavior and features of real IP phones deployed in the network without needing any form of physical access. This lets them rapidly troubleshoot problems experienced by real users in the network and drastically improve time to address these issues. Such phone-based diagnostic tests may be used in several scenarios, such as site-validation tests, dial-plan tests, and site-to-site call-reachability tests.

- **Site-validation tests:** As network managers implement solutions based on Cisco Unified Communications at new sites, there is a need to test every single phone for its registration status, dial tone, calling restrictions, and features (call hold, call transfer, call park, voicemail access, and so on) before going live at that site. The phone-based diagnostic tests let network managers do exactly that by automating the entire test plan. A simple, easy-to-read set of results is made available with the status of each of these tests, which may be further fed into reporting structures to facilitate operational and executive reporting.
- **Dial-plan tests:** As Cisco Unified Communications deployments grow in size and complexity, dial-plan changes and their impact on subscribers become more and more important. As applications that support Cisco Unified Communications system (Cisco Unified Communications Manager, Cisco Unity systems, and so on) get upgraded, patched, or reconfigured to add or modify their configuration or dial plans, it becomes very important that there are no side effects of these changes on subscribers affecting their dial-tone access, calling restrictions, or phone features. The phone-based diagnostic tests let network managers test each of these aspects by creating a test plan and scheduling its execution. A simple, easy-to-read set of results is made available with the status of each of these tests, which may be further fed into reporting structures to facilitate operational and executive reporting.
- **Site-to-site reachability:** As a part of ongoing monitoring and troubleshooting of Cisco Unified Communications deployments, network managers frequently need to test the ability to place and receive calls between remote sites, test for voice-quality issues, and test for basic signaling reachability. The phone-based diagnostic tests let network managers test each of these aspects by creating a test plan and scheduling its execution. Cisco Unified Operations Manager displays a simple, easy-to-read result set, which users may export for external reporting.

**Q. Can Cisco Unified Operations Manager be used for IP phone inventory tracking? If so, how?**

**A.** Yes, Cisco Unified Operations Manager can be used for IP phone tracking. It provides a set of reports that show phone status and phone status change information. The Phone Move Report captures physical movements and failovers while the Phone Audit Report captures state changes, all documented with time stamps. These reports document moves, adds, and changes and support both SIP- and SCCP-based IP phones.

**Q. How can Cisco Unified Operations Manager monitor my Cisco Unified Communications system?**

**A.** Cisco Unified Operations Manager uses a seed device as a starting point, discovers the entire Cisco Unified Communications network using the Cisco Discovery Protocol, and creates a service-level topological view of the entire deployment. Depending on the type of device, Cisco Unified Operations Manager actively monitors operating conditions using Internet Control Message Protocol (ICMP) polling, HTTP-based polling, SCCP-based synthetic tests, WMI-based data collection, SNMP MIB interrogation, and SNMP trap reception. It tracks only those conditions known to cause higher-level problems in that particular device. If Cisco Unified Operations Manager receives information from the device and that information is not a known condition of a higher-level problem, it ignores the information, minimizing the need for IT managers to look at every event happening on the network. This helps IT managers to more productively manage Cisco device faults. Cisco Unified Operations Manager also carries out diagnostic tests that ascertain the current operational status of the Cisco Unified Communications network and reports on problems it encounters. Whenever a diagnostic test fails, an alert is

generated that informs a network operator of potential service problems. The alerts are shown on real-time displays in the Alerts Console and the service-level views. It is also possible to forward filtered Cisco Unified Operations Manager alerts to other management tools using SNMP traps, syslog messages, and email.

**Q. How is Cisco Unified Operations Manager packaged?**

- A.** Cisco Unified Operations Manager, Cisco Unified Service Monitor, and the underlying CiscoWorks Common Services Software are on a single software image. A single installation procedure installs all three components on the server. Service Monitor is enabled once the Service Monitor license is purchased and installed.

**Q. How do I order Cisco Unified Operations Manager?**

- A.** Cisco Unified Operations Manager 8.5 can be licensed for the deployment scale required. Deployment scale is controlled with a license file so network administrators can increase the number of phones supported by adding to the license file as their Cisco Unified Communications deployment grows, without disruption. Expansion is accomplished by purchasing additional licenses and deploying them on the server, adding to licenses already there. Licenses are available in increments of from 500 phones to 45,000 phones, supporting a maximum of 45,000 phones per Cisco Unified Operations Manager 8.5 server. Server hardware sizing is checked during installation to make sure the server will adequately support the number of phones licensed. For Cisco Unified Communications deployments of more than 45,000 phones, multiple Cisco Unified Operations Manager 8.5 servers are deployed. These servers share device and credential information so administrators can perform centralized device and credential management. By integrating Cisco Unified Operations Manager with Cisco Secure Access Control Server (ACS), administrators have central control over user access across many products. Each Cisco Unified Operations Manager server can forward the status of the network being monitored to a higher-level entity (typically a manager of managers) through SNMP traps using the Unified Operations Manager MIB.

**Q. On what operating systems can Cisco Unified Operations Manager 8.5 be installed?**

- A.** Cisco Unified Operations Manager 8.5 requires a server using Microsoft Windows Server 2003 with Service Pack 2 or Windows Server 2008 (32-bit versions only). Check the Installation Guide for a comparison of Standard Edition and Enterprise Edition support, depending on the number of phones supported.

**Q. Does Cisco Unified Operations Manager support VMware?**

- A.** Yes, Cisco Unified Operations Manager supports VMware ESX 3.5 and ESXi 4.x. Refer to the Cisco Unified Operations Manager 8.5 Installation Guide for specifications.

**Q. How does Cisco Unified Operations Manager integrate with CiscoWorks products?**

- A.** Cisco Unified Operations Manager 8.5 works with the entire family of CiscoWorks products. It runs on CiscoWorks Common Services Software 4.0, also the foundation for CiscoWorks LAN Management Solution (LMS). Cisco Unified Operations Manager integration with the CiscoWorks family includes:

- CiscoWorks security roles
- CiscoWorks server process and backup management services
- Device and Credential Repository (DCR)
- Cisco Secure ACS integration

In addition, Cisco Unified Operations Manager can perform a context-sensitive launch of CiscoWorks Resource Manager Essentials, CiscoWorks LMS, and CiscoWorks Campus Manager to accelerate trouble isolation and resolution.

**Q. How does Cisco Unified Operations Manager integrate with Cisco Unified Service Monitor?**

- A.** Cisco Unified Operations Manager uses the information provided by Cisco Unified Service Monitor to present service-quality (quality of voice) alerts on a real-time basis. The service-quality alerts are associated with IP phones or Cisco Unified Communications devices that are currently monitored by Cisco Unified Operations Manager and are presented in the Fault Monitor display. Cisco Unified Operations Manager and Cisco Unified Service Monitor have specialized reports that present near-term historical information and tie into Cisco Unified Service Statistics Manager for long-term historical reporting and sophisticated graphing and summaries.

**Q. How does Cisco Unified Operations Manager integrate with Cisco Unified Service Statistics Manager?**

- A.** Cisco Unified Operations Manager provides report information to Cisco Unified Service Statistics Manager to be post processed, reduced, and stored for long-term historic report uses. Cisco Unified Operations Manager has a provision to launch Cisco Unified Service Statistics Manager to simplify the movement from one application to another.

**Q. How does Cisco Unified Operations Manager integrate with Cisco Unified Provisioning Manager?**

- A.** Cisco Unified Operations Manager has a provision to launch for Cisco Unified Provisioning Manager to simplify the movement from one application to another.

**For More Information**

For more information about Cisco Unified Operations Manager, please visit <http://www.cisco.com/go/cuom>, contact your local account representative, or send email to the Cisco product marketing group at [ask-ipc-management@cisco.com](mailto:ask-ipc-management@cisco.com).



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