Cisco Unified Service Monitor 8.5

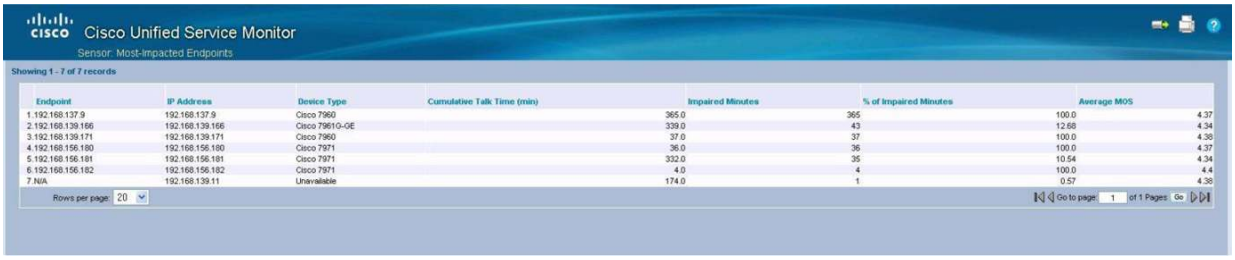
Cisco Unified Communications

Cisco® Unified Communications Solutions unify voice, video, data, and mobile applications on fixed and mobile networks, facilitating easy collaboration every time from any workspace. Part of a comprehensive solution that includes network infrastructure, security, wireless, management, or third-party applications and lifecycle services, Cisco Unified Communications management solutions can accelerate deployment, provide cost savings, and enhance productivity.

Product Overview

Cisco Unified Service Monitor (USM) is a component of the Cisco Unified Communications Management Suite, consisting of Cisco Unified Provisioning Manager, Cisco Unified Operations Manager, Cisco Unified Service Monitor, and Cisco Unified Service Statistics Manager. Cisco Unified Service Monitor continuously monitors active calls supported by the Cisco Unified Communications system and provides near real-time notification when the voice quality of a call fails to meet a user-defined quality threshold (refer to Figure 1). In addition to voice-quality monitoring, Cisco Unified Service Monitor allows you to perform call classification based on dial plan. The on-demand call-detail-record (CDR) reports allow you to view the call records for call analysis.

Figure 1. Cisco Unified Service Monitor: Voice Transmission Quality and Most Impacted Endpoints Report



Cisco Unified Service Monitor monitors, evaluates, and generates reports about user-experience metrics associated with active calls on the Cisco Unified Communications system. It provides a comprehensive list of voice-impairment metrics useful in troubleshooting voice-quality problems.

The system generates user-experience reports that provide lists and details of the endpoints (for example, phones and gateways) that are most frequently affected by voice-quality problems. The reports allow you to understand service quality at a system level through call-quality metrics gathered from Cisco Voice Transmission Quality (VTQ) functions. The reports provide information about real-time service quality through Cisco 1040 Sensors and the Cisco Network Analysis Module (NAM) 4.0 and later. The enhanced call-stream correlation report (Figure 2) provides detailed call metrics collected from multiple instances of Cisco 1040 Sensors and the Cisco Network Analysis Module, which will allow system administrators to idenitfy network segments that have a lower-quality user experience.

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Figure 2. Cisco Unified Service Monitor: Stream Correlation Report

Features and Benefits

Voice-Quality Measurements and Alerts

Cisco Unified Service Monitor monitors voice-quality measurements in a voice-over-IP (VoIP) network and produces alerts based on measurements exceeding preset thresholds. Key voice-call characteristics such as codec type and characteristics, jitter, and packet loss are collected and reported.

The phone-based Cisco VTQ solution provides user-experience metrics at the end of all active calls in the network, expressed as a mean-opinion-score (MOS) calculated value. Real-time MOS values can be produced every 60 seconds for monitored active calls using Cisco 1040 Sensors and the Cisco Network Analysis Module. Threshold-based alerts are sent to upstream applications such as Cisco Unified Operations Manager or a manager-of-managers application.

Thresholds

Cisco Unified Service Monitor allows you to set thresholds based on device types and codec types, incorporates support for Cisco Unified Communications Manager 8.5, and includes reporting data export. Alerts are sent to upstream applications such as Cisco Unified Operations Manager when a MOS threshold is violated.

Call Classification

Cisco Unified Service Monitor allows you to classify calls based on dial plan per cluster. Call classification has default system-defined call categories and also allows you to define call categories to suit their deployment. Cisco Unified Service Monitor can classify calls to multiple categories to help ensure that users can track calls based on call types. The on-demand CDR reports provide a rich set of filters to generate important call information to facilitate detailed analysis.

Integration with Cisco Unified Operations Manager

Integration with Cisco Unified Operations Manager allows you to send near real-time alerts through Simple Network Management Protocol (SNMP) traps, email, paging, and syslog messages to notify administrators of call-quality degradation. Cisco Unified Operations Manager also allows you to simulate synthetic voice traffic using the Cisco IOS® Software IP service-level agreement (SLA) feature and to perform path analysis between the devices where the endpoints are connected in order to troubleshoot network problems that result in user-experience degradation. For more information, please visit http://www.cisco.com/go/cuom.

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Integration with Cisco Unified Service Statistics Manager

Integration with Cisco Unified Service Statistics Manager provides long-term statistics analysis and reports for Cisco Unified Communications networks. Using the data collected by Cisco Unified Operations Manager and Cisco Unified Service Monitor, Cisco Unified Service Statistics Manager provides predefined and customizable reports that give visibility into critical metrics, including call volume, service availability, call quality, resource usage, and capacity across the Cisco Unified Communications system. For more information, please visit: http://www.cisco.com/go/cussm.

Cisco 1040 Sensors

Cisco 1040 Sensors, deployed close to the endpoint (IP phone, gateway, or voicemail system), monitor and evaluate call quality and report this information for active calls in near real time. The Cisco 1040 Sensor, shown in Figure 3, is a shelf-top unit that connects to the network and obtains Power over Ethernet (PoE) through a Cisco Catalyst® switch.

Figure 3. Cisco 1040 Sensor

Cisco Network Analysis Module

The Cisco Network Analysis Module Family of products offers superior visibility into application and network performance to help ensure consistent and efficient delivery of applications and services to end users. The family includes both integrated service modules and self-contained appliances offering deployment flexibility essential for managing application performance and improving operational manageability of the underlying network. Figure 4 shows the Cisco Network Analysis Module. For more information, please visit: http://www.cisco.com/go/nam.

Figure 4. Cisco Network Analysis Module

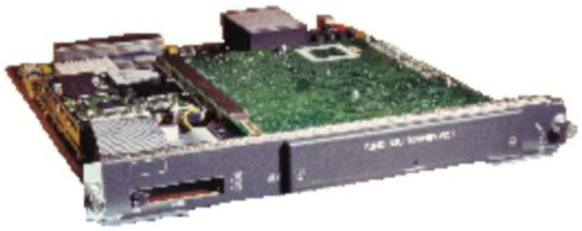

Table 1 lists the differences between the Cisco 1040 Sensor and the Cisco Network Analysis Module.

Table 1. Differences Between Cisco 1040 Sensor and Cisco Network Analysis Module 4.0 and Later

Feature	Cisco 1040	Cisco Network Analysis Module
Function	Instrumentation for monitoring voice quality	Advanced instrumentation that combines application monitoring (including voice), traffic analysis, and troubleshooting
Form factor	Appliance	Blade and appliance
Deployment	Wiring closet	Wiring closet, access, distribution, and campus edge
Scalability	100 Rapid Transport Protocol (RTP) streams per minute	100-4000 RTP streams per minute depending upon the Cisco Network Analysis Module platform
Reports	No built-in user interface	Built-in, real-time views and historical reports

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Feature	Cisco 1040	Cisco Network Analysis Module
Provisioning and configuration	Access to Trivial File Transfer Protocol (TFTP) server to get configuration file for Cisco Unified Service Monitor registration and call-quality forwarding required	Built-in user interface for configuration; supported by CiscoWorks LAN Management Solution (LMS)
Ports	Two ports: One for monitoring and one for management	Cisco Network Analysis Module blade does not use any ports; Cisco Network Analysis Module Appliance has one management port and multiple monitoring ports based on the form factor

Features and Benefits

Table 2 lists additional features and benefits of Cisco Unified Service Monitor.

Table 2. Additional Features and Benefits

Feature	Benefit
Voice metrics	• MOS, jitter, maximum jitter, packet loss, adjusted packet loss, packet loss percent, codec type, type of service, and several other metrics help identify network problems causing voice-quality degradation.
Correlated reports	• Enhanced call-quality reports can track calls that pass through one or more instances of the Cisco 1040 Sensor and the Cisco Network Analysis Module. • Instrumentation on the Cisco 1040 Sensor and Cisco Network Analysis Module allows Cisco Unified Service Monitor to report on voice quality as the call moves along the unified communications network segments. • Reports correlate metrics from the Cisco 1040 Sensor and Cisco Network Analysis Module and CDRs from Cisco Unified Communications Manager for detailed analysis to facilitate troubleshooting of call-quality degradation.
Most-affected endpoints report	• The application helps to identify and isolate the endpoints that are experiencing voice-quality problems.
Northbound interface	• It supports SNMP trap notifications that can be sent to Cisco Unified Operations Manager or manager-of-manager applications.
Enhanced reports	• Enhanced reports and filter-based reports can suit network administrator needs.
Customized threshold settings	• Settings are based on location, codecs, and device types. • Setup is immediately active, with default threshold values set for each codec. • The application allows you to define customized threshold settings based on endpoints in different locations as well as device types.
Call classification	• Per-cluster dial-plan configuration is possible. • The application includes system- and user-defined call categories. • There are multiple categories for each call. • You can obtain an on-demand report based on several filters, including call category, device type, and successful and failed calls (grouped by call termination cause code).
Scalability	• The application supports up to 45,000 Cisco Unified IP Phones.
Cisco 1040 Sensors	• Straightforward deployment is similar to that for IP phones. • User experience is monitored and reported every 60 seconds. • The application supports up to 100 concurrent RTP streams. • It is 802.3af PoE compliant. • It uses the ITU G107 R-factor to compute MOS. • There are two 10/100 Ethernet interfaces (one management and one Switched Port Analyzer [SPAN] port). • The application supports Cisco Discovery Protocol.
Cisco Network Analysis Module	• The module offers deployment flexibility with a choice of integrated service modules and standalone appliances. • Real-time voice monitoring is combined with advanced troubleshooting. • The solution provides accurate voice-quality characterization with ITU G107 R-factor based MOS values. • It supports varying concurrent RTP streams based on form factor to best fit the deployment. • The solution offers proactive detection of voice-quality degradation, minimizing effect on end users. • It provides historical trend analysis.

System Requirements

Table 3 lists the minimum system requirements for Cisco Unified Service Monitor. For VMware platform specifications, please refer to the Cisco Unified Service Monitor Installation Guide. http://www.cisco.com/en/US/products/ps6536/prod_installation_guides_list.html.

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Table 3. System Requirements

Server Requirements (No VMware; single instance of Cisco Unified Service Monitor)	
Component	**Minimum Requirement**
Hardware	Two dual-core processors greater than 2.33 GHz or one quad-core processor greater than 2.33 GHz[1]
Software for Windows	Windows Server 2003 Standard Edition or Enterprise Edition with Service Pack 1 or 2 Windows Server 2008 Standard Edition or Enterprise Edition with Service Pack 2 for 32-bit support only VMware ESX 3.5 or ESXi 4.0
Available memory	4-GB RAM and 4-GB virtual memory
Client Requirements	
Processor	1 GHz minimum (PC or Mac)
Memory	1-GB RAM minimum
Browser	Microsoft Internet Explorer 7 or 8 Firefox 3.6 and later
Resolution	1024 * 768 minimum

[1] Note: The Cisco MCS 7845-H2 and MCS 7845-I2 meet these specifications. These products come with four Serial Attached SCSI (SAS) hard drives configured using Redundant Array of Independent Disks (RAID) 1 + 0.

Supported Devices

For the specific versions of device and Cisco IP Phone models that have been certified in testing, visit http://www.cisco.com/en/US/products/ps6536/products_device_support_tables_list.html.

Ordering Information

Cisco Unified Service Monitor 8.5 is a major upgrade, so all existing customers must purchase the upgrade part to get it to work. The base part number includes licensing for the indicated number of phones, and licenses are added to increase the number of phones supported (Table 4). You can order Cisco Unified Service Monitor as part of a management suite bundle or as a standalone product. You can order the Cisco 1040 Sensor as a standalone component. It comes in two- and five-pack versions, as shown in Table 4. To place an order, visit the Cisco Ordering Homepage. The Cisco Unified Communications Management Suite Ordering Guide, available to Cisco employees and partners, provides instructions on how to order management product bundles that deliver significant savings over the individual product pricing. Please contact your local Cisco account representative for details.

Table 4. Ordering Information

Product Name	Part Number
OM8.x, SM8.x, SSM1.3, PM2.x Suite Bundle 1K IP Phone LIC-K9	L-UCMS-STE-B-1K
OM8.x, SM8.x, SSM1.3, PM2.x Suite Bundle 5K IP Phone LIC-K9	L-UCMS-STE-B-5K
OM8.x, SM8.x, SSM1.3, PM2.x Suite Bundle 10K IP Phone LIC-K9	L-UCMS-STE-B-10K
OM8.x, SM8.x, SSM1.3, PM2.x Suite Bundle 20K IP Phone LIC-K9	L-UCMS-STE-B-20K
OM8.x, SM8.x, SSM1.3, PM2.x Suite Bundle 30K IP Phone LIC-K9	L-UCMS-STE-B-30K
UC Management Suite Mon Bundle 500 LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON500
UC Management Suite Mon Bundle 1K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON1K
UC Management Suite Mon Bundle 2K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON2K
UC Management Suite Mon Bundle 5K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON5K
UC Management Suite Mon Bundle 10K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON10K
UC Management Suite Mon Bundle 20K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON20K
UC Management Suite Mon Bundle 30K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON30K
UC Management Suite Mon Bundle 45K LIC for OM 8.x and SM 8.x-K9	UCMS-B-MON45K
Unified Service Monitor 8.x up to 500 Phone License-K9	L-USM-B-500=

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Product Name	Part Number
Unified Service Monitor 8.x up to 1K Phone License-K9	L-USM-B-1K=
Unified Service Monitor 8.x up to 2K Phone License-K9	L-USM-B-2K=
Unified Service Monitor 8.x up to 5K Phone License-K9	L-USM-B-5K=
Unified Service Monitor 8.x up to 10K Phone License-K9	L-USM-B-10K=
Unified Service Monitor 8.x up to 20K Phone License-K9	L-USM-B-20K=
Unified Service Monitor 8.x up to 30K Phone License-K9	L-USM-B-30K=
Unified Service Monitor 8.x up to 45K Phone License-K9	L-USM-B-45K=
Unified Service Monitor Upgrade 2.x to 8.x	L-USM-B-UPG=
Cisco 1040 Sensor 2 Pack	CUSM-1040-2PK
Cisco 1040 Sensor 5 Pack	CUSM-1040-5PK

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 enhances your technology experience to accelerate true business advantage. For more information about Cisco services, refer to Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about Cisco Unified Service Monitor, please visit http://www.cisco.com/go/cusm, contact your local Cisco account representative, or send an email to the Cisco product marketing group at ask-ipc-management@cisco.com.

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Printed in USA C78-636710-00 01/11

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