Cisco Unified Service Monitor 1.1

Cisco Unified Service Monitor 1.1 provides a low-cost, reliable method of monitoring and evaluating the quality of voice in Cisco Unified Communications solutions. It 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. Cisco Unified Service Monitor 1.1 is part of the Cisco Unified Communications Management Suite.

The Cisco Unified Communications system of voice and IP Communications products and applications allows organizations to communicate more effectively—helping them to streamline business processes, reach the right resource the first time, and improve the profit line. The Cisco Unified Communications portfolio is an integral part of the Cisco Business Communications Solution—an integrated solution for organizations of all sizes which also includes network infrastructure, security, and network management products, wireless connectivity, and a lifecycle services approach, along with flexible deployment and outsourced management options, end-user and partner financing packages, and third-party communications applications.

PRODUCT OVERVIEW

Cisco Unified Service Monitor 1.1 evaluates and provides quality-of-voice metrics associated with active calls in a monitored network. It is a part of the Cisco Unified Communications Management Suite that provides real-time management information and diagnostic capabilities.

FEATURES AND BENEFITS

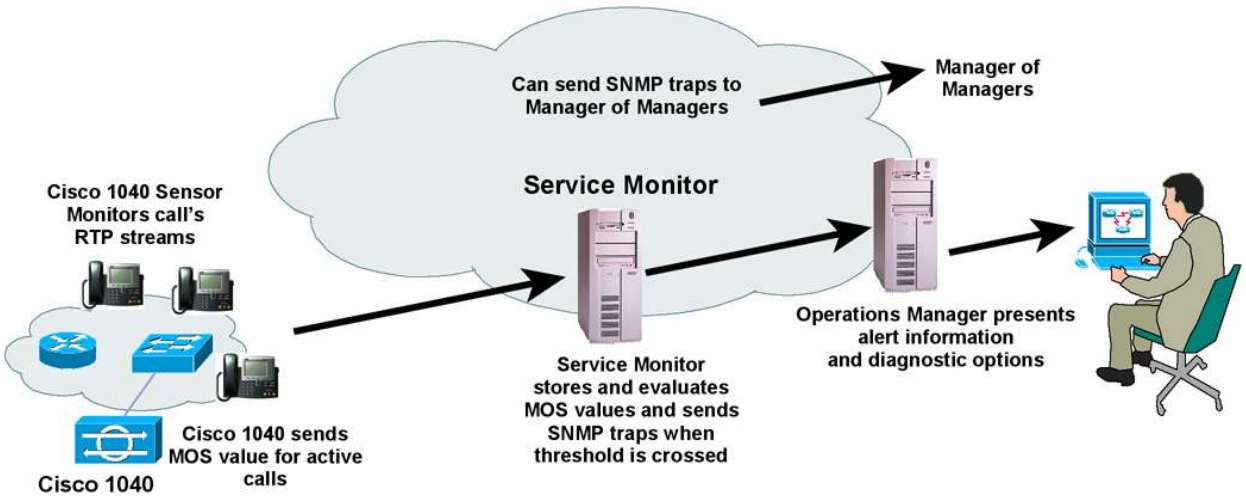
To understand a user's experience with voice quality, it is imperative to measure voice quality for voice calls and report issues in near-real time. To this end, Cisco Unified Service Monitor provides near-real-time voice quality alerts. Some of its key features are as follows (see also Figure 1):

- Real-Time Voice Quality Monitoring—Cisco Unified Service Monitor helps network managers more effectively manage their Cisco Unified Communications system by providing near-real-time information about the user experience associated with active phone calls in their network. The user experience is expressed as a Mean Opinion Score (MOS) that is calculated based on the ITU G.107 standard. The user experience is captured, analyzed, and reported as an MOS score every 60 seconds.
- Real-Time Voice Quality Alerts—Cisco Unified Service Monitor monitors service quality by analyzing Real-Time Transport Protocol (RTP) streams flowing between IP phones. If the MOS value, computed in real time, violates a user-defined threshold, a Simple Network Management Protocol (SNMP) trap is generated and sent to Cisco Unified Operations Manager or to a customer's Manager of Managers. The Cisco Unified Operations Manager uses this information by presenting service-quality (quality of voice) alerts on its dashboard on a near-real-time basis and assisting in further diagnostics to help resolve any underlying problems.
- Ease of Installation and Use—The Cisco 1040 Sensor deployment and configuration is similar to that of Cisco Unified IP phones: it uses IEEE 802.3af standard Power over Ethernet (PoE), obtains its configuration information and downloads it from a Trivial FTP (TFTP) server that can be the same one used by other Cisco Unified Communications components, and uses Skinny Client Control Protocol (SCCP) to help ensure continuous communication with Cisco Unified Service Monitor.
- Scalability and Redundancy—Each copy of Cisco Unified Service Monitor central software supports up to 50 sensors. Multiple instances of Cisco Unified Service Monitor can be installed in a network to provide a distributed and redundant voice quality monitoring mechanism. Each Cisco 1040 Sensor can monitor 80 RTP streams, the switch can be configured to span ingress and egress traffic, the

optimal configuration is to span *ingress* traffic. In a typical setup the best practice is to deploy the sensors in pairs at Switch Port Analyzer (SPAN) ports associated with switches closest to IP phones. Multiple Cisco Unified Service Monitor installations can be configured for each Cisco 1040 Sensor (as primary, secondary, and so on) to help ensure high availability and reliability for the voice quality monitoring solution itself.

- Northbound Interfaces—Cisco Unified Service Monitor provides SNMP trap notification that can be sent to Cisco Unified Operations Manager or another "manager-of-managers" management application.

Figure 1. Cisco Unified Service Monitor



Two typical deployment strategies include strategic monitoring and tactical monitoring:

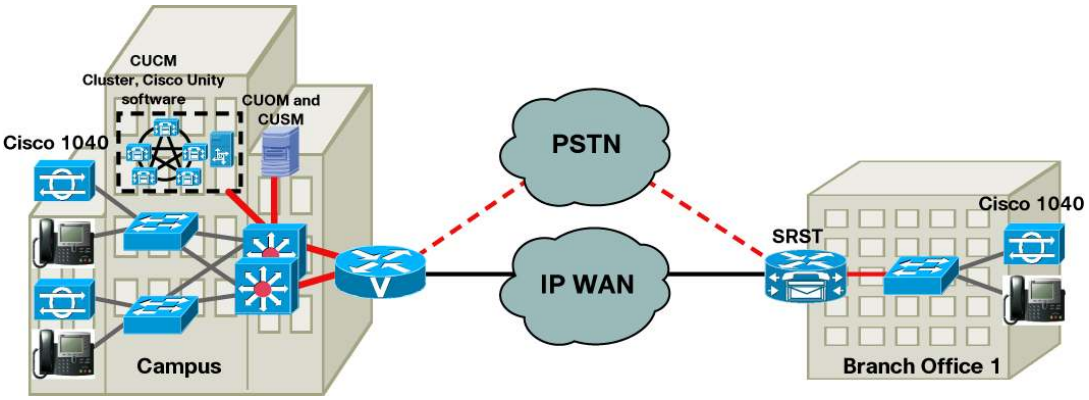
- In strategic monitoring, the Cisco 1040 Sensor is deployed to continuously monitor IP phones at all or selected locations in the managed environment. Depending on the monitoring goals, the appropriate coverage of sites is easy to achieve by using sampling techniques to find representative sites for monitoring with sensors. Each instance of Cisco Unified Service Monitor central software supports up to 50 Cisco 1040 sensors and provides real-time alerting on voice quality issues as well as information that can be used to evaluate general service levels and validate performance against service-level agreements (SLAs).
- In tactical monitoring, the Cisco 1040 sensors can be deployed at a site (such as a branch office) having voice quality concerns or problems. The sensor can begin to monitor and assess quality of IP-based calls immediately, without elaborate setup. The Cisco 1040 Sensor is FCC Class B-compliant and can easily be installed in any office environment.

APPLICATIONS

Small and Medium-Sized Enterprises

For small and medium-sized deployments (generally less than 1000 phones), the Cisco Unified Service Monitor software component can co-reside with Cisco Unified Operations Manager on a single platform. A single installation process installs all necessary components (see Figure 2) on a Windows 2003 server. The Cisco 1040 Sensor is available in sets of two or five. In both options the sensors are separately packaged for ease of deployment.

Figure 2. Small and Medium-Sized Business Deployment of Cisco Unified Service Monitor



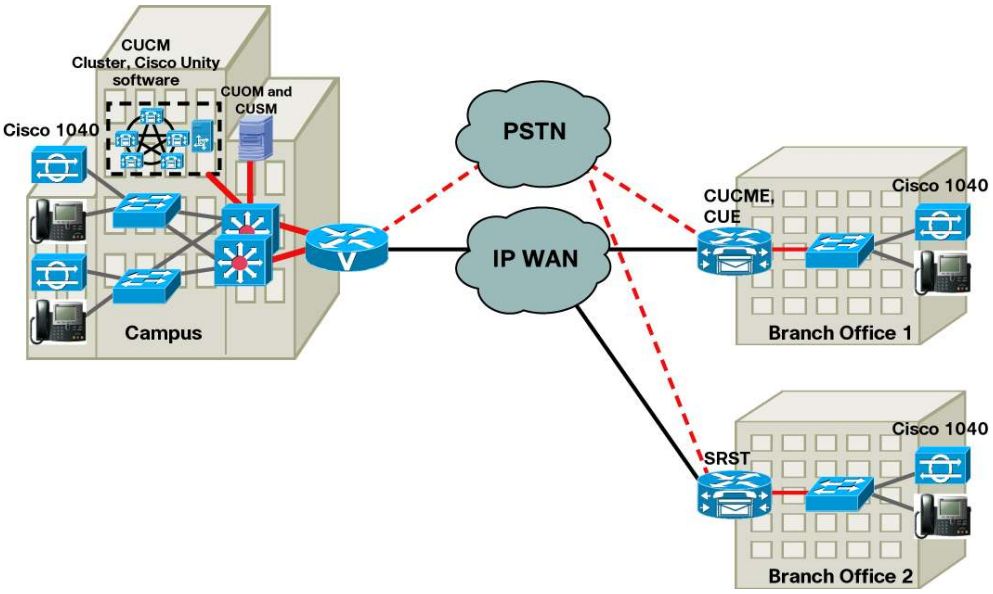
CUCM—Cisco Unified CallManager, CUOM—Cisco Unified Operations Manager, CUSM—Cisco Unified Service Monitor, SRST—Survivable Remote Site Telephony, PSTN—Public Switched Telephone Network

Cisco Unified Operations Manager works with Cisco Unified Service Monitor and provides detailed information about the directory number of the endpoints, IP address of the endpoints, switch port details, type of codec, MOS value, and more in its service quality view. Administrators can use the troubleshooting capabilities of Cisco Unified Operations Manager to perform deep diagnosis associated with voice quality issues.

Large Enterprises

In large enterprise networks, Cisco Unified Service Monitor and Cisco Unified Operations Manager must each reside on dedicated servers. Each instance of Cisco Unified Service Monitor central software supports up to 50 Cisco 1040 sensors. Multiple instances of Cisco Unified Service Monitor central software can be installed in a large monitored network to provide a distributed, scalable, and redundant mechanism to capture and analyze voice quality (see Figure 3).

Figure 3. Enterprise Deployment of Cisco Unified Service Monitor



CUCM—Cisco Unified CallManager, CUOM—Cisco Unified Operations Manager, CUSM—Cisco Unified Service Monitor, CUCME—Cisco Unified CallManager Express, CUE—Cisco Unity Express, SRST—Survivable Remote Site Telephony, PSTN—Public Switched Telephone Network

The Cisco 1040 Sensor is available in sets of two, sets of five, or in a bundle of six sensors along with Cisco Unified Service Monitor software licensed to support up to 10 sensors, with the ability to upgrade to support up to 50 sensors through a licensing mechanism. In all three options the sensors are separately packaged for ease of deployment.

Systems Integrators and Managed Service Providers

Cisco Unified Service Monitor has features and benefits that appeal to systems integrators and managed service providers. It can be deployed at a central site and remotely monitor voice quality in customer networks. It can scale to monitor multiple-site and large deployments, helping managed service providers to monitor the quality of voice experienced by their customers.

PRODUCT ARCHITECTURE

Cisco Unified Service Monitor consists of two elements: Cisco 1040 Sensor hardware and a centralized software application. The Cisco 1040 Sensor monitors voice-specific RTP data streams and computes the MOS. The sensor is installed on the Cisco switch nearest the Cisco Unified IP phones, a gateway, and/or a telephony service such as voice mail to analyze the RTP streams. The sensor configures itself similar to the Cisco Unified IP Phone: it uses IEEE 802.3af standard Power over Ethernet, obtains its configuration information and downloads it from a TFTP server (which can be the same server used by other Cisco IP telephony components), and it uses SCCP to help ensure continuous communication with the Cisco Unified Service Monitor central software component.

PRODUCT SPECIFICATIONS

Tables 1–3 list product compatibility, system capacity, and system requirements for Cisco Unified Service Monitor.

Table 1. Product Specifications

Description	Specification
Product compatibility	Cisco Unified Communications deployments consisting of Cisco Unified CallManager, Cisco Unified CallManager Express, Cisco Unity software, Cisco Unity Express, Cisco Unified Contact Center, Cisco Unified Contact Center Express, Cisco Unified MeetingPlace® Express, and Cisco routers, gateways, switches, and Cisco Unified IP phones
Software compatibility	• Windows 2003 Server for the server platform • Windows 2003 or Windows XP for the client platform with Microsoft Internet Explorer 6.0

Table 2. System Capacity

System Parameter	Capacity
Number of monitored calls	80 simultaneous active calls per Cisco 1040 Sensor
Number of Cisco 1040 sensors supported by each instance of Cisco Unified Service Monitor	Up to 50 sensors

Multiple instances of Cisco Unified Service Monitor can be deployed (each supporting up to 50 Cisco 1040 sensors) to cover the needs of a very large or distributed enterprise. These can report results to a single instance or multiple instances of Cisco Unified Operations Manager or other Manager of Managers applications.

Table 3. System Requirements

Description	Specification
Server requirements	
Processor	Pentium 4 processor, 2 GHz or greater
Memory	2 GB RAM
Swap file	4 GB swap file
Disk space	40 GB hard drive

Description	Specification
Hardware	Server platform
Software	Windows 2003 Server
Client requirements	
Processor	Pentium 4 processor, 1 GHz or greater
Memory	512 MB RAM
Swap file	1 GB swap file
Hardware	Any PC or server platform
Software	Windows XP Home, Windows XP Professional, Windows 2003 Server

ORDERING INFORMATION

To place an order, visit the Cisco Ordering Home Page. Table 4 presents ordering information.

Table 4. Ordering Information

Part Number	Description
CUSM-1040A-2PK	Two Cisco 1040 sensors
CUSM-1040A-5PK	Five Cisco 1040A sensors
CUSM-SW-1.1-K9	Cisco Unified Service Monitor 1.1 software with usage license supporting up to 10 sensors
CUSM1.1-SWLIC10=	Cisco Unified Service Monitor 1.1 usage license upgrade for up to 10 additional sensors
CUSM-1.1-6PK-BUND	Cisco Unified Service Monitor 1.1 bundle with 6 Cisco 1040 sensors, Cisco Unified Service Monitor software, and usage license supporting up to 10 sensors
CUOM-1.1-MMB-K9	Cisco Unified Management Mid Market bundle (Cisco Unified Operations Manager 1.1 to support up to 1000 phones, Cisco Unified Service Monitor 1.1 licensed to support up to 10 sensors, and 2 Cisco 1040 sensors)
CUOM-1.1-ENT-K9	Cisco Unified Management Enterprise bundle (Cisco Unified Operations Manager 1.1 to support up to 5000 phones, Cisco Unified Service Monitor 1.1 licensed to support up to 10 sensors, and 6 Cisco 1040 sensors)

CISCO UNIFIED COMMUNICATIONS SERVICES AND SUPPORT

Using the Cisco Lifecycle Services approach, Cisco Systems® and its partners offer a broad portfolio of end-to-end services to support the Cisco Unified Communications system. These services are based on proven methodologies for deploying, operating, and optimizing IP Communications solutions. Upfront planning and design services, for example, can help you meet aggressive deployment schedules and minimize network disruption during implementation. Operate services reduce the risk of communications downtime with expert technical support. Optimize services enhance solution performance for operational excellence. Cisco and its partners offer a system-level service and support approach that can help you create and maintain a resilient, converged network that meets your business needs.

FOR MORE INFORMATION

For more information about Cisco Unified Service Monitor 1.1, please visit http://www.cisco.com/en/US/products/ps6536/index.html, contact your local account representative, or send e-mail to the Cisco Systems product marketing group at ask-ipc-management@cisco.com.

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