Cisco Unified Service Monitor 2.2

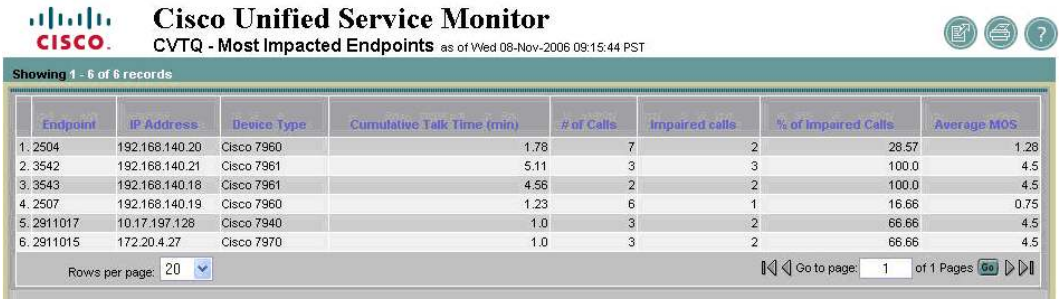
Cisco Unified Communications

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 Service Monitor 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).

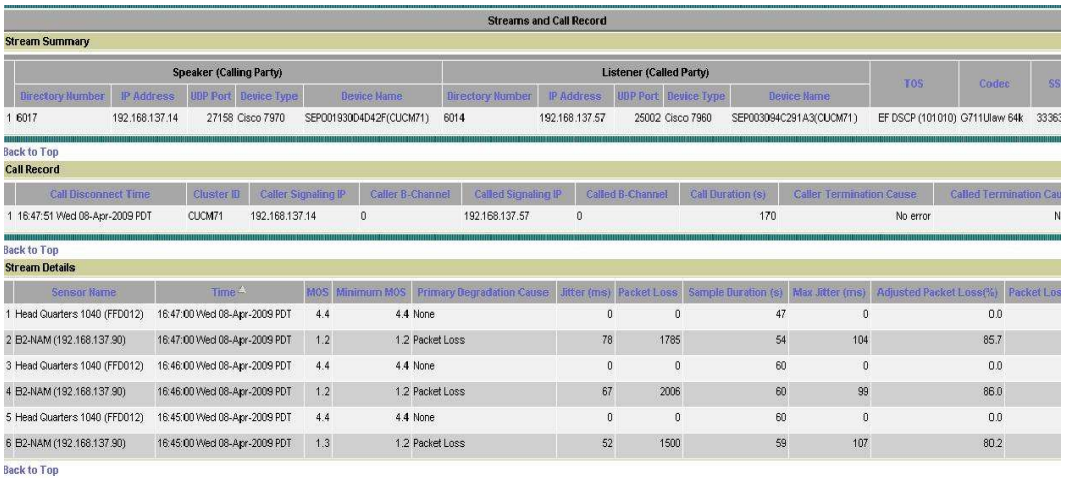
Figure 1. Cisco Unified Service Monitor: Voice Transmission Quality and Most Impacted Endpoint Report



Cisco Unified Service Monitor monitors, evaluates, and generates reports on 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 issues.

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

Figure 2. Cisco Unified Service Monitor: Stream Correlation Report



Streams and Call Record

Stream Summary

	Speaker (Calling Party)					Listener (Called Party)					TOS	Codec	SS
	Directory Number	IP Address	UDP Port	Device Type	Device Name	Directory Number	IP Address	UDP Port	Device Type	Device Name			
1	6017	192.168.137.14	27158	Cisco 7970	SEP001930D4D42F(CUCM71)	6014	192.168.137.57	25002	Cisco 7960	SEP003094C291A3(CUCM71)	EF DSCP (101010)	G711Ulaw 64k	33363

Back to Top

Call Record

	Call Disconnect Time	Cluster ID	Caller Signaling IP	Caller B-Channel	Called Signaling IP	Called B-Channel	Call Duration (s)	Caller Termination Cause	Called Termination Cau
1	16:47:51 Wed 08-Apr-2009 PDT	CUCM71	192.168.137.14	0	192.168.137.57	0	170	No error	N

Back to Top

Stream Details

	Sensor Name	Time	MOS	Minimum MOS	Primary Degradation Cause	Jitter (ms)	Packet Loss	Sample Duration (s)	Max Jitter (ms)	Adjusted Packet Loss(%)	Packet Los
1	Head Quarters 1040 (FFD012)	16:47:00 Wed 08-Apr-2009 PDT	4.4	4.4	None	0	0	47	0	0.0	
2	B2-NAM (192.168.137.90)	16:47:00 Wed 08-Apr-2009 PDT	1.2	1.2	Packet Loss	78	1785	54	104	85.7	
3	Head Quarters 1040 (FFD012)	16:46:00 Wed 08-Apr-2009 PDT	4.4	4.4	None	0	0	60	0	0.0	
4	B2-NAM (192.168.137.90)	16:46:00 Wed 08-Apr-2009 PDT	1.2	1.2	Packet Loss	67	2006	60	99	86.0	
5	Head Quarters 1040 (FFD012)	16:45:00 Wed 08-Apr-2009 PDT	4.4	4.4	None	0	0	60	0	0.0	
6	B2-NAM (192.168.137.90)	16:45:00 Wed 08-Apr-2009 PDT	1.3	1.2	Packet Loss	52	1500	59	107	80.2	

Back to Top

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 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 provides the ability to set thresholds based on device types and codec types, incorporates support for Cisco Unified Communications Manager 7.1, and includes reporting data export. Alerts are sent to upstream applications such as Cisco Unified Operations Manager when a MOS threshold is violated.

Integration with Cisco Unified Operations Manager

Tight integration with Cisco Unified Operations Manager offers the ability to send near real-time alerts via Simple Network Management Protocol (SNMP) trap, email, paging, and Syslog messages to notify administrators of call quality degradation. Ciso Unified Operations Manager also provides the ability 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 issues resulting in user-experience degradation.

Integration with Cisco Unified Service Statistics Manager

Tight integration with Cisco Unified Service Statistics Manager offers detailed reports and analysis of the unified communications call detail records to enable long-term trending and capacity-planning reports.

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, can be used during live subscriber calls and during synthetic test calls.

Figure 3. The Cisco 1040 Sensor

Cisco Network Analysis Module

The Cisco Network Analysis Module Family of products offers unparalleled 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 4.0. For details, visit: www.cisco.com/go/nam.

Figure 4. The Cisco Network Analysis Module

Table 1 lists the differences between Cisco 1040 Sensor and Cisco Network Analysis Module 4.0

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

Feature	Cisco 1040	Cisco Network Analysis Module 4.0
Function	Instrumentation for monitoring voice quality	Advanced instrumentation that combines application monitoring (includes voice), traffic analysis, and troubleshooting
Form-Factor	Appliance	Blade and appliance
Deployment	Wiring closet	Wiring Closet, Access, Distribution, Campus Edge
Scalability	100 Rapid Transit 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
Provisioning and configuration	Need access to Trivial File Transfer Protocol (TFTP) server to get configuration file for Cisco Unified Service Monitor registration and call-quality forwarding	Built-in UI for configuration and supported by CiscoWorks LAN Management Solution
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 reported	• MOS, jitter, max jitter, packet loss, adjusted packet loss, packet loss %, codec type, type of service and several other metrics to help identify network issues causing voice-quality degradation
Correlated reports	• Enhanced call quality reports can track calls that pass through one or more instances of Cisco 1040 Sensor and Cisco Network Analysis Module • Instrumentation on 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 Cisco 1040 Sensor, Cisco Network Analysis Module and call detail records from Cisco Unified Communications Manager for detailed analysis to enable troubleshooting call-quality degradation
Most-affected endpoints report	• Helps to identify and isolate the endpoints that are experiencing voice-quality issues
Northbound interface	• Supports Simple Network Management Protocol (SNMP) trap notifications that can be sent to Cisco Unified Operations Manager or manager-of-managers applications
Enhanced reports	• Enhanced reports and filter-based reports to suit network administrator needs
Customized threshold settings	• Based on location, codecs, and device types • Plug-and-play setup with default threshold values set for each codec • Offers the ability to define customized threshold settings based on endpoints in different locations as well as device types
Scalability	• Supports up to 45,000 Cisco Unified IP Phones
Cisco 1040 Sensors	• Deployment is straightforward and similar to deployment of IP phones • User experience monitored and reported every 60 seconds • Supports up to 100 concurrent RTP streams • 802.3af PoE (Power over Ethernet) compliant • Uses ITU G107 R-factor to compute MOS • Two 10/100 Ethernet interfaces (one management and one SPAN port) • Supports Cisco Discovery Protocol
Network Analysis Module	• Deployment flexibility with a choice of integrated service modules and standalone appliances • Real-time voice monitoring combined with advanced troubleshooting • Accurate voice quality characterization with ITU G107 R-factor based MOS values • Supports up to 4000 concurrent RTP streams (based on form factor) • Proactive detection of voice quality degradation minimizing impact to the end users • Historical trend analysis

System Requirements

Table 3 lists the system minimum requirements for the Cisco Unified Service Monitor. For VMware platform specifications please refer to the Cisco Unified Service Monitor Installation Guide.

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 GHz or one Quad-core processor greater than 2 GHz[1]
Software for Windows	Windows Server 2003 Service Pack 1 or 2, Standard or Enterprise Edition
Available memory	4-GB RAM and 4-GB virtual memory
Client Requirements	
Processor	1 GHz minimum (PC or Mac)
Memory	1-GB RAM minimum

[1] Note: The Cisco MCS 7845-H2 and MCS 7845-I2 meet these specifications. These products come with 4 Serial Attached SCSI (SAS) hard drives configured using RAID1+0

Browser	Microsoft Internet Explorer 6.x, Mozilla Foxfire 2.x
Resolution	1024*768 minimum

Ordering Information

Cisco Unified Service Monitor 2.2 will begin shipping on August 10, 2009. Customers can order these new products through normal Cisco sales channels as of June 22, 2009. The base part number includes licensing for the indicated number of phones. Cisco Unified Service Monitor can be ordered as part of a management suite bundle or as a standalone product. The Cisco 1040 Sensor can be ordered as a standalone component. It comes in two packs and five packs as shown in Table 4, which lists ordering information.

To place an order, visit the Cisco Ordering Homepage

Table 4. Ordering Information

Product Name	Part Number
Cisco Unified Communications Management Suite Bundle for 1K Lic PM 1.3.1, OM 2.2 Premium, SM 2.2 and SSM 1.2 Premium	CUCMS-A-1K-K9
Cisco Unified Communications Management Suite Bundle for 5K Lic PM 1.3.1, OM 2.2 Premium, SM 2.2 and SSM 1.2 Premium	CUCMS-A-5K-K9
Cisco Unified Communications Management Suite Bundle for 10K Lic PM 1.3.1, OM 2.2 Premium, SM 2.2 and SSM 1.2 Premium	CUCMS-A-10K-K9
Cisco Unified Service Monitor 2.2 SW And 1K Phone Lic	CUSM-2.2-1K-K9
Cisco Unified Service Monitor 2.2 SW And 2K Phone Lic	CUSM-2.2-2K-K9
Cisco Unified Service Monitor 2.2 SW And 5K Phone Lic	CUSM-2.2-5K-K9
Cisco Unified Service Monitor 2.2 SW And 10K Phone Lic	CUSM-2.2-10K-K9
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, see 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 account representative, or send an email to the Cisco product marketing group at ask-ipc-management@cisco.com.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Printed in USA C78-532`59-01 02/10