# Cisco Unified Service Monitor 8.0

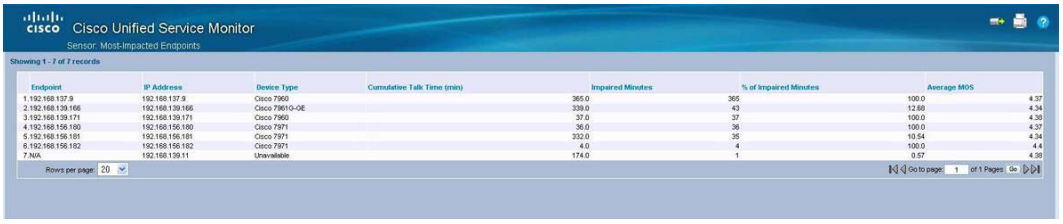
## Cisco Unified Communications

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, Unified Service Monitor provides the ability to perform call classification based on dial plan. The on-demand call detail record (CDR) reports provide users the ability 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 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 allow 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 (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 Cisco Network Analysis Module, which will allow system administrators to idenitfy network segments that have a lower-quality user experience.

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

### Integration with Cisco Unified Operations Manager

Integration with Cisco Unified Operations Manager offers the ability 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. 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 that result in user-experience degradation. For more information please visit http://www.cisco.com/go/cuom.

### 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 utilization, 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.** 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. For more information please visit: http://www.cisco.com/go/nam.

**Figure 4.** The Cisco Network Analysis Module

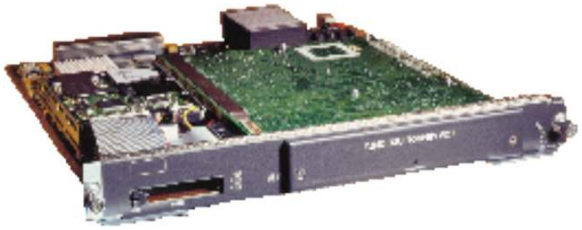


Table 1 lists the differences between Cisco 1040 Sensor and Cisco Network Analysis Module.

**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 (includes voice), traffic analysis, and troubleshooting |
| **Form factor** | Appliance | Blade and appliance |
| **Deployment** | Wiring closet | Wiring closet, access, distribution, 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 |

| Feature | Cisco 1040 | Cisco Network Analysis Module |
|---|---|---|
| **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** | • MOS, jitter, maximum jitter, packet loss, adjusted packet loss, packet loss percent, 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<br>• 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<br>• Reports correlate metrics from Cisco 1040 Sensor and Cisco Network Analysis Module and call detail records from Cisco Unified Communications Manager for detailed analysis to facilitate troubleshooting of call quality degradation |
| **Most-affected endpoints report** | • Helps to identify and isolate the endpoints that are experiencing voice quality issues |
| **Northbound interface** | • 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 to suit network administrator needs |
| **Customized threshold settings** | • Based on location, codecs, and device types<br>• Immediately active setup with default threshold values set for each codec<br>• Offers the ability to define customized threshold settings based on endpoints in different locations as well as device types |
| **Call classification** | • Per cluster dial plan configuration<br>• Includes system-defined and user-defined call categories<br>• Multiple categories for each call<br>• On-demand report based on several filters including call category, device type, successful/failed calls (grouped by call termination cause code) |
| **Scalability** | • Supports up to 45,000 Cisco Unified IP Phones |
| **Cisco 1040 Sensors** | • Straightforward deployment similar to that for IP phones<br>• User experience monitored and reported every 60 seconds<br>• Supports up to 100 concurrent RTP streams<br>• 802.3af PoE compliant<br>• Uses ITU G107 R-factor to compute MOS<br>• Two 10/100 Ethernet interfaces (one management and one Switched Port Analyzer [SPAN] port)<br>• Supports Cisco Discovery Protocol |
| **Network Analysis Module** | • Deployment flexibility with a choice of integrated service modules and standalone appliances<br>• Real-time voice monitoring combined with advanced troubleshooting<br>• Accurate voice quality characterization with ITU G107 R-factor based MOS values<br>• Supports varying concurrent RTP streams based on form factor to best fit the deployment<br>• Proactive detection of voice quality degradation minimizing impact to the end users<br>• Historical trend analysis |

## System Requirements

Table 3 lists the system minimum requirements for 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 2.33 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;<br>Windows Server 2008 Standard Edition or Enterprise Edition with Service Pack 2 for 32-bit support only;<br>VMware ESX 3.5 or ESXi 4.x |
| **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 8.x<br>Firefox 3.6 and later |
| **Resolution** | 1024 * 768 minimum |

## 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

USM 8.0 is a major upgrade, so all existing customers will need to 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). 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. 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 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 |

[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 RAID1+0.

| Product Name | Part Number |
|---|---|
| **Unified Service Monitor 8.x up to 500 Phone License-K9** | L-USM-B-500= |
| **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, 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 C78-619773-00 09/10