

Cisco Multimedia Conference Manager

PROVIDES H.323 GATEKEEPER AND PROXY SERVICES FOR RELIABLE AND SCALABLE VIDEOCONFERENCING AND VOICE-OVER-IP DEPLOYMENTS

The Cisco Multimedia Conference Manager (MCM) is a Cisco IOS[®] software feature set that enables IP networks to support secure, reliable H.323 videoconferencing, with advanced quality of service (QoS) capabilities. The MCM functions as a high-performance H.323 gatekeeper and proxy, allowing network managers to control bandwidth and priority setting for H.323 videoconferencing services based on individual network configurations and capacities. These capabilities ensure appropriate allocation of network resources for videoconferencing as well as other critical applications running simultaneously on the network.

While the Cisco MCM also supports voice over IP (VoIP) in conjunction with Cisco VoIP gateways and routers, this data sheet focuses on the role of the MCM as a critical component to H.323 videoconferencing deployments.

The Cisco MCM is available across a wide range of Cisco router platforms, including the Cisco 2500, 2600, 3600, 7200, and MC3810. Consequently, the MCM can scale to accommodate small, medium-sized, or large videoconferencing environments. Because the MCM is software based, existing Cisco networks can be upgraded with H.323 videoconferencing capabilities quickly and easily by installing a Cisco IOS software image that contains the MCM feature set.

The Cisco MCM is a key component of the new family of Cisco IP/VC videoconferencing products, which includes the Cisco IP/VC 3520/3525 videoconferencing Gateways, the IP/VC 3510 Videoconferencing Multipoint Control Unit (MCU), and the IP/VC 3530 Video Terminal Adapter (VTA). The Cisco IP/VC product family provides a complete videoconferencing infrastructure solution for multiservice IP networks.

The Cisco MCM differentiates itself from other H.323 gatekeepers in several ways:

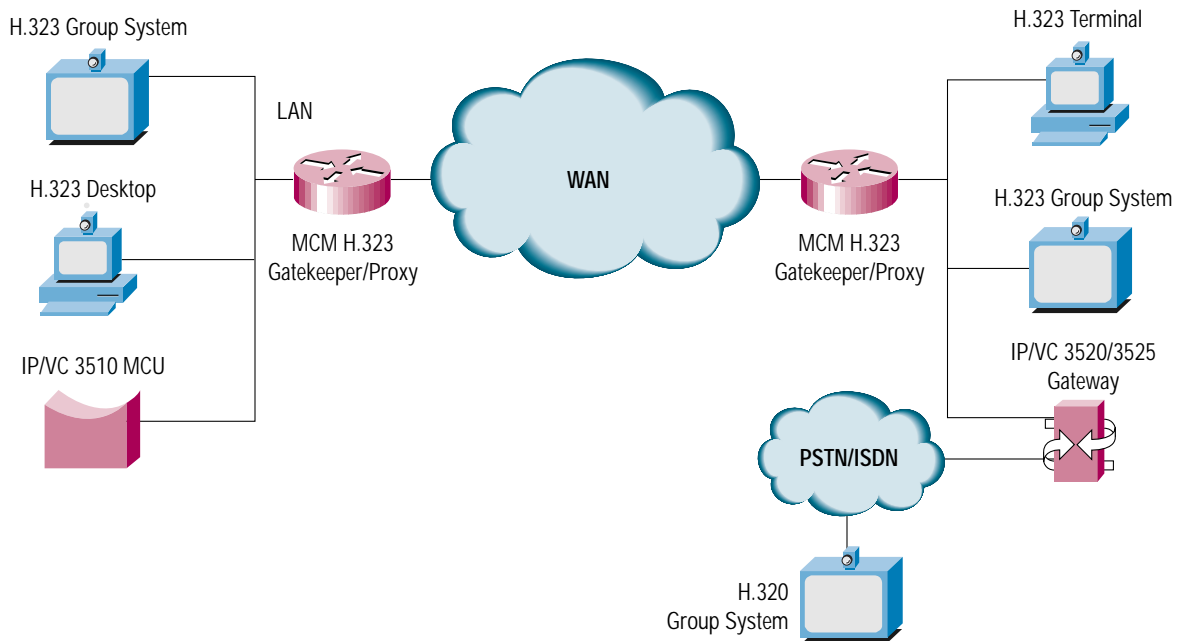
- It is unique in offering proxy services as well as gatekeeper services.
- It combines gatekeeper/proxy services with routing capabilities on a single hardware platform.
- It supports a multiservice IP networking environment for data, voice, and H.323 videoconferencing on a common software base.
- It offers scalability by virtue of its availability on a wide range of platforms.
- It offers excellent price/performance for small to very large H.323 network deployments.

Those capabilities make the MCM an important component of the Cisco AVVID (Architecture for Voice, Video and Integrated Data) which integrates all of these communications into a single multiservice IP network infrastructure. The MCM Gatekeeper and Proxy provide IP videoconferencing networks with features such as:

- Packet forwarding services
- Address resolution and call routing
- User authentication and call accounting
- Bandwidth management
- QoS connection signaling

These features allow videoconference users to experience high quality, even when other applications are running on the network.

Figure 1 An IP Videoconferencing Network Utilizing the Gatekeeper and Proxy Functions of the MCM



Key Cisco MCM Services

The Cisco MCM includes both gatekeeper and proxy subsystems:

- The MCM gatekeeper provides admission control, bandwidth management, address resolution, user authentication and authorization, call accounting, and call routing functions for H.323 connections.
- The MCM Proxy provides QoS capabilities to ensure high-quality H.323 videoconferencing calls over LAN and WAN infrastructures. The proxy also enhances security by working with firewalls to perform H.323 endpoint address translation. In addition, the proxy make connections according to specified parameters.

MCM H.323 Gatekeeper Functions

The MCM Gatekeeper subsystem functions as a point of control for a variety of video and voice components that can be attached to an IP network: H.323 videoconferencing endpoints, H.323 multipoint control units, H.320-H.323 gateways, IP telephony

devices, IP-Public Switched Telephone Network (PSTN) gateways, and Cisco router VoIP PBS/PSTN interface cards. The subsystem's features include:

- H.323 administrative zone establishment
- User authorization and authentication via a RADIUS or TACACS database
- Endpoint registration via the H.323 registration, admission, and status protocol
- Call establishment within a zone and between zones with admission control
- Bandwidth and session management within a zone and between zones
- Management of the amount of H.323 conferencing traffic and/or the number of sessions allowed on a WAN or LAN
- Address lookup, resolution, and translation between text and E.164 aliases and IP addresses
- Generation of videoconferencing call records for accounting and billing

MCM H.323 Proxy Functions

The MCM H.323 proxy is a call-processing agent that terminates H.323 calls from a local LAN or “zone” and establishes sessions with H.323 endpoints located in different LANs or “zones.” In so doing, the proxy provides network administrators with the ability to set and enforce quality of service policy on the inter-zone segments, and a method of identifying H.323 videoconferencing connections for tunneling through firewalls. The proxy’s capabilities include:

- H.323 call signaling termination and generation
- Identification of videoconferencing traffic streams
- Classification of video/audio streams with the appropriate QoS:
 - QoS via the marking of each packet with the desired IP Precedence bits
 - QoS via the Resource Reservation Protocol (RSVP) on behalf of conferencing clients to pre-allocate bandwidth at connection time
- Control of the WAN link bandwidth utilized for videoconferencing in conjunction with limits configured in the gatekeeper
- Routing of the videoconferencing traffic to a specific network link (in conjunction with the Cisco Application Specific Routing Feature [ASR])

- Video-connection security via routing all sessions through the proxy’s IP address, which enables the IP addresses of the video endpoints to remain hidden
- Additional security via routing videoconferencing connections to external destinations through firewalls

Scalability

As Cisco extends the MCM software to its larger router platforms, videoconferencing performance naturally increases as well. In terms of gatekeeper functionality, more video endpoints can be registered and more video calls can be accommodated. In terms of proxy functionality, more videoconferencing streams can be sent through the proxy for QoS classification and address translation. For example, at the low end, the MCM supports up to 600 H.323 endpoint registrations, 10 videoconferencing proxy sessions, and 30 simultaneous H.323 video calls. At the high end, the MCM will support up to 3000 H.323 endpoint registrations, 100 videoconferencing proxy sessions, and 500 simultaneous H.323 video calls.

Cisco Multimedia Conference Manager Features and Benefits

The Cisco MCM offers an exceptional set of features and benefits for videoconferencing users and your business

Features	Benefits
Integrated Gatekeeper/ Proxy/ Routing Functions	<ul style="list-style-type: none"> • Provides gatekeeper, proxy, and routing functions on a single hardware/software platform
Scalability	<ul style="list-style-type: none"> • Accommodates small to large H.323 network deployments according to router platform
ITU H.323v2 Standard Compliant	<ul style="list-style-type: none"> • Interoperability with H.323v1 and v2-compliant endpoints, MCUs, gateways, and gatekeepers
Bandwidth Management	<ul style="list-style-type: none"> • Allows network administrators to implement policies to limit bandwidth used on LAN and WAN • Controls the number of videoconferencing sessions allowed
Quality of Service	<ul style="list-style-type: none"> • Enables policy to be applied to data, voice, and video traffic to ensure reliability and quality of transmissions
Authentication	<ul style="list-style-type: none"> • Ensures that only authorized users and endpoints can make or receive videoconferencing calls
Call Accounting	<ul style="list-style-type: none"> • Creates videoconferencing call records for billing purposes
Security	<ul style="list-style-type: none"> • Conceals endpoint IP addresses to prevent network intrusion by routing connections through the proxy
Address Lookup and Translation	<ul style="list-style-type: none"> • Allows users to easily establish conferences using e-mail addresses instead of IP addresses

MCM Performance on Cisco Multiservice Routers*

Observed MCM performance when videoconferencing and routing functions run concurrently.

*Performance data will vary according to features used and specific network environment

Chassis	IP Routing	H.323 Endpoint Registration	Simultaneous Video Calls	Video Proxy Sessions
72xx	50-100K pps	3000	500	50 at 768 kbps 75 at 384 kbps 100 at 128 kbps
3660	25-100K pps	1800	250	25 at 768 kbps 35 at 384 kbps 50 at 128 kbps
3640	10-40K pps	1800	150	10 at 768 kbps 15 at 384 kbps 30 at 128 kbps
3620	10-15K pps	1800	75	10 at 768 kbps 15 at 384 kbps 30 at 128 kbps
262x	5-10K pps	900	60	2 at 768 kbps 4 at 384 kbps 8 at 128 kbps
261x	2-5K pps	900	60	2 at 768 kbps 4 at 384 kbps 6 at 128 kbps
3810	2-5K pps	900	60	2 at 768 kbps 4 at 384 kbps 6 at 128 kbps
25xx	N/A	600	30	2 at 768 kbps 4 at 384 kbps 10 at 128 kbps

Specifications

Cisco IOS Software	<ul style="list-style-type: none">• Cisco IOS Version 12.07T, 12.07T
Cisco Hardware Platforms	<ul style="list-style-type: none">• Cisco 25xx routers• Cisco 26xx routers• Cisco 36xx routers• Cisco MC3810 Multiservice Access Concentrator• Cisco 7200 routers
Protocols	<ul style="list-style-type: none">• H.323v2
Memory Requirements Flash/DRAM	<ul style="list-style-type: none">• Cisco 25xx routers – 8-MB Flash/16-MB DRAM• Cisco 26xx routers – 8-MB Flash/32-MB DRAM• Cisco 36xx routers – 8-MB Flash/32-MB DRAM• Cisco MC3810 – 8-MB Flash/32-MB DRAM• Cisco 72xx routers – 16-MB Flash/64-MB DRAM
Interfaces Supported	<ul style="list-style-type: none">• Ethernet/Fast Ethernet• Token Ring• Serial Frame Relay• Serial HDLC• ATM T1/E1, DS3/E3, OC-3



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

<http://www.cisco.com>

Tel: 408 526-4000

800 553-NETS (6387)

Fax: 408 526-4100

European Headquarters

Cisco Systems Europe s.a.r.l.
Parc Evolic, Batiment L1/L2
16 Avenue du Quebec
Villebon, BP 706
91961 Courtaboeuf Cedex
France

<http://www-europe.cisco.com>

Tel: 33 1 69 18 61 00

Fax: 33 1 69 28 83 26

Americas

Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

<http://www.cisco.com>

Tel: 408 526-7660

Fax: 408 527-0883

Asia Headquarters

Nihon Cisco Systems K.K.
Fuji Building, 9th Floor
3-2-3 Marunouchi
Chiyoda-ku, Tokyo 100
Japan

<http://www.cisco.com>

Tel: 81 3 5219 6250

Fax: 81 3 5219 6001

Cisco Systems has more than 200 offices in the following countries. Addresses, phone numbers, and fax numbers are listed on the Cisco Connection Online Web site at <http://www.cisco.com/offices>.

Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • China • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela

Copyright © 1999 Cisco Systems, Inc. All rights reserved. Printed in the USA. IP/VC is a trademark; and Cisco, Cisco IOS, Cisco Systems, the Cisco Systems logo, and IP/TV are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. All other trademarks mentioned in this document are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any of its resellers. (9912R)

3/00 LW