Release Notes for Cisco uMG9820 QAM Gateway, Release 2.3

October 7, 2004

These release notes described the features and hardware and software requirements for Release 2.3 of the Cisco uMG9820 QAM Gateway.

These release notes include the following topics:

Tip Use this document online. This document provides hyperlinks to related documents and websites.

Document History

Document Version	Date	Notes
1	10/06/2004	This document was first published for Release 2.3.

CISCO SYSTEMS

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Product Description

The Cisco uMG9820 QAM Gateway receives MPEG-2 single-program transport streams (SPTSs) encapsulated in user datagram protocol (UDP)/IP datagrams over Gigabit Ethernet (GE). The MPEG-2 SPTS packets are processed and remultiplexed into MPEG-2 multiprogram transport streams (MPTSs). The MPTS packets are in turn routed to QAM/RF cards for distribution over the CATV network to downstream connected set-top boxes (STB). (See Figure 1.) The QAM cards accept up to four MPTSs, and output up to four QAM-modulated and RF-upconverted signals. The modulation is 64QAM or 256QAM; there are two RF ports per QAM card, and two QAM channels per port.

Figure 1   Typical Video on Demand Network using the Cisco uMG9820 QAM Gateway
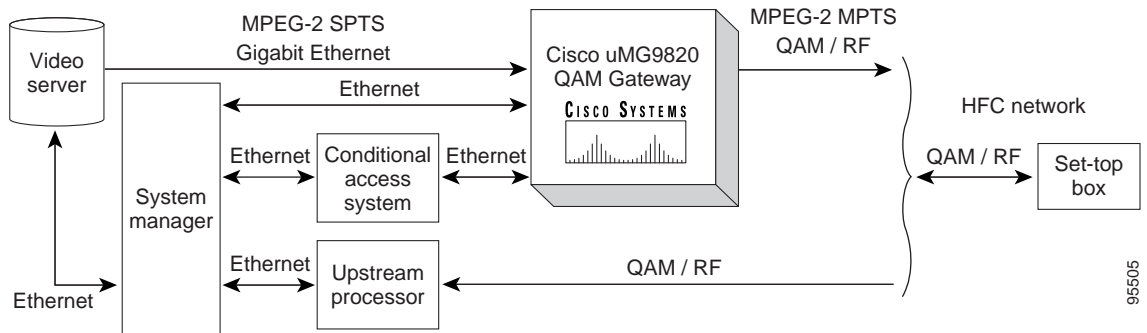
The Cisco uMG9820 incorporates a number of standard network protocols for management and control, including simple network management protocol (SNMP) for management and configuration, trivial file transfer protocol (TFTP) for firmware upgrades, dynamic host configuration protocol (DHCP) for dynamic address assignment, and Telnet for command-line configuration options.

System Requirements

This section describes system requirements for the Cisco uMG9820 QAM Gateway, Release 2.3.

Hardware Supported

Table 1 shows hardware compatible with the Cisco uMG9820 QAM Gateway.

Table 1   Hardware Compatibility

	Product Number	Description	Notes
Cisco uMG9820 QAM Gateway	uMG9820-SYS-AC	Minimum Configuration	• 2 QAM cards • 1 processor card • 2 power supplies • 1 chassis
QAM Card	uMG9820-QC42B	Cisco uMG9820 QAM Gateway QAM Card	4 additional QAM cards can be added to the minimum configuration.
	uMG9820-QC42B=	Cisco uMG9820 QAM Gateway QAM Card (spare)	
Processor Card	uMG9820-PROC=	Cisco uMG9820 QAM Gateway Processor Card (spare)	
Power Supply	PWR-uMG9820-AC=	Cisco uMG9820 QAM Gateway Power Supply (spare)	
Fan Assembly	uMG9820-FAN=	Cisco uMG9820 QAM Gateway Fan Assembly (spare)	
Small Form-Factor Pluggable Modules	GLC-SX-MM=	1000BASE-SX SFP	
	GLC-LX-SM=	1000BASE-LX SFP	
	CWDM-SFP-XXXX=	Cisco CWDM SFP	XXXX=wavelength

Software Supported

The Cisco uMG9820 QAM Gateway now supports software Release 2.3. The image for this release is posted on Cisco.com at the following URL:

http://www.cisco.com/cgi-bin/tablebuild.pl/umg9820

Determining the Software Version

To determine the version of software running on a Cisco uMG9820, log in to the QAM Gateway and enter the **show version** command in EXEC mode:

```
umg9820> show version

Shell v2.3
Compiled 06-Oct-04 17:53 by root on beren 2.4.18-3 unknown
```

New and Changed Information

This section summarizes new or changed information in Release 2.3. For additional information, see the *Cisco uMG9820 QAM Gateway Installation and Configuration Guide for Release 2.3*.

New or Changed Hardware Features

64QAM Support

With Release 2.3, 64QAM support is added.

DVB-ASI Monitor Port

In Release 2.3, the Digital Video Broadcast-Asynchronous Serial Interface (DVB-ASI) port on the rear panel of the Cisco uMG9820 is functional. You can route the input of a single QAM channel to the asynchronous serial interface (ASI) port to monitor the channel using test equipment.

Verification of QAM Cards

Effective with Release 2.3, QAM cards are verified to be Cisco branded. Others are disabled.

New or Changed Software Features

New MIBs

The following MIBs are new in Release 2.3:

- CISCO-VIDEO-NETWORK-MIB
- CISCO-CONFIG-COPY-MIB
- CISCO-ENVMON-MIB
- IF-MIB
- CISCO-ENTITY-ASSET-MIB
- ENTITY-MIB
- CISCO-ENTITY-UMG9820-MIB
- SNMP Traps

Configuring SNMP

The following command sets the SNMP community string:

snmp-server community *community-string* {**RO** | **RW**}

The SNMP community string authenticates access to MIB objects, and functions as an embedded password.

The following command establishes the SNMP host IP address:

[**no**] **snmp-server host** *IP-address* {**informs** [**version 2c**] | **traps** [**versions** {**1** | **2c**}] *community-string*

Configuring Logging

The following command sets the severity level of messages displayed to the console:

[**no**] **logging console** [**emergencies** | **alerts** | **critical** | **error** | **warning** | **notifications** | **informational** | **debugging**]

The following command sets the severity level of local syslog messages:

[**no**] **logging leve**l [**emergencies** | **alerts** | **critical** | **error** | **warning** | **notifications** | **informational** | **debugging**]

The following command displays the entries in the current log file:

show logging *number-of-lines*

Configuring the Clock

The following new command sets the real-time system clock:

clock set

The following command sets the system clock to the real-time clock:

clock update

Executing Enable Mode Commands from Configuration Mode or Submode

The following command allows execution of the **clear**, **clock**, **copy**, **hostname**, **reload**, **show**, and **upgrade** enable mode commands while still in configuration or submode prompt:

do *enable-mode-command*

ASI Port Configuration

The following command is used to enable and disable the ASI port:

[**no**] **shut**

The following command selects a video stream to route to the ASI port:

video route *slot/port.qam*

The following command displays interface statistics for the ASI port:

show interface asi *slot/port*

Enabling and Disabling Autonegotiation on a GE Port

The following command enables or disables the autonegotiation feature of the specified GE port:

[**no**] **negotiation auto**

GE Session Commands

Session timeouts

The following command now sets session timeouts for all sessions:

[**no**] **video timeout** {**signal-loss** *milliseconds* | **stop-psi** *milliseconds* | **session-close** *minutes*}

Setting Bitwise Emulation Mode

Paired-bitwise has been added to the emulation mode command:

[**no**] **video emulation-mode** {**bitwise** | **paired-bitwise**} [**number-ip-address** {**1** | **2** | **3**}

Configuring Session Cloning and Multicast for Program Data Delivery

VoD Program Data Delivery (PDD) support is provided in Release 2.3 to allow the delivery of electronic program guide (EPG) data, other client data, and navigation data to a VoD client application running on the set-top box. PDD functionality on the Cisco uMG9820 supports multicast, cloning, and programs having up to 16 elementary streams.

> **Note** For further discussion of this new feature, see the *Cisco uMG9820 QAM Gateway Installation and Configuration Guide for Release 2.3*.

The following new commands are available to support this new feature:

To join or leave an internet group management protocol (IGMP) multicast group:

[**no**] **ip igmp static-group** {***** | *group-address* [**source** {*source-address* | **ssm-map**}]}

To map an input UDP session to a particular QAM channel with a specified output program number:

[**no**] **video udp** *UDP-port-number* **qam** *slot/port.qam* **program** *program-number*

To map an input UDP session to all the 24 QAM channels on the device (all output programs have the same specified output program number):

[**no**] **video udp** *UDP-port-number* **all program** *program-number*

Limitations and Restrictions

This section lists limitations or restrictions on the functionality of this release.

Gigabit Ethernet and Fast Ethernet Ports

- GE ports do not respond to a request to start a Telnet session. However, the Fast Ethernet (FE) network management system (NMS) port, Fast Ethernet 0/1, is fully functional and does respond.

- Subnetting is not currently supported on GE and FE interfaces.

CAS

The conditional access system (CAS) port (FastEthernet 0/2) is not fully functional. It only supports only pings and address resolution protocol (ARP) requests.

Ping Packet Size and Buffer Size

When issuing a ping command from Microsoft Windows to the Cisco uMG9820 GE port, the total packet size must be 64 bytes or less. Ensure that the payload size is approximately 10, by setting the buffer length to 10. For example,

```
ping -l 10 192.168.1.30
```

where the -l option specifies the length of the buffer that should be used.

Maximum Jitter

The **set maximum jitter** command is not functional in this release.

Caveats

The following are the key caveats for the Cisco uMG9820 QAM Gateway. Workarounds are provided where applicable.

Open Caveats

This section describes possible unexpected behavior by Software Release 2.3 of the Cisco uMG9820.

- CSCec61294

  Network jitter above 70 milliseconds causes audio/video anomalies.

- CSCed01156

  The inactive timeout is used to indicate that no IP packets for a given session have been received for the timeout period (the default is 100 milliseconds). This is the first timeout that occurs when IP packets for a session are stopped. This timeout currently is not configurable by the user.

- CSCee18522

  When Vod trick mode is used, audio is dropped when exiting from fast-forward or fast-reverse to a normal play mode.

- CSCee18531

  When VoD trick mode is used, and the video stream is in fast-forward mode, the video flips twice within 2 seconds, then once between 5 and 10 seconds after that.

- CSCee23523

  the picture flips once vertically when entering or exiting VoD trick mode (fast-forward, rewind, or pause).

- CSCee23535

  When VoD trick mode is used (fast-forward and fast-rewind), the picture flips sideways to the right between 2 and 4 times a minute.

- CSCee23639

  When using an SDTV stream, after an access list is disabled, the picture flips vertically about 2 seconds after the stream starts.

- CSCee62771

  SNMP: The initial Get and Get Many using the Entity MIB are successful, but subsequent instances cause all of the MIB tables to fail.

- CSCef31646

  The result of the command **show interface fastethernet** 0/*x* or **show interface gigabitethernet** 0/*x* does not list the IP address, subnet mask, broadcast address, or gateway address.

- CSCef14695

  The Cisco uMG9820 does not give any warning messages if a multicast stream is configured to the same program number as a unicast stream.

- CSCef14757

  The video does not recover when switching between 64QAM and 256QAM.

  The workaround is to reload the Cisco uMG9820. The video recovers once the Cisco uMG9820 reinitializes.

  ✎

  Note Switching between 64QAM and 256QAM executes properly if you change the QAM mode after waiting until the session-close timeout is up.

  The workaround is to reload the Cisco uMG9820 to clear the problem.

- CSCef42426

  After upgrading to the new software, you may be notified of errors regarding flash memory.

  The workaround is to perform the upgrade again, using the **upgrade now gigabitethernet force** command.

- CSCef43556

  SNMP: The trap value and the get snmp value differ for the cvnSessionNotifLatestIndex object.

- CSCef43580

  SNMP: A successful set value is not reflected in the get for StartSessionUD.

- CSCef44168

  When performing a **show running-configuration** command, ip gratuitous-arp is listed twice.

- CSCef44362

  When multicast streams are cloned to all QAMs, the result of the **show video session active** command lists the QAMs out of order.

- CSCef44854

  Notification is sent continuously (or rows are added continuously in the notification table) even when the violation happens only once.

- CSCef45073

  SNMP: If you configure the SNMP host with traps, and then enable or disable the QAM interface, the traps are not received by the trap receiver. However, traps are received if the gigabit Ethernet interface is enabled or disabled. Traps should be sent to all interfaces including the QAM interface when the interfaces are enabled or disabled.

- CSCef48443

  The Cisco uMG9820 does not recognize the read-only SFP GBIC.

- CSCin76360

  SNMP: The Getbulk query fails and returns an SNMP segmentation fault error if the max-repetition value is greater than 71.

Resolved Caveats

This section lists caveats resolved in Release 2.3.

- CSCec12631

  It is not possible to set the severity of messages logged to the console.

- CSCec51044

  The user can set the logging severity level, but the result of the command is not displayed in the running configuration and is therefore not remembered following a power cycle.

- CSCec54541

  SNMP: When the command-line interface (CLI) is used to set the systemName parameter, the hostname is not updated.

- CSCec57857

  SNMP: After the trap configuration is changed to version 1, the Cisco uMG9820 still reports version 2c traps until the system is reloaded.

- CSCec57963

  SNMP: The RFC 1213 interface index entry "ifLastChange" currently is not supported.

- CSCec57973

  SNMP: The RFC 1213 interface index entry "ifInUnknownprotos" currently is not supported.

- CSCec87430

  In VoD trick mode, the audio may be garbled for the first 5 to 10 seconds when a stream starts. It may also be garbled for 5 to 10 seconds after returning to normal play mode from pause, fast-forward, and rewind.

- CSCed53967

  When dropping an incoming audio stream using the **video udp** command, the correct stream is dropped, but one of the remaining stream types is changed in the output PMT. This causes the stream to fail to be decoded.

- CSCed74690

  Under some circumstances, the message "QAM 1 oversubscription" is displayed in error.

- CSCed75495

  Bitwise mode configuration does not display completely in the running-configuration file. For example, if you configure your Cisco uMG9820 as "video emulation bitwise number-ip-address 3," the running configuration shows it only as "video emulation-mode bitwise."

- CSCed01480

  Transport stream ID (TSID) numbers are limited to the range 1–32767. The range should be 1–65535. The TSID is a two-byte unsigned integer that uniquely identifies an MPEG-2 transport stream. It is included in the program association table (PAT).

- CSCed75433

  When a user-defined UDP port is removed from the QAM interface, the output video is not stopped until the chassis is reloaded.

- CSCed76018

  GE and FE interfaces are listed twice in the configuration files. GE and FE configuration commands are divided between both instances. However, while cosmetically incorrect, this does not affect operation. All the configuration commands for the GE and FE ports are listed in the configuration files before the QAM interface configurations are listed.

- CSCed86041

  When the command **video udp** is used and the least significant bit of the port and the program number are the same, the command is not reflected in the configuration file. However, the QAM channel to which the command is applied is reflected. This means if the Cisco uMG9820 is reloaded (rebooted) because of a power failure or intentionally, the port mapping is lost.

  However, if the streams are started after the commands are entered, the ports are mapped correctly, even though this is not displayed in the configuration file.

- CSCed86783

  Each time the command **video udp** *UDP-port-number* is used, two lines are added to the running-configuration file. The first line reflects the QAM channel slot and port, while the second is the actual command.

- CSCed96158

  For maximum compatibility with older models of the Motorola DCT2000, the default interleaver mode should be 128,4.

- CSCee18577

  When **no video udp** *UDP-port-number* is used to remove the mapping of a UDP port, an incorrect confirmation message is displayed. This does not affect the proper completion of the command.

Related Documentation

Platform-Specific Documents

Following are documents containing information specific to the Cisco uMG9820 QAM Gateway. You can access the URLs listed for each document on Cisco.com on the World Wide Web.

- *Quick Start Guide—Rack-Mounting the Cisco uMG9820 QAM Gateway*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/9820rkmt.htm

- *Cisco uMG9820 QAM Gateway Installation and Configuration Guide for Release 2.3*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/9820icg2/index.htm

- *Cisco uMG9820 QAM Gateway Regulatory Compliance and Safety Information*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/9820rcsi.htm

- *Removing and Replacing a Processor Card in the Cisco uMG9820 QAM Gateway*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/20profru.htm

- *Removing and Replacing a QAM in the Cisco uMG9820 QAM Gateway*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/20qamfru.htm

- *Removing and Replacing a Fan Assembly in the Cisco uMG9820 QAM Gateway*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/20fanfru.htm

- *Removing and Replacing a Power Supply in the Cisco uMG9820 QAM Gateway*

  http://www.cisco.com/univercd/cc/td/doc/product/cable/vod/umg9820/20profru.htm

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

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You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

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- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is "down," or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

This document is to be used in conjunction with the documents listed in