Troubleshooting

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This chapter provides guidelines and information on troubleshooting, listing common problems and solutions for them. It contains the following sections:

Also check the *Cisco Unified Messaging Gateway 1.0 Release Notes* for late-breaking information.

Tip Bookmark the Cisco UMG documentation page for easy access to all the documents.

General Troubleshooting Guidelines

Cisco technical support personnel may request that you run one or more of these commands when troubleshooting a problem. Cisco technical support personnel provides additional information about the commands at that time.

Caution Some of these commands may impact performance of your system. We strongly recommend that you do not use these commands unless directed to do so by Cisco Technical Support.

Hardware and Software

Rebooting the System

When you reboot Cisco UMG, it is not necessary to reboot the router.

Caution However, before you reboot the router, you must perform a graceful shutdown of Cisco UMG. If you do not do this, you risk data loss and file corruption.

To perform a graceful shutdown, see *Installing Cisco Network Modules in Cisco Access Routers*.

After you reboot the router, you must also reboot Cisco UMG as well, because no calls will be routed until IP connectivity is reestablished between the Cisco UMG module and the router.

Communicating Between Components

Problem: You cannot open a session with Cisco UMG.

Explanation Someone else is logged into the messaging gateway and concurrent logins are not permitted.

Recommended Action Use the **service-module integrated Service-Engine** *slot*/*port* **session clear** command to clear the TTY line.

Problem: You cannot change or remove the IP address or IP default-gateway configurations using the Cisco UMG CLI.

Explanation The IP address and IP default-gateway configurations are controlled from the Cisco IOS software.

Recommended Action Make the required changes from the integrated service-engine interface.

Problem: Service-module commands do not seem to take effect.

Explanation The service-module status might not be steady state. RBCP configuration messages go through only when the service-module is in steady state.

Recommended Action Use the **service-module integrated Service-Engine** *slot*/*port* **reload** command to reload Cisco UMG.

Problem: You cannot ping the internal address when using the IP unnumbered scheme.

Explanation The IP route table is not correct.

Recommended Action When using IP unnumbered, add a static route that points to the integrated service-engine interface.

Problem: You cannot set the speed of the terminal line from the router side or the Cisco UMG side.

Explanation Cisco UMG does not have a CLI command to set the speed. The speed is set to 9600, 8-N-1 on both the Cisco Unified CallManager and Cisco Unity Express sides. Although Cisco IOS software allows you to change the speed settings, the changes do not take effect.

Online Insertion and Removal

Online insertion and removal (OIR) is possible. To remove the Cisco UMG module, you must first go offline and do a graceful shutdown. See "Going Offline, Reloading, Rebooting, Shutting Down, and Going Back Online" on page 63 and for instructions on gracefully shutting down and removing the module from its slot, see *Installing Cisco Network Modules in Cisco Access Routers*.

Caution To avoid data loss or file corruption, always perform a graceful shutdown of the module before power-cycling the router.

Log and Trace Files

Logging and tracing to the hard disk is turned off by default. Executing the **log trace** command starts the log and trace functions immediately.

To check the log and trace files on the hard disk, use the **show logs** command in Cisco UMG EXEC mode. It displays the list of logs available, their size and their dates of most recent modification.

Each file has a fixed length of 10 MB, and tracing or logging stops automatically when the file reaches this length. New files overwrite the old files.

Examples

Following is sample output:

```
umg-1# show logs
SIZE             LAST_MODIFIED_TIME                          NAME
  1225782   Mon Aug 20 16:55:39 PDT 2007          linux_session.log
     4585   Wed Aug 08 14:52:25 PDT 2007                 install.log
     7883   Mon Aug 20 17:10:00 PDT 2007                      dmesg
  5000139   Mon Aug 20 13:40:37 PDT 2007          messages.log.prev
     9724   Mon Aug 20 17:10:05 PDT 2007                 syslog.log
    10418   Tue Aug 07 13:39:18 PDT 2007             sshd.log.prev
      968   Wed May 09 20:51:34 PDT 2007           dirsnapshot.log
   131357   Thu Aug 09 01:28:31 PDT 2007             shutdown.log
 51325740   Tue Aug 21 17:56:10 PDT 2007               atrace.log
     1534   Mon Aug 20 17:10:04 PDT 2007         debug_server.log
    10274   Tue Jul 31 13:32:51 PDT 2007          postgres.log.prev
     2398   Mon Aug 20 17:10:04 PDT 2007                   sshd.log
104857899   Mon Aug 20 15:13:44 PDT 2007           atrace.log.prev
     4119   Mon Aug 20 17:10:22 PDT 2007              postgres.log
     4264   Mon Aug 20 17:10:07 PDT 2007                  klog.log
   984742   Tue Aug 21 18:04:36 PDT 2007              messages.log
    55435   Wed Aug 08 14:52:06 PDT 2007      shutdown_installer.log
umg-1#
```

Logging Commands in Cisco UMG Configuration Mode

log console

- **log console errors** - Displays error messages (severity=3)
- **log console info** - Displays information messages (severity=6)
- **log console notice** - Displays notices (severity=5)
- **log console warning** - Displays warning messages (severity=4)

log server

- **log server address** *a.b.c.d*

log trace

- **log trace local enable**
- **log trace server enable**
- **log trace server url** *ftp-url*

Logging Commands in Cisco UMG EXEC Mode

log console monitor

- **log console monitor backuprestore backuprestore** { **conf | history | init | operation | server** }
- **log console monitor backup restore all**

log console monitor umg

- **log console monitor umg all**
- **log console monitor umg global** { **0_crash | 1_error | 2_warn | 3_debug | 4_info | all** }
- **log console monitor umg registration** {**0_crash | 1_error | 2_warn | 3_debug | 4_info | all**}
- **log console monitor umg all**
- **log console monitor umg db** { **all | connection | query** }
- **log console monitor umg direx** { **all | message | mgmt | processor | receiver | scheduler | sender** }
- **log console monitor umg lookup** { **all | request** }
- **log console monitor umg routing** { **all | gateway | monitor | route | sender | spool** }
- **log console monitor umg sdl** { **all | cli | messaging | servlet** }
- **log console monitor umg smtp** { **all | debug | error | wire** }
- **log console monitor umg system** { **all | cli** }
- **log console monitor umg translation** { **cache | rule | all** }

log trace

- **log trace boot**
- **log trace buffer save**

Message Transmission

When you add new endpoints to your network, if you have trouble with the endpoints' message receiving and/or transmission capabilities, contact Cisco Support to determine whether you must use the **translation-rule** command, and if so, which form of this command you should use.

Caution Do not use this command unless Cisco Support explicit instructs you to do so.

Each type of endpoint that Cisco UMG supports has different validation rules for accepting messages. So that the receiving messaging systems can properly accept and play back messages, when Cisco UMG forwards messages, it manipulates the message headers or the SMTP headers to correspond to the endpoints' respective validation requirements. To perform these manipulations, Cisco UMG implements translation rules.

For each endpoint type and for Cisco UMG itself, the system applies four parameters for handling SMTP headers and four for handling message headers.

The form of the CLI sets down the following sequence of information for building the rules:

1. Message header or SMTP header
2. Endpoint type
3. from-host (src-host)
4. from-user (src-user)
5. to-host (dest-host)
6. to-user (dest-user)

The command is

translation-rule { message | smtp }{ cue | unity | interchange | umg } { from-host { *text* | *umg-host* } **| from-user** *umg-user* **| to-host** { *text* | *umg-host* } **| to-user** *umg-user* **}**

Therefore for each endpoint type and Cisco UMG, you have the option of configuring the same parameters for both types of headers as required.

The variables and variable definitions for SMTP headers and message headers shown in Table 12 apply to all types of endpoints and to Cisco UMG.

Table 12 Translation Rules for SMTP Headers and Message Headers

Keywords with Associated Variables	Variable and Variable Definition
from-host { *text* | *umg-host* }	*text*: Set source email domain value. *umg-host*: Variable name used for src-host translation.
from-user *umg-user*	*umg-user:* Variable name used for src-user translation.
to-host { *text* | *umg-host* }	*text*: Set destination email domain value. *umg-host*: Variable name used for dest-host translation.
to-user *umg-user*	*umg-user*: Variable name used for dest-user translation

After using the commands according to Cisco Support's instructions, for the new configuration to take effect, save the change to the startup configuration and reload the module.

SUMMARY STEPS

1. **config t**
2. **translation-rule { message | smtp }{ cue | unity | interchange | umg } { from-host** { *text* | *umg-host* } **| from-user** *umg-user* **| to-host** { *text* | *umg-host* } **| to-user** *umg-use*r **}**
3. **end**
4. **show translation-rule { smtp | message }**
5. write memory

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode.
Step 2	**translation-rule { message | smtp } { cue | unity | interchange | umg } { from-user | to-user | from-host | to-host } { umg-user | umg-host }** **Example:** `umg-1(config)# translation-rule smtp cue from-host umg-host`	Specifies the translation rule to be used to manipulate headers for messages.
Step 3	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.
Step 4	**show translation-rule { smtp | message }** **Example:** `umg-1# show translation-rule smtp`	Displays the translation rules.
Step 5	**write memory** **Example:** `umg-1# write memory`	Saves the configuration to the startup configuration.

Examples

The following example illustrates the message translation rule being set for a Cisco Unity Express endpoint and saved to the startup-config. The email domain of the source of the message is to be inserted into the From field of the SMTP header.

```
umg-1# config t
umg-1(config)# translation-rule smtp cue from-host mycompany.com
```

```
Save the change to startup configuration and reload the module for the new configuration
to take effect.
umg-1(config)# end
umg-1# show translation-rule smtp
SMTP Translation Rules -
CUE
From User:                from-user
From Host:                mycompany.com
To User:                  to-user
To Host:                  to-host
UNITY
From User:                from-user
From Host:                umg-host
To User:                  to-user
To Host:                  to-host
INTERCHANGE
From User:                from-user
From Host:                umg-host
To User:                  to-user
To Host:                  to-host
UMG
From User:                from-user
From Host:                from-host
To User:                  to-user
To Host:                  to-host

umg-1# write memory
```

Saving Configuration Changes

Problem: You lost some configuration data.

Recommended Action Copy your changes to the running configuration at frequent intervals. See "Copying Configurations" on page 59.

Problem: You lost configuration data when you rebooted the system.

Explanation You did not save the data before the reboot.

Recommended Action Issue a **copy running-config startup-config** command to copy your changes from the running configuration to the startup configuration. When Cisco UMG reboots, it reloads the startup configuration.

Note Messages are considered application data and are saved directly to the disk in the startup configuration. (They should be backed up on another server in case of a power outage or a new installation.) All other configuration changes require an explicit "save configuration" operation to preserve them in the startup configuration.

Saving and Viewing Log Files

Problem: You must be able to save log files to a remote location.

Recommended Action Log files are saved to disk by default. You can configure Cisco UMG to store the log files on a separate server by using the **log server address** command. Also, you can copy log files on the disk to a separate server if they need to be kept for history purposes, for example:

copy log *filename*.**log url ftp://***ftp-user-id*:*ftp-user-passwd*@*ftp-ip-address*/*directory*

```
umg# copy log messages.log url ftp://admin:messaging@172.168.0.5/log_history
```

Problem: You cannot display the contents of log files.

Recommended Action Copy the log files from Cisco UMG to an external server and use a text editor, such as **vi**, to display the content.

Show Commands

Use all these commands in Cisco UMG EXEC mode.

- **show crash buffer** - Prints recent kernel crash log.
- **show errors** - Displays any errors reported in the messages log.
- **show interfaces gigabitethernet *0-1*** where **gigabitethernet** conforms to IEEE 802.3 and *1-0* is the Ethernet unit number.
- **show interfaces ide *0*** where **ide** is the Integrated Drive Electronics (hard disk) and *0* is the disk unit number.
- **show log name** *word* where *word* is the name identifying the log.
- **show logging** - Displays the console logging options as follows:

Table 13 Console Logging Options

Keyword	**Argument**		
info:	off/on		
notice:	off/on		
warning:	off/on		
errors:	off/on		
fatal:	off/on		
Monitored event Info			
Module	Entity	Activity	Filter
Monitored events active/No monitored events active			
Server Info:			
Log server address:			

- **show logs**: Displays a list of log files.
- **show memory**: Displays memory statistics.

- **show processes cpu:** Displays CPU processes.
- **show processes memory:** Displays RAM utilization.
- **show software directory { downgrade | download }**: Displays configured software information.
- **show software download server:** Displays configured software information.
- **show software licenses**: Displays configured software information.
- **show software packages**: Displays configured software information.
- **show software versions [detail]:** Displays additional subsystem version information
- **show tech-support:** Displays complete system information.
- **show trace buffer:** Prints recent system event messages. Do not use except by permission from Cisco Technical Support.
- **show trace store:** Prints system event messages from hard-drive store - Do not use except by permission from Cisco Technical Support.
- **show store-prev** - Prints system event messages from previous hard-drive store - Do not use except by permission from Cisco Technical Support.
- **show version** - Displays the version of all hardware components.

System Reports

Cisco UMG provides the following system reports:

- Backup and restore history: see "Backing Up Files" on page 46.
- System parameters: see "Displaying Management Data Activity" on page 56 and "Viewing System Activity Messages" on page 57.
- Memory and CPU usage: see "Log and Trace Files" on page 81

Trace Commands

To troubleshoot network configuration in Cisco UMG, use the following commands in EXEC mode.

trace backuprestore

- **trace backuprestore all**
- **trace backuprestore backuprestore { conf | history | init | operation | server | all }**

trace umg

- **trace umg global { 0_crash | 1_error | 2_warn | 3_debug | 4_info | all }**
- **trace umg registration {0_crash | 1_error | 2_warn | 3_debug | 4_info | all}**
- **trace umg all**
- **trace umg db { all | connection | query }**
- **trace umg direx { all | message | mgmt | processor | receiver | scheduler | sender }**
- **trace umg lookup { all | request }**
- **trace umg routing { all | gateway | monitor | route | sender | spool }**

- **trace umg sdl { all | cli | messaging | servlet }**
- **trace umg smtp { all | debug | error | wire }**
- **trace umg system { all | cli }**
- **trace umg translation { cache | rule | all }**

trace all

- **trace all**

trace dbclient

- **trace dbclient all**
- **trace dbclient database { all | connection | execute }**
- **trace dbclient database { garbagecollect | largeobject | mgmt | query | results | transaction }**

trace dns

- **trace dns all**
- **trace dns cache { all | daemon | ethconfig | localzone | startup }**
- **trace dns enablecheck { all | debug | dns_check | dns_query }**
- **trace dns enablecheck { hostname_check | ipv4_check | results }**
- **trace dns resolver { all | receive | send }**
- **trace dns server { all | answer | ask }**

trace management

- **trace management agent {all | debug }**
- **trace management all**

trace ntp

- **trace ntp all**
- **trace ntp ntp { all | clkadj | clkselect | clkvalidity | clockstats | event }**
- **trace ntp ntp { loopfilter | loopstats | packets | peerstats }**

trace security

- **trace security all**
- **trace security policy { all | password | pin }**

trace snmp

- **trace snmp jni { net-snmp | all }**
- **trace snmp agent { all | debug }**
- **trace snmp all**

trace superthread

- **trace superthread all**
- **trace superthread main { all | startup }**
- **trace superthread parser**

trace sysdb

- **trace sysdb all**
- **trace sysdb consumer** { **all | get | lookup | set** }
- **trace sysdb lock** { **acquire | all | release | wait** }
- **trace sysdb producer** { **all | attrCreate | attrDelete | mkdir** }
- **trace sysdb producer** { **nodeAttach | nodeDetach | nodeHandle | rmdir** }
- **trace sysdb provider** { **all | check | get | commit | startup | stop** }
- **trace sysdb traversal** { **all | attribute | directory | node** }
- **trace sysdb utility** { **all | chdir | dealloc | metainfo | namelookup** }

trace udppacer

- **trace udppacer all**
- **trace udppacer udppacer** { **all | block_starve | ccncall | debug | statistics** }

DETAILED STEPS

	Command or Action	Purpose
Step 1	**trace dns resolver** { **all** | **receive** | **send** } **Example:** `umg-1# trace dns resolver all`	Enables tracing for DNS network functions. • **all**—Traces every DNS activity. • **receive**—Traces DNS receiving. • **send**—Traces DNS sending.
Step 2	**trace sysdb all** **Example:** `umg-1# trace sysdb all`	Enables tracing for every sysdb entity and activity.

Step 3	`trace dns all`
	
	Example:
	`umg-1# trace dns all`
		Enables tracing for every DNS event. For example, displays DNS lookups that are performed and results that are given when a domain is verified and resolved using SMTP.

Step 4	**trace dbclient database** { **garbagecollect** | **largeobject** | **mgmt** | **query** | **results** | **transaction** } **Example:** `umg-1# trace dbclient database results`	Enables tracing for client database functions. The following keywords specify the type of traces: • **garbagecollect**—Garbage collection process. • **largeobject**—Large object reads and writes to the database. • **mgmt**—Database management processes. • **query**—Queries performed on the database. • **results**—Results of queries, inserts, and updates. • **transactions**—Start and end of database transactions.