Initial Configuration Tasks

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This chapter describes how to set up your Cisco Unified Messaging Gateway system after you have installed it.

You must configure each messaging gateway in your system. If your endpoints are Cisco Unity Express 3.1 and later versions, you only need to set up autoregistration on one messaging gateway.

With Cisco Unity Express 3.0 or earlier versions, Cisco Unity, and Avaya Interchange endpoints, you must manually provision each one on the messaging gateway associated with it. The messaging gateway on which you manually provision an endpoint becomes that endpoint's primary messaging gateway. You can change the configuration of these types of endpoints only from their primary messaging gateway.

The chapter contains the following sections:

For a brief overview of how the system works, see the "Functional Outline" on page 6.

The "Monitoring the Cisco Unified Messaging Gateway System" chapter covers monitoring tasks, while the "Maintaining the Cisco Unified Messaging Gateway System" chapter covers System Distribution Lists (SDLs) and System Broadcast Messages (SBMs) and also deleting various entities.

Cisco UMG is configured entirely using the command-line interface (CLI). You enter some commands in EXEC mode and others in configuration mode, and still others in submodes. The instructions for each of the tasks cover entering the mode to be used.

For instructions on entering and exiting command modes, see the "Entering and Exiting the Command Environment" chapter.

Revisiting the Installation Configuration

If you used the interactive post-installation wizard, you will have completed these configurations. If you did not choose this method of installation or if you want to change any of the configurations, use these instructions to:

- Specify the messaging gateway hostname
- Specify the messaging gateway location ID
- Specify the messaging gateway domain name
- (Optional) Specify DNS servers if necessary
- (Optional) Spoken name capability—Enabling this functionality permits a message sender's spoken name to be played at the beginning of the received message. Disabling spoken name capability saves bandwidth. Although you can set this differently on different messaging gateways, for best performance, use the same setting for this on all messaging gateways throughout your system.

  Note To disable spoken-name capability, use the **no** form of this command.

- Verify settings are correct by using appropriate **show** commands

Prerequisites

The following information is required to configure Cisco UMG:

- Hostname
- Location ID, unique within the solution network
- Name of the messaging gateway's domain
- IP addresses of the DNS server(s) the messaging gateway will use (if applicable)

Note A DNS server is only necessary if you have Cisco Unity endpoints, in which case it is essential to provide failover support for these endpoints. You can use a maximum of four DNS servers.

SUMMARY STEPS

1. **config t**
2. **network local messaging-gateway** *location-id*
3. **hostname** *hostname*
4. **ip { domain-name** *domain-name* **| name-server** *name-server* }
5. **ip { domain-name** *domain-name* **| name-server** *name-server* }
6. **spoken-name enable**
7. **end**
8. **show hosts**
9. **show messaging-gateway [** *location-id* **]**
10. **show spoken-name**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `se-10-0-0# config t`	Enters configuration mode.
Step 2	**network local messaging-gateway** *location-id* **Example:** `se-10-0-0(config)# network local messaging-gateway 50000`	Specifies the current configuring messaging gateway's location ID.
Step 3	**hostname** *hostname* **Example:** `se-10-0-0(config)# hostname umg-1`	Specifies the messaging gateway's hostname.
Step 4	**ip { domain-name** *domain-name* | **name-server** *name-server* } **Example:** `umg-1(config)# ip domain-name mycompany.com`	Specifies the domain name (not including the hostname) or the DNS server(s) (max. 4) for the current configuring messaging gateway.
Step 5	**ip { domain-name** *domain-name* | **name-server** *name-server* } **Example:** `umg-1(config)# ip name-server 192.0.2.24`	Specifies the domain name (not including the hostname) or the DNS server(s) (max. 4) for the current configuring messaging gateway.
Step 6	**spoken-name enable** **Example:** `umg-1(config)# spoken-name enable`	Enables spoken name support on the current configuring messaging gateway. For best performance, this setting should be the same on all messaging gateways in the system.
Step 7	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.
Step 8	**show hosts** **Example:** `umg-1# show hosts`	Displays the hostname and domain name.

	Command or Action	Purpose
Step 9	**show messaging-gateway [** *location-id* **]** **Example:** `umg-1# show messaging-gateway`	Displays the location ID and hostname of any peer messaging gateways that have been configured, whether NAT is enabled for any of them, and the location ID of the current configuring messaging gateway. If a location ID other than the current configuring messaging gateway is specified, displays the named details for the specified messaging gateway.
Step 10	**show spoken-name** **Example:** `umg-1# show spoken-name`	Indicates whether spoken name support is enabled.

Examples

The following output illustrates the use of these commands.

```
se-10-0-0# config t
se-10-0-0(config)# network local messaging-gateway 50000
se-10-0-0(config)# hostname umg-1
umg-1(config)# ip domain-name mycompany.com
umg-1(config)# ip name-server 192.0.2.24
umg-1(config)# spoken-name enable
umg-1(config)# end
umg-1# show hosts
Hostname:      umg-1
Domain:        mycompany.com
umg-1# show messaging-gateway
LocationID     Hostname                              NAT
-------------------------------------------------------------
5              sj.mycompany.com                      disabled
55             sf.mycompany.com                      disabled
555            ny.mycompany.com                      disabled

Local Gateway ID: 50000
umg-1# show spoken-name
Spoken name is enabled.
umg-1#
```

Setting Backup Parameters

Cisco UMG backup and restore functions use an FTP server to store and retrieve data. The backup function copies the files from Cisco UMG to the FTP server and the restore function copies the files from the FTP server to Cisco UMG. The FTP server can reside anywhere in the network as long as the backup and restore functions can access it with an IP address or hostname.

All Cisco UMG backup files are stored on the specified server. You can copy the backup files to other locations or servers, if necessary.

The backup parameters specify the FTP server to use for storing Cisco UMG backup files and the number of backups that are stored before the system overwrites the oldest one.

Note Cisco UMG automatically assigns an ID to each successful backup. To find out what ID has been assigned to your backup, use the **show backup history** command. For more information, see "Restoring Files" on page 49.

To backup or restore files, see the "Backing Up and Restoring Data" chapter.

Prerequisites

- Verify that the backup server is configured.
- Verify that an FTP administrator or other user who can log in to the FTP server has full permission on the FTP server, such as read, write, overwrite, create, and delete permissions for files and directories.
- FTP server URL
- Username and password of the FTP server login
- Number of revisions to save before the oldest backup is overwritten

SUMMARY STEPS

1. **config t**
2. **backup server url** *backup-ftp-url* **username** *backup-ftp-usrname* **password** *backup-ftp-password*
3. **backup revisions number** *number*
4. **end**
5. **show backup**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** umg-1# config t	Enters configuration mode.
Step 2	**backup server url** *ftp-url* **username** *ftp-username* **password** *ftp-password*}	Sets the backup parameters. **Note** The backup server must be configured before the backup revisions can be configured. • **server url**—The *ftp-url* value is the URL to the network FTP server where the backup files will be stored. • The *ftp-username* and *ftp-password* values are the username and password for the network FTP server. In the example, **main** is the hostname of the FTP server and **backups** is the directory where backup files are stored.
	Example: umg-1(config)# **backup server url ftp://main/backups username "admin" password "wxyz"** umg-1(config)# **backup server url ftp://192.0.2.15/backups username "admin" password "wxyz"**	

	Command or Action	Purpose
Step 3	**backup revisions** *number* **Example:** `umg-1(config)# backup revisions 5`	Sets the number of backup files that will be stored. When this number is reached, the system deletes the oldest stored file.
Step 4	**exit** **Example:** `umg-1(config)# exit`	Exits configuration mode.
Step 5	**show backup** **Example:** `umg-1# show backup`	Displays the backup server configuration information, including the FTP server URL and the maximum number of backup files available.

Examples

The following example configures a backup server and displays the **show backup** output:

```
umg-1# config t
umg-1(config)# backup revisions 5
umg-1(config)# backup server url ftp://main/umg-1backups username "admin" password "wxyz"
umg-1#(config)# end
umg-1# show backup
Server URL:                          ftp://branch/umg-1backups
User Account on Server:              backupadmin
Security Protected:                  no
Security Enforced:                   no
Number of Backups to Retain:         5
umg-1#
```

Configuring Peer Messaging Gateways

You can configure multiple peer Cisco UMGs. Location IDs for peer messaging gateways must be unique throughout the solution network.

Not only must you configure peers on each messaging gateway, you must also configure each peer as a messaging gateway. For this, use all the procedures in this chapter.

To delete a peer messaging gateway, see "Deleting Peer Messaging Gateways" on page 73.

Note The following commands do not validate the hostname or IP address of the peer messaging gateway.

Prerequisites

The following information is required to configure a peer Cisco UMG:

- A location ID for the peer messaging gateway that is unique throughout the system.
- A hostname.

SUMMARY STEPS

1. **config t**
2. **network messaging-gateway** *location-id* { *hostname* | *ip-address* }
3. **end**
4. **show messaging-gateway** [*location-id*]
5. **show messaging-gateway** [*location-id*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode
Step 2	**network messaging-gateway** *location-id* **{** *hostname* **|** *ip-address* **}** **Example:** `umg-1(config)# network messaging-gateway 5 sj.mycompany.com`	Configures a peer messaging gateway. The hostname can be in the form sj.mycompany.com or it can be an IP address.
Step 3	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.
Step 4	**show messaging-gateway** [*location-id*] **Example:** `umg-1# show messaging-gateway`	Displays the location ID and hostname of any peer messaging gateways that have been configured, whether NAT is enabled for any of them, and the location ID of the current configuring messaging gateway. If a location ID other than the current configuring messaging gateway is specified, displays the named details for the specified messaging gateway.
Step 5	**show messaging-gateway** [*location-id*] **Example:** `umg-1# show messaging-gateway 5`	Displays the location ID and hostname of any peer messaging gateways that have been configured, whether NAT is enabled for any of them, and the location ID of the current configuring messaging gateway. If a location ID other than the current configuring messaging gateway is specified, displays the named details for the specified messaging gateway.

Examples

The following output illustrates the use of these commands.

```
umg-1# config t
Enter configuration commands, one per line.  End with CNTL/Z.
umg-1(config)# network messaging-gateway 5 sj.mycompany.com
umg-1(config)# end
umg-1# show messaging-gateway
LocationID     Hostname                              NAT
-------------------------------------------------------------
5              sj.mycompany.com                      disabled
55             sf.mycompany.com                      disabled
555            ny.mycompany.com                      disabled

Local Gateway ID: 51000
umg-1# show messaging-gateway 5
LocationID:    5
Hostname:      sj.mycompany.com
NAT:           disabled

umg-1#
```

Message Handling

Default Destination

You can set a default destination (‘network default-route’) for undeliverable messages; the destination can be either a messaging gateway or an endpoint.

Notice of Delayed Delivery or Non-delivery

If a message is not delivered within one hour of being sent, by default Cisco UMG sends a delayed-delivery receipt (DDR) to the message-sender and a non-delivery receipt (NDR) after six hours. These settings are system-wide, they cannot be applied to individual endpoints.

Changing the defaults is optional. If you do not make the settings described in the following procedure, the system uses the defaults.

Prerequisites

The following information is required to configure the default destination for unroutable messages:

- The location ID of the endpoint or the messaging gateway to which unroutable messages are to be sent.

The following information is required to change the DDR and NDR settings:

- Delay in hours to be substituted for the current settings (defaults are DDR: 1 hour, NDR: 6 hours).

SUMMARY STEPS

1. **config t**
2. **network default-route** *location-id*
3. **ddr timeout** *0-24*
4. **ndr timeout** *1-48*
5. **end**
6. **show network default-route**
7. **show ddr timeout**
8. **show ndr timeout**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode.
Step 2	**network default-route** *location-id* **Example:** `umg-1(config)# network default-route 987654`	Sets the default destination for undeliverable messages.
Step 3	**ddr timeout** <*0-24*> **Example:** `umg-1(config)# ddr timeout 2`	Sets the amount of time (in hours) before the system generates a DDR. Range: 1-24 hours. Set 0 to disable this feature. Default: 1 hour.
Step 4	**ndr timeout** <*1-48*> **Example:** `umg-1(config)# ndr timeout 12`	Sets the amount of time (in hours) before the system generates an NDR. Range: 1-48 hours. Default: 6 hours.
Step 5	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.

Step 6	`show ddr timeout`
	
	Example:
	`umg-1# show ddr timeout`
		Displays the delay before the system generates a DDR.

Step 7	`show ndr timeout`
	
	Example:
	`umg-1# show ndr timeout`
		Displays the delay before the system generates an NDR.

Examples

The following example illustrates default destination for undeliverable messages being set to the device with the location ID 51000, and the DDR and NDR timeouts being set for the system.

```
umg-1# config t
Enter configuration commands, one per line.  End with CNTL/Z.
umg-1(config)# network default-route 51000
umg-1(config)# ddr timeout 2
umg-1(config)# ndr timeout 12
umg-1(config)# end
umg-1# show network default-route
Default route is location 51000.

umg-1# show ddr timeout
Timeout window for DDR messages is 2 hours.

umg-1# show ndr timeout
Timeout window for NDR messages is 12 hours.

umg-1#
```

Configuring Endpoint Autoregistration Support

For endpoints that are to autoregister with Cisco UMG, you must configure registration, connection, and authentication parameters.

You can configure multiple username/password sets on the same messaging gateway.

Note Only Cisco Unity Express 3.1 and later versions support autoregistration.

The endpoints themselves must be configured to present the corresponding information in a registration request.

The default registration period expires after 1440 minutes. After that time, any new configurations such as username and password take effect.

For an overview of the relevant Cisco Unity Express configuration, see "Appendix A: Cisco Unity Express Endpoint Autoregistration to Cisco Unified Messaging Gateway 1.0" on page 91.

In the system logic, autoregistration is implicitly allowed for all endpoints, therefore to prevent autoregistration you must use the **block** command described in this section or in "Blocking Endpoint Registration" on page 76.

To clear the data associated with an autoregistered endpoint, see "Deleting or Clearing Endpoints" on page 75.

Prerequisites

The following information is required to configure endpoint autoregistration parameters on Cisco UMG.

- Username and password for endpoints to present to Cisco UMG at registration
- (Optional) Location IDs for endpoints that you want to prevent from autoregistering
- (Optional) Registration expiration period, in minutes

SUMMARY STEPS

1. **config t**
2. **registration**
3. **username** *username* **password** {**text** | **encrypted** } *password*
4. **expiration** *integer*
5. **block location-id** *location-id*
6. **end**
7. **end**
8. **show run** [**paged** | | [**begin** *word* | **exclude** *word* | **include** *word* | **page**]
9. **write [erase | memory | terminal]**
10. **show start** [**paged** | | [**begin** *word* | **exclude** *word* | **include** *word* | **page**]
11. **show registration** {**block** | **status** | **users** }

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** umg-1# config t	Enters configuration mode.
Step 2	**registration** **Example:** umg-1(config)# registration	Enters registration configuration mode.
Step 3	**username** *username* **password { text | encrypted }** *password* **Example:Example:** umg-1(config-reg)# username bob password text cue31	Sets username and password.
Step 4	**expiration** *integer* **Example:** umg-1(config-reg)# expiration 2000	(Optional) Sets the length of time (in minutes) after which autoregistration expires.
Step 5	**block location-id** *location-id* **Example:Example:** umg-1(config-reg)# block location-id 29	Prevents the specified endpoint from autoregistering.

	Command or Action	Purpose
Step 6	**end** **Example:** `umg-1(config-reg)# end`	Exits registration configuration mode.
Step 7	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.
Step 8	**show run [paged | | [begin** *word* **| exclude** *word* **| include** *word* **| page]** **Example:** `umg-1# show run | inc username`	Displays the running configuration.
Step 9	**write [erase | memory | terminal]** **Example:** `umg-1# write memory`	Writes the running configuration to memory or terminal or • Erases NV memory • Writes to NV memory • Writes to terminal.
Step 10	**show start [paged | | [begin** *word* **| exclude** *word* **| include** *word* **| page]** **Example:** `umg-1 show start | inc username`	Displays the startup configuration.
Step 11	**show registration { block | status | users }** **Example:** `umg-1# show registration block`	Displays endpoint registration status.

Examples

The following example shows an expiration being set for all autoregistered endpoints. A block is set, then a username and password. Finally, the results of these operations are displayed. Note that the expiration is not displayed, because the **no expiration** command caused the default to be set.

```
umg-1# config t
Enter configuration commands, one per line.  End with CNTL/Z.
umg-1(config)# registration
umg-1(config-reg)# expiration 20000
Currently registered endpoint expiration will be unaffected.
umg-1(config-reg)# block location-id 33
umg-1(config-reg)# username bob password text cue31
umg-1(config-reg)# end
umg-1(config)# end
umg-1 show run | inc username
 username bob password text cue31
```

```
umg-1# write memory
umg-1 show start | inc username
 username bob password text cue31
umg-1# show registration block
UMG registration block list :
        location-id 33
se-10-1-12-95# show registration status
Endpoint registration stats :
        Auto-registered : 1
        Offline : 10
        Total number : 11

Auto-registered endpoint :
         Loc. 40000 : cue, registered at 19-Aug-07 17:02:31:212

Offline auto-registered endpoint :
         Loc. 40 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 41 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 42 : cue, deregistered/unreachable since 17-Aug-07 16:56:32:169
         Loc. 43 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 44 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 45 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 46 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 47 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
         Loc. 48 : cue, deregistered/unreachable since 17-Aug-07 16:56:45:177
umg-1#
```

Provisioning Endpoints Manually

You must manually provision Cisco Unity and Avaya Interchange endpoints to Cisco UMG. Endpoints of the type Cisco Unity Express 3.0 or earlier versions must also be manually provisioned.

The configuring Cisco UMG automatically becomes the primary messaging gateway for the endpoint being provisioned.

It is most efficient if you group your endpoints by type (Cisco Unity, Cisco Unity Express, Avaya Interchange) before provisioning them, because each type has one or two parameters that are different from those required for other types.

Note For Cisco Unity endpoints, to provide failover support you need at least one DNS server (maximum 4) so that you can map the Cisco UMG domain name to two IP addresses on it (them): primary messaging gateway and secondary messaging gateway.

When you configure a domain for an endpoint, Cisco UMG does an MX lookup on the domain provided and uses those host addresses.

If you have multiple endpoints with the same prefix, you must use the **number-only** addendum to the **prefix** command to specify the range of extensions handled by the endpoint you are provisioning. All endpoints sharing a prefix must use this addendum - in other words, you cannot have endpoint 1 with just prefix 1, and endpoint 2 with prefix 1 plus a range of extensions.

After provisioning each endpoint and before leaving the endpoint configuration mode you must enable the endpoint.

If you try to provision an endpoint with a location ID that is already in use, and if both location ID and endpoint type actually match the existing one, you will re-configure the first one. If the location ID and the type do not match the existing one, the system will warn you, for example, “Invalid endpoint type.

The specified type does not match the existing endpoint." If you use a location ID similar to one already in your network, the system will warn you, for example, "Possible conflict with existing location ID(s): 3, 333."

To delete an endpoint, see "Deleting or Clearing Endpoints" on page 75.

Note The system does not allow you to change the configurations for an autoregistered endpoint.

Prerequisites

In the following, note that what Cisco UMG refers to as **endpoint** *location-id* is the same as the Cisco Unity Express **network location-id** *number*.

For each endpoint type, you have different parameters to set:

Table 8 Endpoint Types: Cisco Unity Express 3.0 or earlier versions

Keyword	Description
broadcast-id *broadcast-id*	(Optional) Endpoint's broadcast ID. This is an alphanumeric string (range: 1-32) that cannot include spaces.
domain *domain*	Fully qualified name of domain to which endpoint belongs; for example, sj.mycompany.com.
messaging-gateway secondary *location-id*	(Optional) Location ID of secondary messaging-gateway.
hostname *hostname*	Endpoint's hostname or IP address.
prefix *prefix*	Messaging system telephone number prefix—phone number prefix that is added to a subscriber's extension (range: 1-15 digits).
extension *extension*	Subscribers' extension (range: 1-15 digits).

Table 9 Endpoint Types: Cisco Unity

Keyword	Description
domain *domain*	Fully qualified name of domain to which endpoint belongs; for example, sj.mycompany.com
hostname *hostname*	Endpoint's hostname or IP address.
messaging-gateway secondary *location-id*	Location-ID of the endpoint's secondary messaging gateway.
prefix *prefix*	Messaging system telephone number prefix that is added to a subscriber's extension (range: 1-15 digits).
extension *extension*	Subscribers' extension (range: 1-15 digits).
serial-number *serial-number*	(Optional) Endpoint's serial number.

Table 10 Endpoint Types: Avaya Interchange

Keyword	Description
domain *domain*	Fully qualified name of endpoint's domain; for example, sj.mycompany.com..
hostname *hostname*	Endpoint's hostname or IP address.
prefix *prefix*	Messaging system telephone number prefix—phone number prefix that is added to a subscriber's extension (maximum 15 digits)
extension *extension*	Subscribers' extension (range: 1-15 digits).

Note Avaya Interchange does not support a secondary messaging gateway.

Note When you use a **show** command to display the domain name, only the truncated name appears; for example, "mycompany".

Note The **default** command available in the endpoint configuration mode serves as an alternative to the **no** command when used in combination with any of the other commands available in that mode; for example, **hostname default**.

SUMMARY STEPS

1. **config t**
2. **endpoint** *location-id* **{ unity | interchange | cue }**
3. **hostname** *hostname*
4. (Optional) **messaging-gateway secondary** *location-id*
5. **domain** *domain*
6. Either:
   a. **prefix** *prefix*
      or
   b. **prefix** *prefix* **number-only**
      extension *extension*
      end
7. (Optional) **broadcast-id** *broadcast-id*
8. (Optional) **serial-number** *serial-number*
9. **enable**
10. **end**
11. **end**
12. **show endpoint** { **local | network** } [*location-id* | **filter** *filter*]
13. **show mailbox** {*location-id* | **prefix** *prefix* } [*mailbox* | **filter** *filter*]

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode.
Step 2	**endpoint** *location-id* **{ unity | interchange | cue }** **Example:** `umg-1(config)# endpoint 77777 unity`	Enters endpoint configuration mode and identifies the endpoint to be provisioned by location and type.
Step 3	**hostname** *hostname* **Example:** `umg-1(config-endpoint)# unity-7`	Specifies the endpoint's hostname or IP address.
Step 4	**messaging-gateway secondary** *location-id* **Example:** `umg-1(config-endpoint)# messaging-gateway secondary 51000`	(Optional) Specifies the endpoint's secondary messaging gateway by means of its location ID. **Note** Avaya Interchange does not support secondary messaging gateways.
Step 5	**domain** *domain* **Example:** `umg-1(config-endpoint)# domain sj.mycompany.com`	Specifies the endpoint's domain name.

Step 6	**a) prefix** *prefix*
	
	Example:
	`umg-1(config-endpoint)# prefix 231`
	
	b) **prefix** *prefix* **number-only**
	extension *extension*
	end
	
	Example:
	`umg-1(config-endpoint)# prefix 231 number-only`
	`umg-1(config-endpoint-extension)# extension 777`
	`umg-1(config-endpoint-extension)# end`
		a. Specifies the endpoint's phone number prefix (range: 1-9 digits).
		b. Specifies the prefix, enters endpoint extension configuration mode, specifies the range of extensions (range:1-15 digits), and then leaves endpoint extension configuration mode.
		
		Note If you have multiple endpoints with the same prefix, you must use the **number-only** addendum (keyword) to the **prefix** command to specify the range of extensions handled by the endpoint you are provisioning.

Step 7	**broadcast-id** *broadcast-id* **Example:** `umg-1(config-endpoint)# broadcast-id 222222`	(Optional) Specifies the endpoint's broadcast ID, an alphanumeric string (range: 1-10); cannot include spaces). Avaya Interchange does not support the broadcast messaging function.
Step 8	**serial-number** *serial-number* **Example:** `umg-1(config-endpoint)# serial-number-13`	(Optional) Specifies the endpoint's serial number.

	Command or Action	Purpose
Step 9	**enable** **Example:** `umg-1(config-endpoint)# enable`	Enables the endpoint.
Step 10	**end** **Example:** `umg-1(config-endpoint)# end`	Exits endpoint configuration mode and enters configuration mode.
Step 11	**end** **Example:** `umg-1(config-endpoint)# end`	Exits configuration mode.
Step 12	**show endpoint { local | network }** [*location-id* | **filter** *filter*] **Example:** `umg-1# show endpoint local 77777`	Displays a list of local or remote endpoints on the current configuring messaging gateway. If you have many endpoints, you might get this message: "Too many results, please use filter to limit the search result. Only the first 500 endpoints will be displayed." The filter is any part of a location ID. For example, if you had the location IDs 123, 234, and 345 and you used a filter of 23 you would match 123 and 234. If you used a filter of 34 you would match 234 and 345. Regular expressions are not supported.
Step 13	**show mailbox** {*location-id* | **prefix** *prefix* } [*mailbox* | **filter** *filter*] **Example:** `umg-1# show mailbox 77777`	Displays a list of the mailboxes associated with the specified endpoint.

Examples

The following example is an example of how to manually provision a Cisco Unity endpoint. An endpoint of this type requires a prefix, and because the number-only attribute has been used, it can be safely assumed that at least two of the user's Cisco Unity endpoints are using the same prefix.

```
umg-1# config t
umg-1(config)# endpoint 77777 unity
umg-1(config-endpoint)# messaging-gateway secondary 51000
umg-1(config-endpoint)# domain sj.mycompany.com
umg-1(config-endpoint)# hostname unity-7
umg-1(config-endpoint)# prefix 231 number-only
umg-1(config-endpoint-extension)# extension 777
umg-1(config-endpoint-extension)# end
umg-1(config-endpoint)# serial-number 13
umg-1(config-endpoint)# broadcast-id 222222
umg-1(config-endpoint)# enable
umg-1(config-endpoint)# end
umg-1(config)# end
se-10-1-12-95# show endpoint local 77777
Location Id:           77777
Hostname:              unity-7
Domain:                sj.mycompany.com
Prefix:                231
NAT:                   Enabled
Type:                  Unity
Serial-number:         13
Addressing Mode:       Number-only
Primary Gateway ID:    50000
Secondary Gateway ID:  51000
Status:                Disabled
umg-1#
```

Setting Up NAT Entries

If you have NAT devices in your network, and they are between messaging gateways and/or endpoints, you must configure NAT entries on Cisco UMG for both messaging gateways and endpoints. For a message to reach its destination, Cisco UMG must know the external HTTP IP address and port number and the external VPIM IP address and port number of the NAT device in front of the destination.

Note When multiple messaging gateways are behind the same NAT device, configure the endpoints so that they can talk to messaging gateways on ports other than 80/25, because multiple endpoints may be sharing the same external IP address.
(When Cisco Unity Express registers with Cisco UMG, it has the option to specify the HTTP and SMTP ports to match the external PORT used in your setup. For reference, see "Appendix A: Cisco Unity Express Endpoint Autoregistration to Cisco Unified Messaging Gateway 1.0" on page 91)

Prerequisites

For each endpoint and peer messaging gateway in your system, the following information is required to set up NAT entries:

- Location ID of the device
- VPIM external IP address and listening port
- HTTP external IP address and listening port

SUMMARY STEPS

1. **config t**
2. **nat location** *location-id*
3. **http external** *ip port*
4. **vpim external** *ip port*
5. **end**
6. **end**
7. **show nat location** *location-id*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** umg-1# config t	Enters configuration mode.
Step 2	**nat location** *location-id* **Example:** umg-1(config)# nat location 77777	Enters NAT configuration mode to configure NAT settings for the specified device.
Step 3	**http external** *ip port* **Example:** umg-1(config-nat)# http external 192.0.2.13 8080	Configures NAT entry for HTTP protocol, setting external IP address and listening port (default port is 80).
Step 4	**vpim external** *ip port* **Example:** umg-1(config-nat)# vpim external 192.0.2.13 26	Configures NAT entry for VPIM protocol, setting external IP address and listening port (default port is 25).
Step 5	end **Example:** umg-1(config-nat)# end	Exits NAT configuration mode.

	Command or Action	Purpose
Step 6	**end** **Example:** `umg-1(config)# end`	Exits configuration mode.
Step 7	**show nat location** *location-id* **Example:** `umg-1# show nat location 77777`	Lists out configured NAT entries for the device.

Examples

The following example illustrates the the method for configuring NAT.

```
umg-1# config t
umg-1(config)# nat location 77777
umg-1(config-nat)# vpim external 192.0.2.13 26
umg-1(config-nat)# http external 192.0.2.13 8080
umg-1(config-nat)# end
umg-1(config)# end
umg-1# show nat location 77777
Protocol    Ext-IP             Ext-Port
---------------------------------------
HTTP        192.0.2.13         8080
SMTP        192.0.2.13         26

umg-1#
```

Configuring NTP Servers

During the software postinstallation process, the Network Time Protocol (NTP) server may have been configured. If it was not configured, or if you want to change the configuration, use this procedure to add or delete NTP servers. Cisco UMG supports up to three NTP servers.

Adding NTP Servers

You can specify an NTP server using its IP address or its hostname.

Cisco UMG uses the DNS server to resolve the hostname to an IP address and stores the IP address as an NTP server. If DNS resolves the hostname to more than one IP address, Cisco UMG randomly chooses one of the IP addresses that is not already designated as an NTP server. If you do not want to go with random choice, set the **prefer** attribute for one server.

To configure an NTP server with multiple IP addresses for a hostname, repeat the configuration steps using the same hostname. Each iteration assigns the NTP server to its remaining IP addresses.

SUMMARY STEPS

1. **config t**
2. **ntp server** {*hostname* | *ip-address*} [**prefer**]
3. **end**
4. **show ntp status**
5. **show ntp configuration**
6. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode.

Step 2	**ntp server** {*hostname* | *ip-address*} [**prefer**]
	
	Example:
	`umg-1(config)# ntp server 192.0.2.14`
	`umg-1(config)# ntp server 192.0.2.17 prefer`
		Specifies the hostname or IP address of the NTP server.
		
		If more than one server is configured, the server with the **prefer** attribute is used before the others.

Step 3	**end** **Example:** `umg-1(config)# exit`	Exits configuration mode.
Step 4	**show ntp status** **Example:** `umg-1# show ntp status`	Displays the NTP subsystem status.
Step 5	**show ntp configuration** **Example:** `umg-1# show ntp configuration`	Displays the configured NTP servers.
Step 6	**copy running-config startup-config** **Example:** `umg-1# copy running-config startup-config`	Copies the configuration changes to the startup configuration.

Examples

The following commands configure the NTP server:

```
umg-1# config t
umg-1(config)# ntp server 192.0.2.14
umg-1(config)# exit
umg-1#
```

The output from the **show ntp status** command looks similar to the following:

```
umg-1# show ntp status

NTP reference server 1:       10.100.6.9
Status:                       sys.peer
Time difference (secs):       3.268110099434328E8
Time jitter (secs):           0.1719226837158203
umg-1#
```

The following example configures an NTP server with a hostname that points to two IP addresses, 192.0.2.14 and 192.0.2.13:

```
umg-1# config t
umg-1(config)# ntp server NTP.mine.com
umg-1(config)# exit
umg-1#

umg-1# config t
umg-1(config)# ntp server NTP.mine.com
umg-1(config)# exit
umg-1#
```

The output from the **show ntp status** command might look similar to the following:

```
umg-1# show ntp status

NTP reference server 1:       192.0.2.14
Status:                       sys.peer
Time difference (secs):       3.268110099434328E8
Time jitter (secs):           0.1719226837158203

NTP reference server 1:       192.0.2.13
Status:                       sys.peer
Time difference (secs):       3.268110099434328E8
Time jitter (secs):           0.1719226837158203
umg-1#
```

Removing an NTP Server

Remove an NTP server using its IP address or hostname.

SUMMARY STEPS

1. **config t**
2. **no ntp server** {*hostname* | *ip-address*}
3. **exit**
4. **show ntp status**
5. **show ntp configuration**
6. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** `umg-1# config t`	Enters configuration mode.

Step 2	**no ntp server** {*hostname* | *ip-address*}
	
	Example:
	`umg-1(config)# no ntp server 192.0.2.14`
	`umg-1(config)# no ntp server myhost`
		Specifies the hostname or IP address of the NTP server to remove.

Step 3	**exit** **Example:** `umg-1(config)# exit`	Exits configuration mode.
Step 4	**show ntp status** **Example:** `umg-1# show ntp status`	Displays the NTP subsystem status.
Step 5	**show ntp configuration** **Example:** `umg-1# show ntp configuration`	Displays the configured NTP servers.
Step 6	**copy running-config startup-config** **Example:** `umg-1# copy running-config startup-config`	Copies the configuration changes to the startup configuration.

Displaying NTP Server Information

The following commands are available to display NTP server configuration information and status:

- **show ntp associations**
- **show ntp servers**
- **show ntp source**
- **show ntp status**

The following is sample output for the **show ntp associations** command:

```
umg-1# show ntp associations

ind assID status  conf reach auth condition  last_event cnt
===========================================================
  1 61253  8000   yes   yes  none    reject
```

The following is sample output for the **show ntp servers** command:

```
umg-1# show ntp servers

     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
 1.100.6.9       0.0.0.0         16 u    - 1024    0    0.000    0.000 4000.00
space reject,       x falsetick,       . excess,          - outlyer
+ candidate,        # selected,        * sys.peer,        o pps.peer
```

The following is sample output for the **show ntp source** command:

```
umg-1# show ntp source

127.0.0.1: stratum 16, offset 0.000013, synch distance 8.67201
0.0.0.0:        *Not Synchronized*
```

The following is sample output for the **show ntp status** command:

```
umg-1# show ntp status

NTP reference server :        10.100.6.9
Status:                       reject
Time difference (secs):       0.0
Time jitter (secs):           4.0
```

Setting the Time Zone

Typically, you set the time zone during installation. If you did not, or you want to change it, to set the time zone, use the **clock timezone** command in Cisco UMG configuration mode. The system will offer you a range of options to choose from.

To display the time zone, use the **show clock** command in Cisco UMG EXEC mode.

Examples

```
umg-1# config t
Enter configuration commands, one per line.  End with CNTL/Z.
umg-1(config)# clock timezone
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
1) Africa            4) Arctic Ocean     7) Australia       10) Pacific Ocean
2) Americas          5) Asia             8) Europe
3) Antarctica        6) Atlantic Ocean   9) Indian Ocean
#? 2
Please select a country.
 1) Anguilla              18) Ecuador              35) Paraguay
 2) Antigua & Barbuda     19) El Salvador          36) Peru
 3) Argentina             20) French Guiana        37) Puerto Rico
 4) Aruba                 21) Greenland            38) St Kitts & Nevis
 5) Bahamas               22) Grenada              39) St Lucia
 6) Barbados              23) Guadeloupe           40) St Pierre & Miquelon
 7) Belize                24) Guatemala            41) St Vincent
 8) Bolivia               25) Guyana               42) Suriname
 9) Brazil                26) Haiti                43) Trinidad & Tobago
10) Canada                27) Honduras             44) Turks & Caicos Is
11) Cayman Islands        28) Jamaica              45) United States
12) Chile                 29) Martinique           46) Uruguay
13) Colombia              30) Mexico               47) Venezuela
14) Costa Rica            31) Montserrat           48) Virgin Islands (UK)
```

```
15) Cuba                  32) Netherlands Antilles  49) Virgin Islands (US)
16) Dominica              33) Nicaragua
17) Dominican Republic    34) Panama
#? 45
Please select one of the following time zone regions.
 1) Eastern Time
 2) Eastern Time - Michigan - most locations
 3) Eastern Time - Kentucky - Louisville area
 4) Eastern Time - Kentucky - Wayne County
 5) Eastern Standard Time - Indiana - most locations
 6) Eastern Standard Time - Indiana - Crawford County
 7) Eastern Standard Time - Indiana - Starke County
 8) Eastern Standard Time - Indiana - Switzerland County
 9) Central Time
10) Central Time - Michigan - Wisconsin border
11) Central Time - North Dakota - Oliver County
12) Mountain Time
13) Mountain Time - south Idaho & east Oregon
14) Mountain Time - Navajo
15) Mountain Standard Time - Arizona
16) Pacific Time
17) Alaska Time
18) Alaska Time - Alaska panhandle
19) Alaska Time - Alaska panhandle neck
20) Alaska Time - west Alaska
21) Aleutian Islands
22) Hawaii
#? 16

The following information has been given:

        United States
        Pacific Time

Therefore TZ='America/Los_Angeles' will be used.
Is the above information OK?
1) Yes
2) No
#? 1

Local time is now:      Mon Aug 27 17:23:54 PDT 2007.
Universal Time is now:  Tue Aug 28 00:23:54 UTC 2007.
Save the change to startup configuration and reload the module for the new timez
one to take effect.
umg-1(config)#
```

Configuring Logging Operations

Cisco UMG captures messages that describe activities in the system. These messages are collected and directed to a messages.log file on the Cisco UMG module hard disk, the console, or an external system log (syslog) server. The messages.log file is the default destination.

This section describes the procedure for configuring an external server to collect the messages. To view the messages, see "Viewing System Activity Messages" on page 57.

Note The external server must be configured to listen on UDP port 514 for traffic coming from the IP address of the Cisco UMG.

Prerequisites

You need the hostname or IP address of the designated log server.

SUMMARY STEPS

1. **config t**
2. **log server address** {*hostname* | *ip-address*}
3. **exit**
4. **show running-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**config t** **Example:** umg-1# config t	Enters configuration mode.
Step 2	**log server address** {*hostname* | *ip-address*} **Example:** umg-1(config)# **log server address 10.187.240.31** umg-1(config)# **log server address logpc**	Specifies the hostname or IP address of the NTP server designated as the log server.
Step 3	**exit** **Example:** umg-1(config)# exit	Exits configuration mode.
Step 4	**show running-config** **Example:** umg-1# show running-config	Displays the system configuration, which includes the configured log server.

Examples

The output from the **show running-config** command looks similar to the following:

```
umg-1# show running-config

clock timezone America/Los_Angeles
hostname umg-1
ip domain-name localdomain
ntp server 192.0.2.13
log server address 192.0.2.14
```