



Overview

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This chapter addresses the challenges in current VPIM messaging networks, why Cisco Unified Messaging Gateway (Cisco UMG) can resolve the issues, what extra features Cisco UMG can provide to the network, and basic information about Cisco UMG access and scalability.

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Challenges of Today's Fully-Meshed VPIM Messaging Network

Cisco Unity Express provides networking functionality for message exchange between users of different Cisco Unity Express nodes. A networked Cisco Unity Express setup requires all Cisco Unity Express nodes to form a fully meshed network, within which each Cisco Unity Express must be able to reach all other Cisco Unity Express nodes directly, and current Cisco Unity and Cisco Unity Express networks can only scale up to 500 nodes. This approach carries the obvious limitations on features, scalability, and manageability.

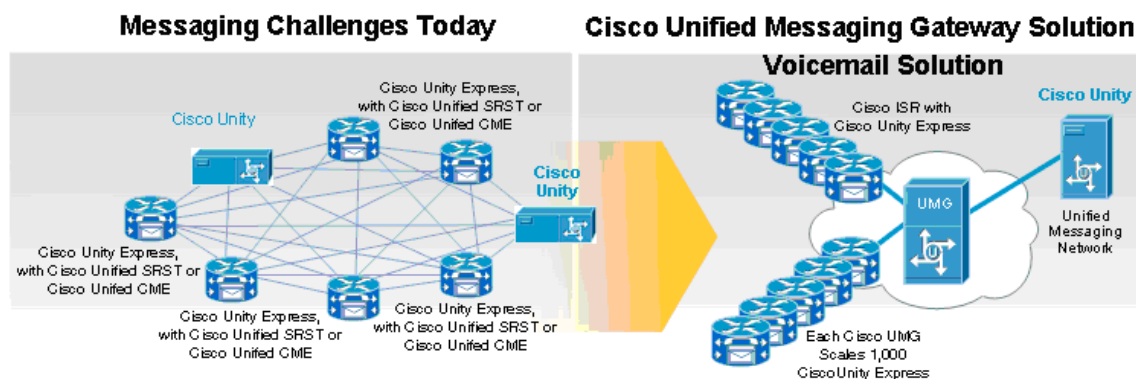
Benefits of Using Cisco UMG in Today's VPIM Messaging Network

Cisco UMG is software, based on Linux, that runs on a Network Module on Cisco Integrated Services Routers. Cisco UMG acts as the central hub for Cisco Unity, Cisco Unity Connection, and Cisco Unity Express to provide intelligent routing for voice mail messages, exchanging subscriber and directory information among the voice mail systems, and interoperability with third party voice mail systems (such as Avaya Interchange) over VPIM networks. This end-to-end message networking functionality is required by medium to larger distributed enterprises in order to seamlessly migrate to the Cisco Unified Communications solution.

From a management perspective, Cisco UMG allows Cisco Unity Express and Cisco Unity to be networked in a hub-and-spoke topology instead of today's fully meshed VPIM topology. This approach dramatically reduces the VPIM connections between mail systems, and simplifies the configuration

effort on each system. Each mail system (Cisco Unity Express, Cisco Unity, Avaya Interchange) only needs to configure the connection between itself and Cisco UMG. Cisco UMG then handles message routing and delivery using the directory information of all mail systems that register with it.

Figure 1 Comparison of a Current VPIM Network with a Cisco UMG Controlled Messaging Network



Cisco UMG also brings some new features into the VPIM network. The use of network wide spoken-name confirmation and a system distribution list enables the scaling of the single mail system feature to multiple nodes.



Note

In this document, mail systems (Cisco Unity Express, Cisco Unity, or Avaya Interchange) in a Cisco UMG network are referred to as endpoints or nodes.

The following features are esupported by Cisco UMG 1.0.

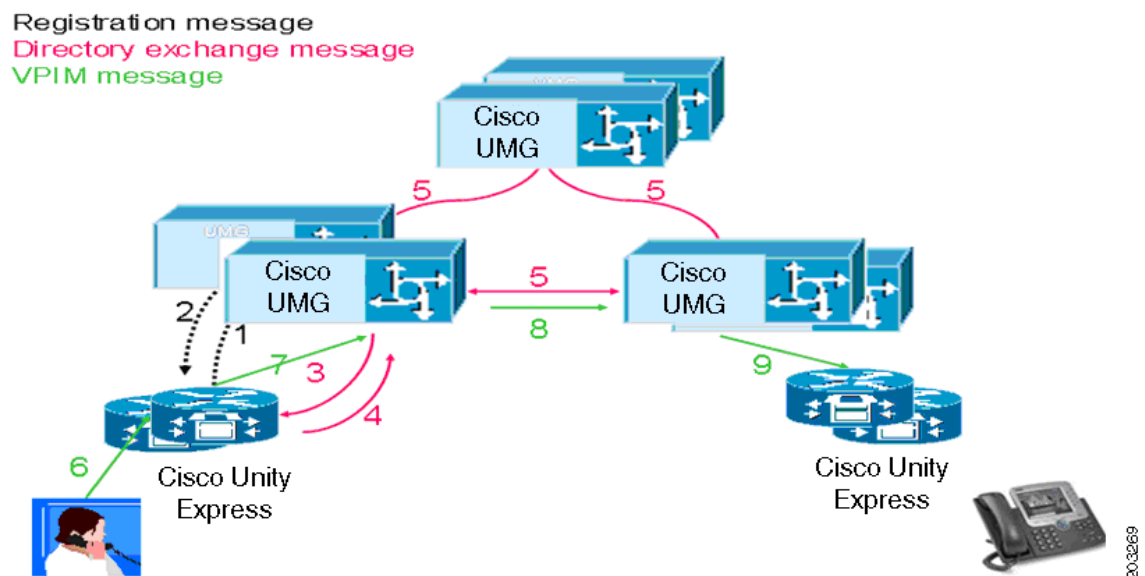
- Autoregistration with Cisco Unity Express (3.1 and later versions)
- Manual registration and provisioning of Cisco Unity, Cisco Unity Connection, and Avaya Interchange. You can manually provision versions of Cisco Unity Express earlier than 3.1.
- Centralized user directory depository
- Intelligent Message Routing and Delivery
- Spoken-name confirmation across the messaging network
- System Distribution List (SDL) and System Broadcast Messages (SBM)
- NAT support
- Simple Management and configuration using Cisco IOS software like CLI interface
- Seamless integration with Cisco Unity and Avaya Interchange systems
- Redundant and self-recoverable network
- Software Backup and Restore

As shown in [Figure 2](#), the general procedures in a Cisco UMG controlled messaging network include:

- Cisco UMG registers voice mail systems as nodes into its database (see Steps 1 and 2 in [Figure 2](#)).
 - Manual registration for Cisco Unity, Avaya Interchange, and Cisco Unity Express 3.0 and earlier versions
 - Auto registration for Cisco Unity Express 3.1 and later versions

- Directory Information Exchanges between Cisco UMG and auto-registered endpoints (Cisco Unity Express 3.1 and later). For all manually registered voice mail systems, manual provisioning is required for directory information (see steps 3 and 4 in Figure 2).
- Directory Exchange Information is pushed out from the primary Cisco UMG (to which endpoints registered) to all peer Cisco UMGs in the network in a unicast, fully meshed way (see Step 5 in Figure 2).
- Originating Cisco UMGs perform message routing based on the directory table saved in their databases to find terminating Cisco UMGs (see steps 6 and 7 in Figure 2).
- Messages are delivered from a subscriber to remote SDL/SBM/subscriber(s) using VPIM across the Cisco UMG network (see steps 8 and 9 in Figure 2).

Figure 2 General Procedures in the Cisco UMG Network



Cisco UMG Access information

Cisco UMG is offered in two forms:

- Network Module (NME-UMG)
- Enhanced Network Module (NME-UMG-EC) that supports different number of nodes

Cisco UMG hardware includes a CPU to offload processing from the router CPU such that Cisco UMG has minimal impact on the router CPU, and also storage (hard disk on the NM) for directory exchange information.

Similar to Cisco Unity Express, the Cisco UMG network module connects to its host router using a back-to-back Ethernet configuration that physically travels across the backplane of the router. The most common way to configure the Cisco UMG module is to use the unnumbered IP address method. By entering the **ip unnumbered** command, as shown in the following configuration example, you enable the Cisco UMG module to consume an IP address in the subnet of the network associated with a particular router egress port, such as GigabitEthernet 0/0. The router interface with which the Cisco UMG interface is associated must be in an “up” state at all times for Cisco UMG to communicate.

**Note**

This method requires the configuration of a static route to the Integrated-Service-Engine interface.

IP Unnumbered Configuration: Example

The following configuration example shows how to use the **ip unnumbered** command to enable the Cisco UMG module to consume an IP address in the subnet of the network associated with a particular router egress port (GigabitEthernet 0/0).

```
interface GigabitEthernet0/0
  ip address 10.68.10.1 255.255.255.0
!
interface Integrated-Service-Engine1/0
  ip unnumbered GigabitEthernet0/0
  service-module ip address 10.68.10.10 255.255.255.0
  service-module ip default-gateway 10.68.10.1
!
ip route 10.68.10.10 255.255.255.255 Integrated-Service-Engine1/0
```

The IP address of the Cisco UMG module in the example is 10.68.10.10. The default-gateway on the Integrated Service Engine must be set to the IP address of the Ethernet interface on the router that the unnumbered statement refers to (10.68.10.1 in the example). It is also possible to use a subinterface or a loopback interface as the parameter for the **ip unnumbered** command (for example, **ip unnumbered GigabitEthernet0/0.1**).

To access the Cisco UMG, initiate the session from enable mode on the hosting router using the following command:

```
service-module integrated-Service-Engine 1/0 session
```

**Note**

Because Cisco UMG is an embedded Linux application, you cannot access the Linux operating system using CLI commands, Telnet, or any other interface.

For Cisco UMG 1.0, no GUI access is implemented.
