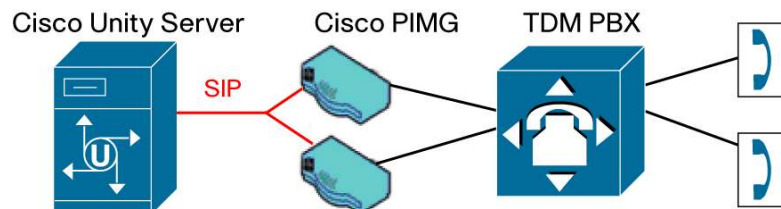


Cisco Unity PBX and T1 IP Media Gateways

Description

The Cisco Unity® IP Media Gateway products are integration devices designed to offer a high-quality connection between Cisco Unity or Cisco Unity Connection servers and your existing traditional private branch exchange (PBX). The Cisco Unity PBX IP Media Gateway (PIMG) is an 8-port, stackable integration device that emulates a digital or analog phone (station) on the PBX side and connects to the Cisco Unity server over a LAN or WAN using the Session Initiation Protocol (SIP). The Cisco Unity T1 IP Media Gateway (TIMG) is a single-span, rack-optimized device that translates the digital voice channel of a T1 trunk into SIP for transmission over a LAN or WAN to the Cisco messaging system. (Refer to Figure 1.)

Figure 1. Cisco Unity PIMG and TIMG Architecture Overview



Key Features and Benefits

The Cisco Unity IP Media Gateway products provide a feature-rich integration between several traditional PBX switches and Cisco® messaging systems, offering a mechanism to get all the productivity benefits of a Cisco unified messaging or voicemail solution while protecting your existing PBX infrastructure investment. The PIMG or TIMG along with your Cisco Unity or Cisco Unity Connection applications can become a central element in the coexistence of your traditional and IP environments, or it can offer a smooth and controlled migration path to a full Cisco IP Telephony solution.

Digital Connectivity

The digital Cisco Unity PIMG can emulate a digital phone set to provide end-to-end digital signaling and voice transmission, offering better feature interoperability than many analog dual tone multifrequency (DTMF) connections for voicemail systems.

T1 Connectivity

The Cisco Unity TIMG translates the digital voice channel of a T1 trunk into SIP for transmission over an IP network, providing up to 24 channels from one single-span TIMG, or 48 channels from one dual-span TIMG.

No Analog Lines Required (Digital Integration)

In many cases, traditional PBX deployments have few or no analog lines available. Adding analog line cards and lines just to connect to a voicemail or unified messaging system can be expensive and difficult. Because the Cisco Unity PIMG can connect directly to a digital phone line, or the

Cisco Unity TIMG directly to a T1 trunk, most PBXs can natively connect directly to the PIMG or TIMG with no hardware or software upgrades required.

No PCI Voice Cards Required

The Cisco Unity PIMG and TIMG connect to the Cisco Unity or Cisco Unity Connection server using an IP connection and SIP. Because this connection is an IP connection, no voice cards are required, and the connection does not use any peripheral-component-interconnect (PCI) slots in your messaging server.

Cisco Unity Failover and Cisco Unity Connection High-Availability Support

You can configure the Cisco Unity PIMG to support Cisco Unity failover and Cisco Unity Connection high-availability deployments.

For Cisco Unity messaging, during setup a primary server and a secondary server are defined. If a failover or failback occurs, the PIMG maintains visibility of the active server and can correctly route calls to and from the active messaging server.

For Cisco Unity Connection with high availability, you can configure the PIMG for load balancing and fault tolerance.

Deployment Across a WAN

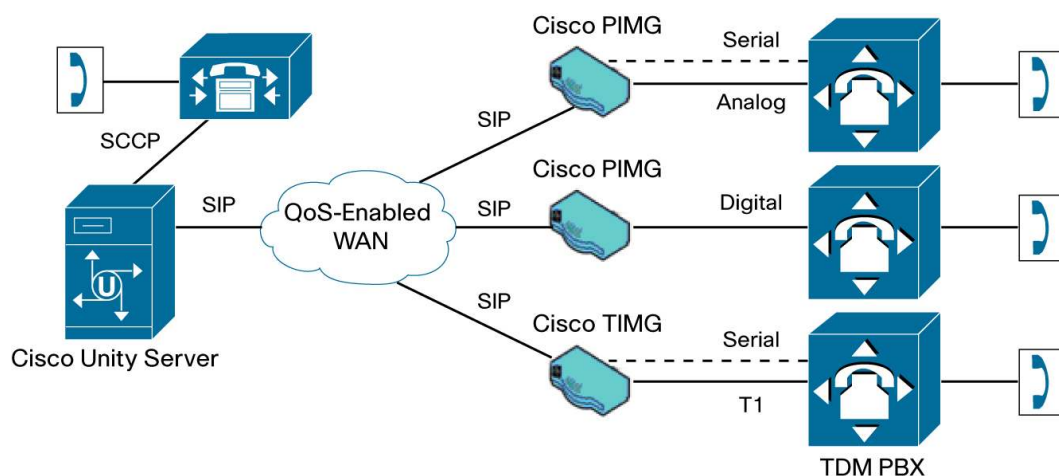
Because the Cisco Unity PIMG uses SIP to communicate with the Cisco Unity and Cisco Unity Connection servers, it is not necessary for these servers and the traditional PBX to be co-located. When the traditional PBX and PIMG or TIMG boxes are geographically separated from the voicemail server across a WAN, care should be taken to ensure that the network meets the throughput and quality-of-service (QoS) requirements to effectively carry voice traffic.

If the Cisco Unity or Cisco Unity Connection system connects to the PIMG or TIMG units over a WAN, the requirements for the WAN network connections follow:

- For G.729a codec formatting, a minimum of 32.76 kbps of guaranteed bandwidth for each voice messaging port
- For G.711 codec formatting, a minimum of 91.56 kbps of guaranteed bandwidth for each voice messaging port
- No network devices between the PIMG and Cisco Unity server that implement Network Address Translation (NAT) without SIP support
- A maximum 200-ms network latency

PIMG Branch-Office Consolidation

The IP connectivity of the Cisco Unity PIMGs and TIMGs enables simultaneous connection of an unlimited number of (limited only by the number of ports on the system) PBXs to a single Cisco Unity or Cisco Unity Connection server. As long as the total number of ports is no greater than 144 for Cisco Unity Connection, or 200 for the Cisco Unity system, any combination of PBXs and stacked PIMGs or TIMGs is supported, allowing a single point of administration for organizations with multiple sites or PBXs. (Refer to Figure 2.)

Figure 2. PIMG Branch-Office Consolidation Architecture

Supported Traditional PBX Integrations

Supported traditional PBX integrations are listed in the system requirements and supported hardware and software documents.

- For Cisco Unity unified messaging:
Supported Hardware and Software, and Support Policies for Cisco Unity Release 7.0.
- For Cisco Unity Connection:
Supported Hardware and Software, and Support Policies for Cisco Unity Connection 7.0.

Additional traditional PBX integrations will be supported and documented as they are tested and qualified. To request a qualification for a PBX integration that is not currently listed, please send an email message to OOB_Requests@cisco.com.

Scalability

For Cisco Unity unified messaging, multiple PIMGs and TIMGs can be connected to a single Cisco Unity messaging server to provide up to 200 simultaneous voice sessions.

For Cisco Unity Connection, PIMGs can be stacked and connected to a single traditional PBX to provide up to 144 simultaneous voice sessions to the Cisco messaging server.

Limitations

Please note that the Cisco Unity PIMG has regulatory certification for sale in the United States, Canada, and Western Europe (CE countries) only.

Cisco Unity IP Media Gateway Specifications

Tables 1 and 2 give specifications for Cisco Unity PIMGs and TIMGs, respectively.

Table 1. Cisco Unity PIMG Specifications

Interfaces	
PBX interface	8 ports; RJ-45
Network interface	1 port; 10/100BASE-T Ethernet
Serial interface	1 diagnostics port
VoIP Support	
Signaling protocol	SIP per Draft-IETF-SIP-RFC2543-bis-05

Voice transport	Real-Time Transfer Protocol (RTP)	
Codecs	G.711, G.723.1, and G.729AB	
QoS	Type of service (ToS) and IP Precedence	
Power		
Input voltage range	100 to 250 VAC	
Input frequency range	50 to 60 Hz	
Environmental		
Operating temperature	32 to 122°F (0 to 40°C)	
Nonoperating temperature	-4 to 158°F (-20 to 70°C)	
Dimensions		
Form factor	Stackable	
Rack-mounting	No	
Weight	Approximately 2.5 lb (1.13 kg)	
Height	2.1 in. (53 mm)	
Width	9.5 in. (241 mm)	
Length	10 in. (254 mm)	
Regulatory Certifications		
United States	Emissions	FCC part 15 class B
	Telco	FCC part 68
	Safety	ANSI/UL 60950, third edition
Canada	Emissions	IC ES-003 class B
	Telco	IC CS03, issue 7
	Safety	CAN/CSA 60950, third edition
Western Europe	Emissions	EN 55022-1998 class B
	Telco	EN 55024:1998
	Safety	EN 60950

Table 2. Cisco Unity TIMG (Single-Span) Specifications

Interfaces	
PBX interface	24 ports (T1/PRI); RJ-45
Network interface	1 port; 10/100BASE-T Ethernet
Serial interface	1 diagnostics port
Protocol Support	
T1 channel associated signaling (CAS)	E&M, GroundStart, and LoopStart
Serial	Simplified Message Desk Interface (SMDI)
Voice-over-IP (VoIP) Support	
Signaling protocol	SIP
Voice transport	RTP
Codecs	G.711, G.723.1, and G.729AB
QoS	ToS and IP Precedence
Power	
Input voltage range	90 to 264 VAC
Input frequency range	47 to 63 Hz
Environmental	
Operating temperature	32 to 122°F (0 to 40°C)

Nonoperating temperature	-4 to 158°F (-20 to 70°C)	
Dimensions		
Form factor	Rack-mount	
Rack-mounting	Yes	
Weight	Approximately 11.1 lb (5.03 kg)	
Height	1.68 in. (4.27 cm)	
Width	19 in. (48.26 cm)	
Length	14.2 in. (36.07 cm)	
Regulatory Certifications		
United States	Emissions	FCC part 15 class B
	Telco	FCC part 68
	Safety	ANSI/UL 60950, third edition
Canada	Emissions	IC ES-003 class B
	Telco	IC CS03, issue 7
	Safety	CAN/CSA 60950, third edition
Western Europe	Emissions	EN 55022-1998 class B
	Telco	EN 55024:1998
	Safety	EN 60950

Ordering Information

You can deploy the Cisco Unity IP Media Gateways as part of either a Cisco Unity voicemail or unified messaging solution or a Cisco Unity Connection voicemail solution. Consult the online configuration tool and the appropriate ordering guidelines for more details about ordering Cisco Unity products.

The Cisco Unity PIMG comes with a power supply and a U.S. power cord. For use within other countries or regions, select the appropriate power cord option. No other cables or connectors (Ethernet cable, serial connectors, or digital phone lines) are included. Table 3 shows ordering information.

Table 3. Ordering Information

Product ID	Description
UNITY-PIMG-DIG	8-port PBX IP Media Gateway for digital integration between Cisco Unity, or Cisco Unity Connection, and traditional PBXs
UNITY-PIMG-ANALOG	8-port PBX IP Media Gateway for analog integration between Cisco Unity, or Cisco Unity Connection, and traditional PBXs
UNITY-PIMG-MITEL	8-port PBX IP Media Gateway for integration between Cisco Unity and Mitel PBXs
UNITY-PIMG-ROLM	8-port PBX IP Media Gateway for integration between Cisco Unity, or Cisco Unity Connection, and the Rolm 9751
UNITY-PIMG-DIG=	Spare 8-port PBX IP Media Gateway for digital integration between Cisco Unity, or Cisco Unity Connection, and traditional PBXs
UNITY-PIMG-ANALOG=	Spare 8-port PBX IP Media Gateway for analog integration between Cisco Unity, or Cisco Unity Connection, and traditional PBXs
UNITY-PIMG-MTL	Spare 8-port PBX IP Media Gateway for integration between Cisco Unity and Mitel PBXs
UNITY-PIMG-ROLM=	Spare 8-port PBX IP Media Gateway for integration between Cisco Unity, or Cisco Unity Connection, and the Rolm 9751
UNITY-TIMG-1	24-port T1 IP Media Gateway for T1 integrations between Cisco Unity and traditional PBXs
UNITY-TIMG-1=	Spare 24-port T1 IP Media Gateway for T1 integrations between Cisco Unity and traditional PBXs

Firmware

Cisco recommends that you use only the firmware versions for the Cisco Unity PIMG and TIMG that we have tested and qualified. Firmware updates for the Cisco Unity PIMG and TIMG are available on the Cisco Unity Utilities page at: <http://www.cisco.com/cgi-bin/tablebuild.pl/unity-PIMG>.



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