

Cisco VG248 Analog Phone Gateway

Overview

The Cisco VG248 Analog Phone Gateway is a mixed-environment solution, enabled by Cisco AVVID (Architecture for Voice, Video and Integrated Data), which allows organizations to support their legacy analog devices while taking advantage of the new opportunities afforded through the use of IP telephony. The Cisco VG248 is a high-density gateway for using analog phones, fax machines, modems, voice mail systems, and speakerphones within an enterprise voice system based on Cisco CallManager. It is advantageous to have these devices tightly integrated with the rest of the IP-based phone system, for increased manageability, scalability, and cost-effectiveness (see Figure 2).

The Cisco VG248 offers 48 fully featured analog phone lines to be used as extensions to the Cisco CallManager system in a very compact 19-inch rack-mount chassis.

Figure 1
Cisco VG248 Analog Phone Gateway



Key Features and Benefits

Analog phones—Full-feature analog phone connectivity is needed when the infrastructure (wiring) or application does not support or require IP phones. Full-featured analog phone lines allow organizations to deploy IP telephony without having to purchase IP phones for all the users.

Fax and modem—Fax machine and modem connectivity are required in many locations for business needs, and the Cisco VG248 is the ideal device to provide the lines for them. Fax machine and modem connectivity allows organizations to support these legacy devices alongside the New World IP telephones.

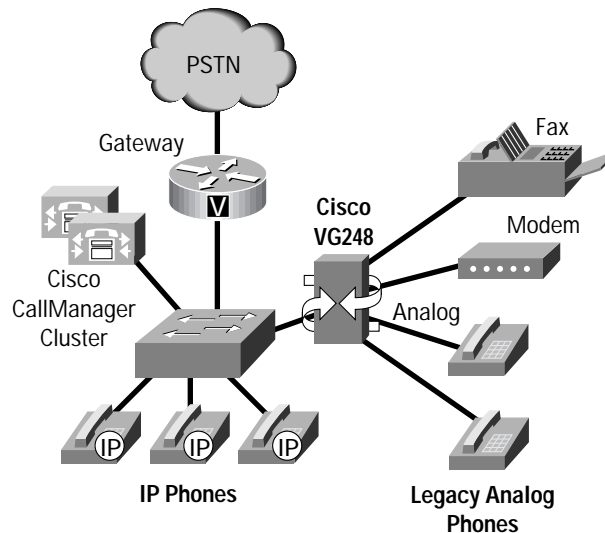
Voice mail—Many legacy voice mail systems require analog and Simple Messaging Desktop Interface (SMDI) connectivity. Voice mail support allows support for legacy voice mail systems with Cisco CallManager in more configurations and with higher reliability than was previously possible.

Investment protection—Customers can continue to use existing phones, fax machines, and voice mail systems while taking advantage of IP telephony.

Reduced barrier to entry—Providing a low-cost alternative for low-end analog phones, organizations can take advantage of IP telephony with a lower overall investment in this new technology.



Figure 2
Analog Device Integration with Cisco VG248



Analog Phone Connectivity

The Cisco VG248 is ideal for implementations in which it is necessary to use analog phones because it provides a high level of functionality at those locations, including:

- Caller ID—The Cisco VG248 supports caller ID (both name and number), so users can tell who is calling before answering the phone.
- Message-waiting light—The Cisco VG248 supports two methods of analog light activation: high-DC voltage (message-waiting indicator light) and frequency-shift-key (FSK) messaging, as well as stuttered dial tone for phones without a visual indicator. These schemes are used by private branch exchange (PBX) systems and central offices, respectively.
- Call waiting—When on a call, if a new call comes in the user hears an audible tone and can “click over” to the new caller.
- Caller ID on call waiting—The user can see who is calling before deciding whether to take the new call.
- Transfer—Both blind and supervised transfers are supported, using the standard Bellcore flash hook method.
- Conference—Conference calls can be initiated from an analog phone using flash hook or feature access codes and the Cisco CallManager will direct the devices to a media resource for the conference call. Up to six parties can participate.
- Feature access codes—More advanced features can be activated using feature access codes.
- Speed dial—A user can set up commonly dialed numbers using the Cisco CallManager Web interface and then dial these numbers directly from an analog phone.
- Call forward all—Calls can be forwarded to a number within the dial plan.
- Redial—A simple last-number redial can be activated from analog phones connected to the Cisco VG248.
- Cisco SoftPhone support—Cisco SoftPhone functionality is supported with analog phones.



Fax and Modem Connectivity

The Cisco VG248 supports legacy fax machines and modems. When using fax machines, the Cisco VG248 uses the Cisco fax-relay technology to transfer faxes across the network with high reliability using less bandwidth than a voice call. Any modems can be connected to the Cisco VG248.

Voice Mail Connectivity

The Cisco VG248 generates call information in an SMDI format for all calls ringing on any of the 48 analog lines connected to it. It will also pass on SMDI from other Cisco VG248s, or from a legacy PBX to the voice mail system. Any commands for message-waiting indicators will be sent to the Cisco CallManager and to any other attached SMDI hosts.

This mechanism allows for many new configurations when using SMDI-based voice mail systems, including:

- A single voice mail system to be shared between Cisco CallManager and a legacy PBX (see Figure 3)
- Voice mail and Cisco VG248 to function remotely in a centralized call-processing model
- A single voice mail system to be used by multiple clusters, by using one Cisco VG248 per cluster
- Multiple voice mail systems to be used by a single cluster, because SMDI is being generated by Cisco VG248 rather than Cisco CallManager
- Reliability for SMDI links using Cisco CallManager failover
- Scalability via linking Cisco VG248s (see Figure 4)

Figure 3
Integration of Legacy Voice Mail and Legacy PBX Using SMDI

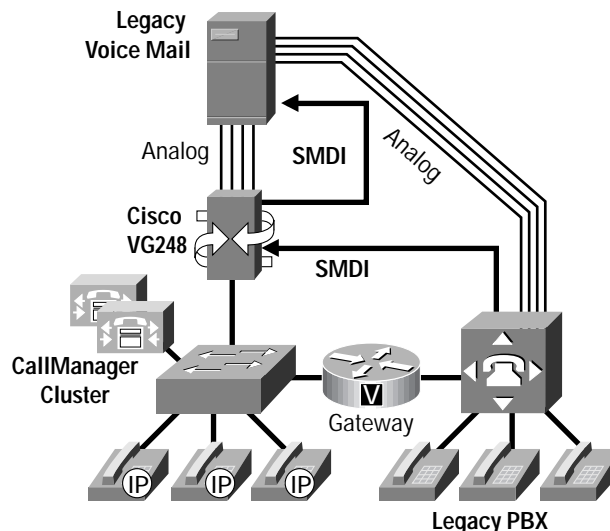
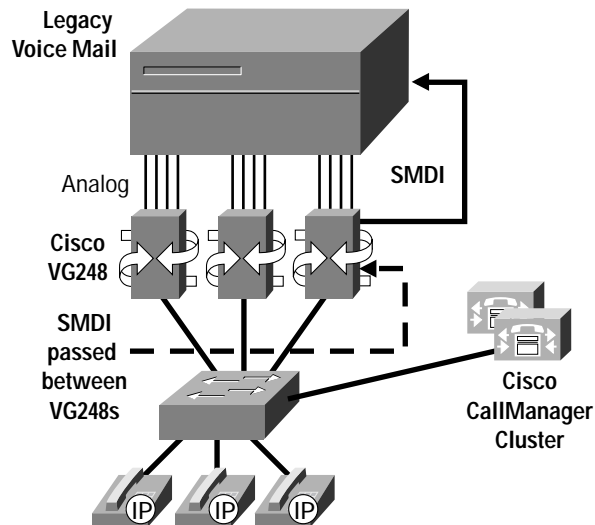




Figure 4
Analog Voice Mail Scalability



Protocols Supported

- Skinny Client Control Protocol (SCCP)
- Real-Time Transport Protocol (RTP)
- Trivial File Transfer Protocol (TFTP)
- File Transfer Protocol (FTP) (for firmware upgrades)
- Hypertext Transfer Protocol (HTTP) server (status information only)
- Simple Network Management Protocol (SNMP)
- Telnet
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)
- Cisco CallManager 3.1
- Cisco CallManager redundancy support
- Call survivability
- Music on hold
- Coder/decoder (codec) support, G.711 or G.729a



Technical Specifications

Power	100–240 VAC, 50–60 Hz
Talk battery	–35V
Ring voltage	46V rms with a 14V DC offset
Loop current	21 mA
Message-waiting voltage	93V DC (one second on, one second off)
Maximum line length	5000 feet or 415 ohms (on-premise only)
REN equivalence	3 (maximum 2 off hook)
Connectors	Two RJ-21 female
Off-hook detect	Loop start only
Dialing	Dual tone multifrequency (DTMF) only

Ordering Information

Product Number: VG248

Product Description: Cisco VG248 Analog Phone Gateway

Regulatory Compliance

Product bears CE Marking indicating compliance with the 89/366/EEC and 73/23/EEC directives, including the following safety and EMC standards:

Safety Compliance

UL 1950
CSA C22.2 No. 950
EN 60950
IEC 60950
AS/NZS 3260
TS 001

EMC Compliance

FCC Part 15 (CFR 47) Class A
ICES 003 Class A
CISPR22 Class A
AS/NZS 3548 Class A
VCCI Class A
EN55022 Class A
EN 55024
EN 50082-1
ETS 300 386
EN 61000-3-2
EN 61000-3-3



Physical Specifications

Dimensions (H x W x D) 1.75 x 17.25 x 16.75 inches

Weight 14 lb 9 oz

Network Management

Basic MIB II (RFC 1213)

Interface MIB (RFC 1573)

RMON (Ethernet statistics group)

Cisco Discovery Protocol Management Information Base (CDP MIB)

Cisco Process MIB

Cisco Memory Pool MIB

Cisco Voice Interface MIB

Cisco Analog Voice Interface MIB

Cisco EnvMon MIB

Customized Regional Support

United States

United Kingdom

France

Germany

Austria

Switzerland

Italy

Environmental

Operating environment: 0 to 40 C(32 to 104 F),10% to 95% noncondensing

Nonoperating environment: -10 to 60 C (14 to 140 F)

Service and Support

Cisco support solutions are designed for one purpose—to ensure customer success by delivering a suite of proactive support solutions. Cisco support solutions offer presales network audit planning, design consulting, network implementation, operational support, and network optimization. Taking advantage of Cisco expertise and experience, customers gain interactive knowledge-transfer solutions to enhance their success. By including support with Cisco equipment purchases, customers immediately gain access to a wealth of support and resources.

Contact your local sales office for further information or go to <http://www.cisco.com>.



Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems Europe
11, Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the

Cisco Web site at www.cisco.com/go/offices

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia
Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru
Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa
Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Copyright © 2002, Cisco Systems, Inc. All rights reserved. AccessPath, AtmDirector, Browse with Me, CCIP, CCSI, CD-PAC, *CiscoLink*, the Cisco *Powered* Network logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, Cisco Unity, Fast Step, Follow Me Browsing, FormShare, FrameShare, IGX, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, the iQ logo, iQ Net Readiness Scorecard, MGX, the Networkers logo, ScriptBuilder, ScriptShare, SMARTnet, TransPath, Voice LAN, Wavelength Router, and WebViewer are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and Discover All That's Possible are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, the Cisco IOS logo, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastSwitch, GigaStack, IOS, IP/TV, LightStream, MICA, Network Registrar, *Packet*, PIX, Post-Routing, Pre-Routing, RateMUX, Registrar, SlideCast, StrataView Plus, Stratm, SwitchProbe, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company.
(0110R) 201764/ETMG 01/02