Overview of the Cisco VG310 and Cisco VG320 Voice Gateways

This chapter provides a brief description of the Cisco VG310 and Cisco VG320 voice gateways and contains the following sections:

Introduction to Cisco VG310 and Cisco VG320 Analog Voice Gateways

The Cisco VG310 and Cisco VG320 Analog Voice Gateways provide an intermediate path to enable the Time Division Multiplex (TDM) to IP transition.

Cisco VG310 and Cisco VG320 support the following interfaces:

- Gigabit Ethernet
- USB
- Enhanced High-Speed WAN Interface Card (EHWIC), Voice Interface Card (VIC), and Voice WAN Interface Card (VWIC)

Warning This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means by security. Statement 1017

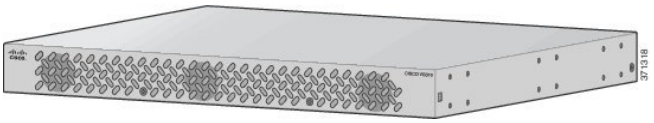
The Cisco VG310 and Cisco VG320 chassis support the following:

- Two 10/100/1000BASE-T Gigabit Ethernet ports
- External compact flash memory
- AC and DC power inputs
- (For Cisco VG310 only)—24-analog Foreign Exchange Station (FXS) voice ports using one RJ-21 analog voice interface connector
- (For Cisco VG320 only)—48-analog FXS voice ports using two RJ-21 analog voice interface connectors

Front Panel View

The following figure shows the front panel of the Cisco VG310 and Cisco VG320 chassis.

Figure 1: Front Panel of the Cisco VG310 and Cisco VG320 Chassis



Back Panel View

The following figures show the back panel views of the Cisco VG310 and Cisco VG320 chassis respectively.

Figure 2: Back Panel of the Cisco VG310 Chassis

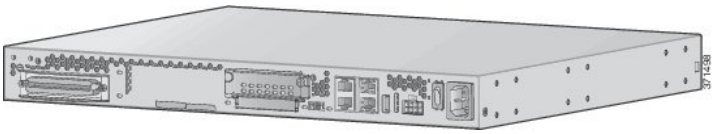
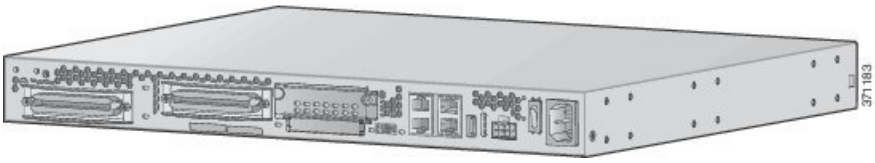


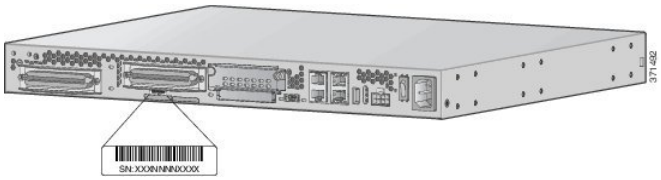
Figure 3: Back Panel of the Cisco VG320 Chassis



Locating the Product Serial Number

The serial number label for the Cisco VG310 and Cisco VG320 Analog Voice Gateways is located on the back panel of the chassis, as shown in the following figure.

Figure 4: Locating the Product Serial Number



Note The serial number for Cisco VG310 and Cisco VG320 is 11 characters long.

Interfaces and Service Capabilities of Cisco VG310 and Cisco VG320

The following table describes the physical ports and the services supported by each port type:

- Two administrative ports—One console and one auxiliary
- Two 10/100BASE-T Gigabit Ethernet LAN ports
- Cisco VG310 is equipped with an RJ-21 port for connection to a distribution panel
- Cisco VG320 has two RJ-21 ports for connection to a distribution panel

Note WAN Interface is not supported on Cisco VG310 and Cisco VG320.

Table 1: Cisco VG310 and Cisco VG320 Analog Voice Gateway Interfaces and Service Capabilities

Port	Interface Configuration	Interface To	Services Supported	Details
Console Port 0/0	EIA/TIA-232 asynchronous serial (data communications equipment)	ASCII terminal Personal computer	Local administrative access	RJ-45 physical interface
Auxiliary Port 0/1	EIA/TIA-232 asynchronous serial (data terminal equipment)	Modem	Remote administrative access Data backup	RJ-45 physical interface
Gigabit Ethernet Port 0/0, 0/1	1000BASE-T (802.3)	LAN	Data	RJ-45 physical interface

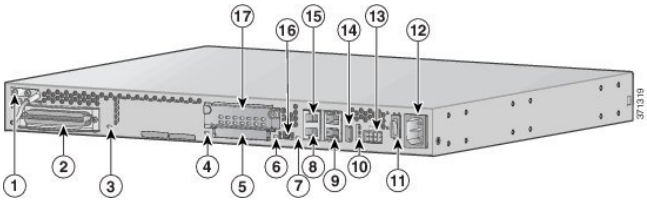
Port	Interface Configuration	Interface To	Services Supported	Details
(For Cisco VG310 only) RJ-21 24 analog FXS voice ports Port 0/0/0 to 0/0/23	FXS (loop start or ground-start)	Analog phone, fax, or modem Network side of key system Network side of analog PBX	Analog voice/fax or modem	RJ-21 physical interface
(For Cisco VG320 only) RJ-21 48 analog FXS voice ports Port 0/0/0 to 0/0/23 and port 0/1/0 to 0/1/23	FXS (loop start or ground-start)	Analog phone, fax, or modem Network side of key system Network side of analog PBX	Analog voice/fax or modem	RJ-21 physical interface
Compact slot memory slot 0	Compact slot memory slot 0	—	—	Flash card

Physical Description and LEDs

All interface ports, connectors, and LEDs are on the back panel of the chassis.

The following figure describes the back panel features of Cisco VG310.

Figure 5: Back Panel Features of Cisco VG310

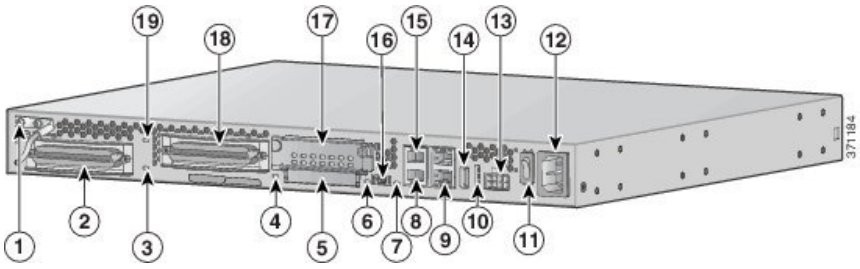


1	Chassis ground connection	10	Status LEDs for DC input power
2	FXS RJ-21 connector	11	On/off switch
3	Status LED for FXS RJ-21 connector	12	AC power input
4	Status LED for CompactFlash card	13	DC power input
5	CompactFlash card slot	14	USB connector
6	Status LED for mini USB	15	RJ-45 serial AUX port
7	Status LED for console	16	Mini USB connector

8	RJ-45 serial console port	17	EHWIC slot
9	Gigabit Ethernet ports (2)		

The following figure describes the back panel features of Cisco VG320.

Figure 6: Back Panel Features of Cisco VG320



1	Chassis ground connection	11	On/off switch
2	FXS RJ-21 connector 1	12	AC power input
3	Status LED for FXS RJ-21 connector 1	13	DC power input
4	Status LED for CompactFlash card	14	USB connector
5	CompactFlash card slot	15	RJ-45 serial AUX port
6	Status LED for mini USB	16	Mini USB connector
7	Status LED for console	17	EHWIC slot
8	RJ-45 serial console port	18	FXS RJ-21 connector 2
9	Gigabit Ethernet ports (2)	19	Status LED for FXS RJ-21 connector 2
10	Status LEDs for DC input power		

LED Indicators

The following table summarizes the LED indicators that are located on the chassis of both VG310 and VG320, but not on the removable modules or interface cards.

For descriptions of LEDs in removable modules and interface cards, see the applicable documentation for those products.

Table 2: Cisco VG310 and Cisco VG320 LED Indicators

LED	Color	Description
SYS	Green	Normal operation. System is receiving power.
	Blinking green	Operating system boot up in progress.
	Amber	Power supply is available, but the unit has an error condition.
	Off	System is not receiving power.

LED	Color	Description
ACT	Green	Indicates packet activity between the forwarding and routing engine and an I/O port.
	Off	No packet transfers are occurring.
PVDM	Green	PVDM3 is detected and enabled.
	Amber	PVDM3 is detected, but has an error condition.
	Off	PVDM3 is not installed
CF	Green	Flash memory is being accessed. Do not remove the CompactFlash memory card.
	Amber	CompactFlash error.
	Off	Flash memory is not being accessed. Safe to remove the CompactFlash memory card, if required.
PWR	Green	System is running.
	Off	System is off.
LNK	Green	Indicates that the Ethernet port has a link partner.
	Off	No link available.
SPD	Green, blinking	Frequency of blinking indicates speed of the port. For information about the LED blinking pattern, see Gigabit Ethernet Ports and LED Indicators, on page 6.
	Off	No link available.
SER CON	Green	Indicates that the RJ-45 port is the active console port. **Note** When SER CON LED is On, the USB CON LED will be Off.
USB CON	Green	Indicates that the USB port is the active console port. **Note** When USB CON LED is On, the SER CON LED will be Off.

Gigabit Ethernet Ports and LED Indicators

There are two RJ-45 Gigabit Ethernet (GE) ports (GE0/0 and GE0/1) on the Cisco VG310 and Cisco VG320 chassis. These ports support 10BASE-T, 100BASE-TX, and 1000BASE-T standards.

The LED indicators for the GE ports display a sequence of blinks followed by a pause to indicate the link speed. The following table describes the link speed indicated by the LED indicators of the GE ports.

Table 3: LED Indicator Pattern for GE Ports

LED Indicator Pattern	Link Speed
Blinks once followed by a pause	10 Mbps
Blinks twice followed by a pause	100 Mbps
Blinks thrice followed by a pause	1000 Mbps

Port Numbering Conventions

The following are the port numbering conventions for the Cisco VG310 chassis and Cisco VG320 chassis:

- An external compact flash card is numbered CF 0.
- 10/100/1000BASE-T ports are numbered 10/100/1000BASE-T 0/0 (bottom) and 10/100/1000BASE-T 0/1 (top).
- (For Cisco VG310 chassis only)—FXS and E/M voice port numbering begins at 0/0/0 and extends to 0/0/23.
- (For Cisco VG320 chassis only)—FXS and E/M voice port numbering begins at 0/0/0 and extends to 0/0/23 for FXS RJ-21 connector 1. For FXS RJ-21 connector 2, port numbering begins at 0/1/0 and extends to 0/1/23. To locate the FXS voice ports, see Physical Description and LEDs, on page 4.

Hardware Features

This section describes the hardware features of Cisco VG310 and Cisco VG320 and includes the following:

Real-Time Clock

When the system powers up, the internal real-time clock with battery backup provides the system software with the time of day. This allows the system to verify the validity of the certification authority (CA) certificate. Cisco VG310 and Cisco VG320 have a lithium battery. This battery lasts for the duration of the life time of Cisco VG310 or Cisco VG320 under the operating environmental conditions specified for the chassis, and is not field replaceable.

Note If the lithium battery unit in Cisco VG310 and Cisco VG320 fails, the unit must be returned to Cisco for repair.

Built-In Interface Ports

The following table summarizes the interface ports built into the chassis.

Table 4: Summary of Built-In Interfaces on Cisco VG310 and Cisco VG320

Data Ports		Management Ports		
10/100/1000 GE RJ-45	**USB Type A**	**Console Serial, RJ-45**	**Console Serial, Mini-USB (Type B)**	**Auxiliary, RJ-45**
2	1	1	1	1

USB Serial Console Port

The Mini-USB Type B serial port is enabled to perform management tasks on Cisco VG310 and Cisco VG320. Before establishing physical connectivity between a personal computer and a voice gateway using this port, make sure that a Windows USB device driver is installed.

Removable and Interchangeable Modules and Cards

The following table summarizes the type of removable modules and cards that can be installed in Cisco VG310 and Cisco VG320 to provide specific capabilities.

Table 5: Removable and Interchangeable Modules and Cards

Modules and Cards	Internal or External	Description
EHWIC	External	The EHWIC slot on the chassis supports one EHWIC card. Legacy interface single-width cards such as WAN interface cards (WICs), voice interface cards (VICs), and high-speed WAN interface cards (HWICs) are supported in the EHWIC slot. For a list of supported VICs and VWICs, see Supported Voice Interface Cards and Voice WAN Interface Cards.
Packet Voice Data Modules (PVDM3)	Internal	The PVDM slot on the motherboard supports only a PVDM3. Older PVDM cards are not supported.
Flash memory	External	A CompactFlash memory card stores the operating system software image. The CompactFlash memory card can have sizes of 512 MB, 1 GB, 2 GB, 4 GB, and 8 GB.
Cisco USB flash memory	External	A Cisco USB flash memory (USB 2.0 compliant) supports 1 GB of memory. **Note** We recommend that you do not use third-party USB devices on Cisco VG310 or Cisco VG320. USB 1.x devices are also not supported on Cisco VG310 and Cisco VG320.

Modules and Cards	Internal or External	Description
DC power supply (Optional)	External	Provides backup power using a 12-volt battery backup system if AC power is not available.

Supported Voice Interface Cards and Voice WAN Interface Cards

The EHWIC slot on the Cisco VG310 and Cisco VG320 chassis supports the following VICs and VWICs:

- Cisco VIC3-2FXS/DID
- Cisco VIC3-2FXS-E/DID
- Cisco VIC3-4FXS/DID
- Cisco VIC3-2E/M
- Cisco VIC2-2FXO
- Cisco VIC2-4FXO
- Cisco VWIC3-1MFT-T1/E1
- Cisco VWIC3-2MFT-T1/E1
- Cisco VIC2-2BRI-NT/TE

Periodic Inspection and Cleaning

Periodic inspection and cleaning of the external surface of the voice gateway is recommended to minimize the negative impact of dust or debris. The frequency of inspection and cleaning is dependent upon the severity of the environmental conditions, but a minimum of every six months is recommended. Cleaning involves vacuuming the unit's air intake and exhaust vents.

Software Elements

The operating system for Cisco VG310 and Cisco VG320 is Cisco IOS software, which resides in the flash memory.

- Configuration Connections, on page 9
- Configuration Methods, on page 10

Configuration Connections

You can use an ASCII terminal or a PC to configure a Cisco VG310 or Cisco VG320 Analog Voice Gateway. The configuration can be performed in several ways:

- Locally, with a direct connection through the console port
- Remotely, with a connection through the auxiliary port and a modem

- Through Telnet and TFTP

Configuration Methods

For information on performing the initial configuration on an analogy voice gateway, see Configuring the Cisco VG310 and Cisco VG320 Voice Gateways.