Introduction

Scope of this Guide

This guide is intended for trained personnel familiar with SCN protocols and their network topology. It describes the hardware configuration and management of the Cisco VG30D Voice Gateway product, its installation, maintenance, and general operation.

The guide is divided into the following main sections:

- Chapter 1, “Introduction”
- Chapter 2, “Installation”
- Chapter 3, “Initial Configuration”
- Chapter 4, “Management and Configuration”
- Chapter 5, “Diagnostics”
- Chapter 6, “Conversions and Transparency”
- Chapter 7, “SCN Clock Synchronisation”
- Chapter 8, “SNMP Traps”
- Chapter 9, “DPNSS Compliance Tables”
- Chapter 10, “Fault Determination”

Appendices

- Appendix A, “Approvals, Safety Instructions, and Statutory Information”
- Appendix B, “References and Technical Specifications”
- Appendix C, “Connectors and Cabling”
- Appendix D, “Craft Port Management”
- Appendix E, “Useful Information”
- Glossary

The Cisco VG30D Voice Gateway

The Cisco VG30D Voice Gateway is a dual-port ISDN unit that is designed to perform signalling and service reconciliation between two unlike ISDN signalling systems.

It typically gets deployed to attach the following:
• A QSIG (or DPNSS) PBX to a DPNSS (or QSIG) network, or
• A number of DPNSS PBXs to a QSIG or Q.931 backbone network (VoIP or ATM, for example), or
• A DPNSS PBX to a Q.931-based Public ISDN service (such as ISDN 30e).

When you are attaching a QSIG (or DPNSS) PBX to a DPNSS (or QSIG) network, Cisco VG30D Voice Gateway provides seamless service interworking between the attached PBX and other PBXs in the network, including inter-operation of most of the commonly used services.

Cisco VG30D Voice Gateway facilitates basic call interworking, including simple services such as calling and connected identity when attaching a number of DPNSS PBXs to a QSIG or Q.931 backbone network, or a DPNSS PBX to a Q.931-based Public ISDN service.

In addition, when attaching a number of DPNSS PBXs to a QSIG backbone network, the Cisco VG30D Voice Gateway can transport DPNSS signalling across the network and deliver it practically transparently through a similar InterChange unit to a remote DPNSS PBX. In this mode, all DPNSS Supplementary Services get supported apart from some link-specific Traffic Channel maintenance services.

Cisco VG30D Voice Gateway supports 2 E1 Primary Rate [2 Mbit/s (30B + D) Common Channel Signalling] interfaces; providing a single Primary Rate conversion. The unit has been designed to be installed on a 19-inch rack. It is particularly suited for use in Customer Premises Environments (CPE) to interface equipment into Virtual Private Networks.

Figure 1-1 shows DPNSS PBXs interconnected across a QSIG network. In this configuration, the combination of InterChange units and the network behave as a single DPNSS transit node and transports DPNSS supplementary signalling.

![Figure 1-1 Cisco VG30D Voice Gateway in a Private Network](image)

Figure 1-2 shows an Cisco VG30D Voice Gateway interfacing a PBX by using the UK standard DPNSS protocol to the QSIG/Q.931 protocol.
Conversions operate on the common signalling channel only. Bearer circuits get passed directly through the unit. You can configure each protocol support to meet specific application needs.

You can configure the Virtual Private Network protocol support to operate into sub-equipped ISDN trunks, which allows the user to maximise the benefits of the advantageous Primary Rate ISDN tariffs now that are being offered by some PTOs.

The Cisco VG30D Voice Gateway also provides some additional facilities:

- The ability to perform diversions on behalf of the PBX
- Support for the Q.932 redirecting number element for diversion
- Custom configuration for Cisco Unified Communications Manager and other PBXs
- The ability to display DPNSS Message Waiting Indications on telephones that are controlled by Cisco Unified Communications Manager

**Management**

On powering on the Cisco VG30D Voice Gateway, Power On Self Test gets performed. You can monitor the process using the Craft port and the serial cable that is supplied with the Cisco VG30D Voice Gateway. See Power On Self Test and IP Address Setup.

After this self test is complete, achieve configuration and management of the Cisco VG30D Voice Gateway’s signalling functions by using the Gateway Management Interface and a Web browser on a networked computer. See Initial Configuration and Management and Configuration.

Factory default settings were installed during manufacturing. For any advanced engineering support under the guidance of a Cisco Systems, Inc., support engineer, an additional cable will be required (Find details in Craft Port - Factory Mode.)