

Vanguard 6800 Router Series

Highlights

A high performance, mid-range gateway router series with advanced security, optimized for high speed network services

Enables routing of IP, SNA & other legacy protocols, voice and video in a single device

Investment protection of serial applications Supports IP, VPN, MPLS, Frame Relay, ATM and Leased Line network services

Upgrade path to broadband services such as DSL, cable, and wireless

Perfect low-cost solution for larger branch offices, where high bandwidth requirements, Ethernet support, serial port support, and increased performance are essential.

CPU intensive applications such as: advanced QoS, high speed multimedia traffic processing, and enhanced security via hardware-accelerated encryption and VPNs

Digital voice support with 60 channels with R2D and ISDN

Vanguard 6840/41 Multiservice Router for Medium to Large Office

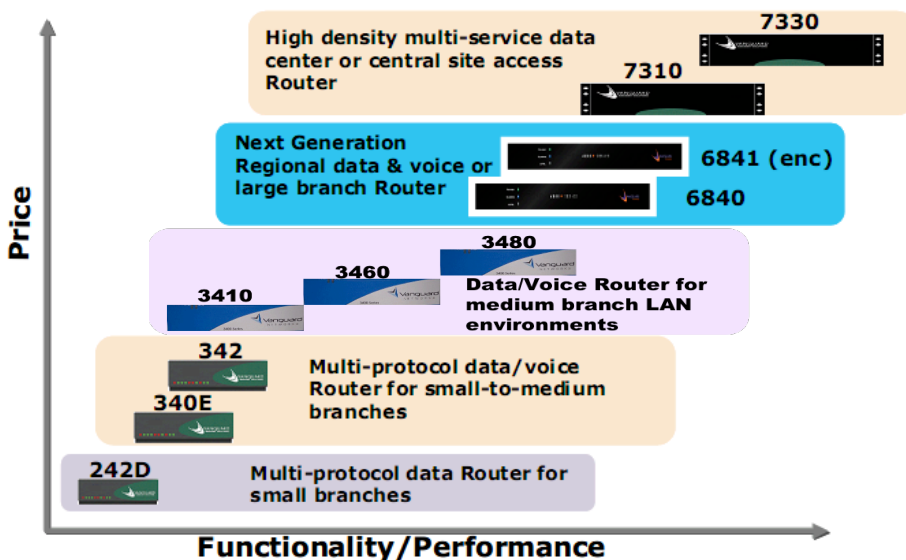
The Vanguard 6800 Multiservice Router Series provides a high performance, cost-effective networking solution for medium to large enterprise branches. It is a gateway router that can route: IP traffic, serial protocols, voice and IP-video over either IP, VPN, MPLS, Frame Relay or ATM networks. It features enhanced branch security through an integrated firewall and offers unique IP-migration functions that enable seamless convergence to an IP-architecture without 'ripping and replacing' non-IP applications, phones or peripheral devices.

As more and more enterprises migrate to IP-architectures and IP-based services, network performance, security, and quality of service (QoS) are areas of major concern. Enterprises are looking for innovative infrastructure solutions that will enable them to grow while protecting their existing investments. The Vanguard 6800 Router Series provides a leading yet pragmatic networking solution both from a Value and Total Cost of Ownership perspective.

The Vanguard 6800 Multiservice Router Series consists of the 6840 model and the 6841 model, which is the **6840** product enhanced with onboard hardware-accelerated encryption. The Vanguard **6800** Series supports:

- Secure Internet, intranet, and extranet access via IP VPNs with integrated Firewall
- An industry leading set of serial protocols such as IBM SNA & Bisync, and their seamless integration over secure IP networks and Frame Relay
- Broadband DSL, cable, and wireless connectivity
- Advanced QoS support for mission-critical enterprise applications
- Converged voice, video and data

Vanguard® Product Portfolio



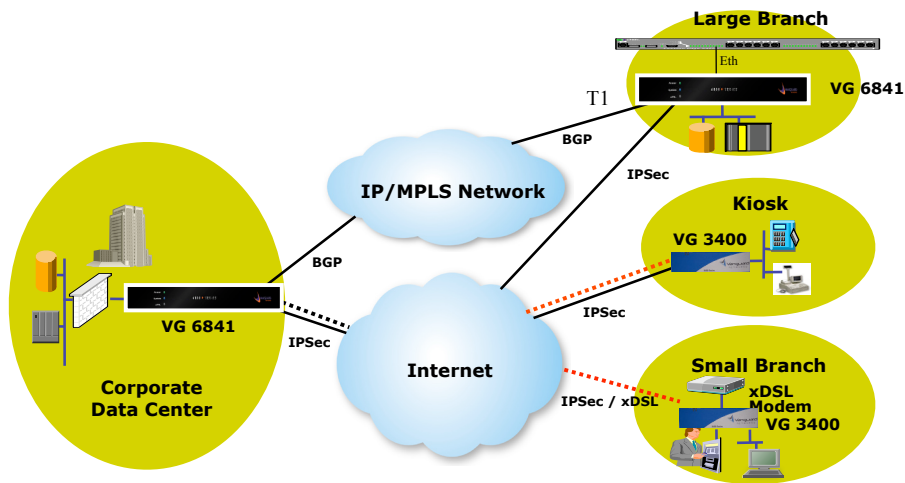
Target Applications

The Vanguard 6800 Series is ideal for a wide variety of applications. The diagram illustrates the many multiservice connections and WAN transports supported by this versatile router series.

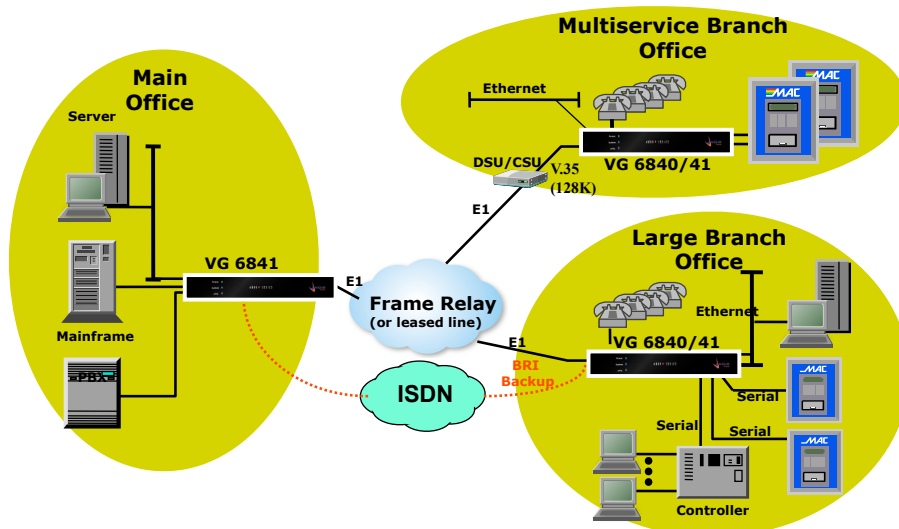
The major applications envisioned for the 6800 Series are the following scenarios:

1. Multi-Site Branch Offices with Site-to-Site VPN tunnels, encryption, and QoS demands for IP traffic.
2. Large Branch Offices with VPN tunnels, Encryption requirements, & QoS demands for IP traffic & multiprotocol voice, as well as legacy data.
3. Central site VPN concentrator for smaller size networks (20-50 sites) and voice concentrator.
4. Multi-Site Private Branch network with serial applications.

Multi-Site Branch Offices with Site-to-Site VPN tunnels, encryption, and QoS demands for IP traffic



Multi-Site Private Branch Network with Serial Applications



Software Specifications - Vanguard Application Ware

Vanguard Applications Ware offers modular software solutions that extend across nearly all models of the Vanguard family of products. The following software features are offered on the Vanguard 6800 Series Multiservice routers:

Voice Features

Analog PBX and PSTN connections
Automatic fax/modem detection
Fax over IP (T.38) and Frame Relay
SIP gateway
H.323 v2 gateway
Basic Calling Features
Caller ID
Call Transfer
Call on-hold
Call waiting
Call forwarding
3-way calling
Up to 16 analog voice channels
Voice Activity Detection (VAD)
Silence Suppression
Voice compression: cRTP
Codecs: G.711, G.723.1, G.729a, and G.729b

Routing and Switching

IPv4, RIP1/RIP2, OSPF, BGP4, DVMRP, PIM-SM (IP Multicast)
BGP Communities (RFC 1997 & 1998)
Policy Based Routing
BGP Multi-path
Classless Inter-Domain Routing (CIDR)
Network Address Translation (NAT)
Port Address Translation (PAT)
Real-Time Transport Protocol (RTP)
Header Compression (RFC 2508)
Multiple IP Addresses per Physical Interface
DHCP Client, DHCP Server
IPX/Novell IPX WAN, AppleTalk
Transparent Bridging (Spanning Tree IEEE 802.1d), SLIP, SoTCP
VLAN 802.1Q & 802.1P
Inter-VLAN routing (802.1Q)

High Availability

Virtual Router Redundancy Protocol (VRRP)
OnNet Proxy (Router Standby Protocol)
ICMP Router Discovery (RFC 1256)
Multi-Link PPP (MLPPP)
PPPoE (RFC 2516)
PPPoA (RFC 1483)

Advanced QoS

IP Type of Service (IP TOS)
Differentiated Services (DiffServ)
Bandwidth on Demand (BOD)
Dial on Demand (DOD)
Link Backup (V.25bis and ISDN)
Priority Queuing, Class Based Queuing (CBQ), Weighted Fair Queuing (WFQ), Weighted Random Early Discard (WRED)
Packet Classification
Policy Based Routing
Generic Traffic Shaping (GTS)
Frame Relay Traffic Shaping (FRTS)
Priority Scheduling of Encrypted Voice Packets
Fast Path Switching for Voice
Compressed Real-Time Protocol (cRTP)
MLPP Link Fragmentation and inter-leaving Segmentation (RFC 1990 & 2686), FRF.12

Security

SPI Firewall
User Authentication: RADIUS, PAP/CHAP
VPNs: IPSec (IP traffic), GRE (non-IP traffic)
IPSec Authentication Header (AH) and IPSec Encapsulating Security Payload (ESP)
IPSec Encryption: IPSec DES (56 bit), 3DES (128 bit) and 3DES (168 bit)
Advanced Encryption Standard (AES): 128, 192, and 256 bit key length
Device Authentication and Key Management: Public Key Infrastructure (PKI) and X.509v3 Digital Certificates
Dead Peer Detection
Message Authentication through Complex Hashing Algorithms (MD5/SHA-1)
Dynamic IP Address (Dynamic VPN Tunnels)

Protocol Support and Conversion Features

Transparent COP (TCOP)
Transparent BOP (TBOP)
ATPAD (Port 3 and 4 only), SLIP
X.42 Lottery Protocol
Transparent Polled Async (TPA)
SNA/SDLC for Serial Connections
BSC 2780, 3780, 3270 (HPAD, TPAD)
QLLC X.25 (IBM NPSI)
AS/400 5494 Communication Server
TN 3270 Remote Server
Conversion SDLC to RFC 1490 Frame Relay
Conversion of BSC 3270/3780 to SNA
Conversion of BSC 3270 to TCP/IP Client or Server

System Management

SNMP v1, v3
Telnet
TFTP
CLI
Embedded Web HTTPD
SSH2 Server
OS Image Management
Configuration Management

Hardware Specifications - Vanguard 6800 Series

Specifications - Hardware (Base Unit)

Desktop or rack-mount (optional 19" rack-mount kit)
 4 Slots for optional daughter cards
 1 RS-232 management port (up to 115.2 kbps)
 1 RS-232 Auxiliary port (up to 115.2 kbps)
 2 x 10/100 BaseT auto-sensing ports
 2 High Speed Serial Ports (up to 2.048 Mbps software selectable for V.24, V.35, V.36, V.11)
 MPC8270 PowerPC Processor
 1 SDRAM Module (up to 1024 MB)
 8MB of non-volatile Flash
 Compact Flash (32 MB with expansion capabilities)
 Integrated H/W accelerated encryption module (6841 only)

Interfaces - Daughter Card Modules

Serial (V.24, V.35, V.36, V.11, X.21)
 56K DSU
 ISDN BRI Data – (2B+D) U interface
 ISDN BRI Data – (2B+D) S/T interface
 ISDN BRI Digital Voice – S/T interface
 Dual E&M Analog Voice
 Quad FXO Analog Voice
 Quad FXS Analog Voice
 Dual FXS Analog Voice
 Single FXS/FXO Analog Voice
 V.90 Modem
 FT1/FE1/T1/E1/PRI

Port Capacities

2 Ethernet (10/100BaseT auto-sensing)
 8 High Speed Serial
 2 RS-232 Serial
 4 56K DSU
 4 ISDN BRI
 8 E&M Voice
 16 FXS Voice
 16 FXO Voice
 4 V.90 Modem
 4 T1 / 4 E1

Physical Dimensions

Height: 1.75 in
 Width: 17.5 in
 Depth: 14.125 in
 Weight: 10.80 lbs unloaded, 12.05lbs, fully loaded

Power Requirements

90 to 264 Vac
 47 to 63 Hz

Environmental

Operating Temperature: 32 °to 104 °F (0 °to 40 °C)
 Storage Temperature: -40 to 158 °F (-40 °to 70 °C)
 Relative Humidity: 5% to 90%, non-condensing

Regulatory Compliance

Safety Certifications: UL1950 3rd Edition, CAN/CSA C22.2 No. 950-95 3rd Edition, IEC 950 2nd Edition Amendment 1, 2, 3 & 4 (CB Scheme), EN60950

EMC Certifications: FCC Part 15 Class A, Canadian IC Class A, CISPR 22 Class A, EN55022: 1997 Class A, EN50082-1 (EN55024)

Telecom Certifications: FCC Part 68, Industry Canada CS-03, CTR-2, CTR-4, CTR-12, CTR-13, Country Specific (contact your local sales representative).

Vanguard 6800 Series Rear Panel

