VANGUARD
MANAGED SOLUTIONS

Vanguard Multiservice Access Device Family

Award-winning Products Building a Strong Foundation for Innovative Network Communication Solutions.

Scalable Hardware Platforms, Modular Software and Application-specific Option Cards for Complete Networking Solutions.

Vanguard® multiservice access devices combine scalable hardware platforms, modular software and application-specific option cards. They deliver unmatched end-to-end solutions to your current network and provide the seamless migration path you will need to handle emerging communication technologies.

Now you can converge your separate Voice, Video, Fax and data networks into a single, powerful, integrated packet data network. While traditional protocols are supported, new applications such as IP-telephony and voice-enabled web sites can be easily added to the network without expensive forklift upgrades. The ability to combine your many specialized networks onto a single Vanguard converged network dramatically reduces the number and resulting cost of site-to-site link connections.

Vanguard Managed Solutions (VanguardMS) Applications Ware modular software is common to the Vanguard series. These flexible software modules focus on specific applications such as VPNs, and Voice. Applications Ware also supports a full suite of IP routing protocols, serial protocols, Quality of Service (QoS), bandwidth management, Packet Voice, data compression and encryption.

From home and small offices to large branch and central sites, VanguardMS has the solution. When high performance, mix and match hardware/software flexibility and the need for custom solutions to fit your network needs are critical, the Vanguard series is your best choice.

Highlights

Scalable routers and flexible software modules interoperate across the product family.

Data, Voice, Video and Fax converge onto a single WAN to eliminate overlay networks and reduce costs.

Voice over IP (VoIP) and Voice over Frame Relay (VoFR) on a single platform leverages lowest carrier tariffs.

Migration path from serial protocols to IP protects network investments and provides future proofing for new technology and network expansion.

Wide range of protocol support for IP, IPX, AppleTalk and IBM systems protect mission critical applications.

Award-winning analog and digital Voice capabilities provide the highest level quality of service.

Hardware data compression and encryption for security and bandwidth efficiency.

Vanguard Product Comparison Chart

Product	VG 320	VG 340	VG 6435	VG 6455	VG 7310	VG 7330
Package	DT	DT	SA	SA/RMT	RMT	RMT
Memory (MB)	12MB DRAM	16-32MB SDRAM	16-32MB SDRAM	32MB SDRAM	128MB SDRAM	128MB SDRAM
Daughter Card Slots	2	2	3	3	0	0
Option Card Slots	0	0	0	2	4	7
Serial Ports	3	3	6	14	32	56
Analog Ports	4	8	12	12	0	0
V.34 Ports	2	2	3	3	0	0
FXS Ports	4	8	12	12	0	0
E&M Ports	4	4	6	6	0	0
FXO Ports	2	8	12	12	0	0
DSU Ports	2	2	3	3	0	0
Digital Voice Chan.	0	0	0	48/60	192/240	336/420
Digital Voice Ports	0	0	0	2	8	14
FT1/FE1 Ports	1	1	3	3	0	0
T1/E1/PRI Ports	0	0	0	2	48	84
ISDN Data Ports	1	1	3	3	48	84
ISDN Voice Ports	1	1	3	3	8	14
ATM Ports	0	0	T1/E1	T1/E1	DS-3/E3	DS-3/E3
LAN Ports	1	1	2	2	5	5
10BaseT	Y	Y	Y	Y	Y	Y
100BaseT	N	Y	Y	Y	Y	Y
Token Ring	N	N	N	Y	Y	Y
Compression	Y	Y	Y	Y	Y	Y
Encryption	N	Y	Y	Y	N	N
ATM/XDSL	N	N	Y	Y	N	N
Performance(PPS)	<1K	7-10K	12-15K	12-15K	100K	100K
Applications Ware™	Y	Y	Y	Y	Y	Y

Vanguard 300 Series Platform

The Vanguard 320 and 340 multiservice access devices are designed to reduce branch networking costs by converging packet Voice over Frame Relay, Voice over IP, Fax, and Video over a single network. With the flexibility of their dual daughter card slots, both products can be adapted to meet current networking requirements while providing a migration path to new networking technologies Vanguard 300s support a host of Serial and Ethernet applications as well as legacy data support. Both the 320 and 340 are space-saving, desktop devices meeting the port density requirements typically found in small businesses as well as in the small branch offices of large corporations.

320

340

Vanguard 320
Enables Ethernet LAN functionality and is ideally suited for the home office, small office or small branch sites.

The Vanguard 320 is a compact, flexible multiservice router designed to enable ethernet LANs and a diverse combination of communications devices to access public or private network services such as IP, Frame Relay, ISDN, and Leased Line. It is ideal for connecting branch office sites with small office/home office locations, as well as telecommuters.

Vanguard 340
Boost the performance of home office, small office or small branch sites with the Vanguard 340.

The Vanguard 340 offers a high performance RISC based architecture to address the next waive of IP services. Its 10/100BaseT auto-sensing port enables easy migration to high-speed local area networks. When combined with VanguardMS hardware-based compression and encryption solution, the Vanguard 340 provides the performance and security critical for VPN applications while providing a path to new broadband technologies.

Vanguard 6400 Series Platform

The Vanguard 6435 and 6455 are an integral part of the award winning Vanguard 6400 series of innovative, multiservice,

RISC-processor based products. Both products provide increased performance and enhanced daughter card capability to meet the ever-increasing demands for higher LAN and WAN bandwidth applications. The Vanguard 6400 series products provide tailored solutions for today's business needs and allow a seamless migration path to new applications and services as they become available.

The Vanguard 6400 reduces branch networking costs by integrating Packet Voice over Frame Relay, Voice over IP, Fax, Video, LAN routing, and Legacy Data support.

Features such as high performance RISC architecture, hardware-based data compression and encryption, an extensive scope of protocol support, and a full range of WAN/LAN interfaces make the Vanguard 6400 series an outstanding solution from small branch to large regional offices.

6435

6455

Vanguard 6435
Delivers increased density and high bandwidth applications to small branch offices.

The Vanguard 6435 is the perfect solution for small branch sites requiring higher throughput to support bandwidth intensive applications. It is designed for small branch offices seeking all the advantages of a full multiservice router. The Vanguard 6435 supports up to six Serial ports and can be configured for multiple Ethernet LAN connections, including 10 or 100BaseT. With its three daughter card slots, it can also mix and match Voice, Video, and Fax applications. Two of the slots also support Enhanced Daughter Cards which provide support for high performance interfaces.

The Vanguard 6435 is available in a low profile desktop design. When high bandwidth applications need to reach the branch office, the Vanguard 6435 is the answer.

Vanguard 6455
The ideal solution for medium to large branches supporting bandwidth intensive applications.

The Vanguard 6455 is ideal for medium to large size branch offices that require additional density and functionality to take advantage of the latest broadband applications. The Vanguard 6455 incorporates the extensive feature set of the Vanguard 6435, can be configured to connect to a 10 or 100 BaseT Ethernet or Token Ring LAN, and supports two T1/E1 digital voice cards.

The Vanguard 6455 has three daughter card slots, two of which can be used for the Enhanced Daughter Cards, and two additional option card slots for increased density and functionality. The Vanguard 6455 is available in a low profile desktop design or it can be rack mounted. For medium to large branch offices with high bandwidth/high density applications, expansion needs, and rackmount requirements, the Vanguard 6455 delivers the features and functionality that make the difference.

Vanguard 7300 Series Platform

Vanguard 7310 and 7330 are high performance, high density, modular and redundant multiservice access and concentrator devices. The 7300 series brings the award-winning Vanguard family to large branch and central site applications. They offer users the flexibility to tailor current network requirements while providing the foundation to address the next wave of technology.

Vanguard 7300 series broad applications enable VanguardMS to offer multiple solutions to meet ever-changing business needs.

7310

7330

Vanguard 7310
The Vanguard 7310 brings the Vanguard family to large branch and central site applications.

Vanguard 7310 offers Compact PCI® standards-based architecture for carrier class requirements and a fully functional MPC750 single slot processor card equipped with an MPC750 PowerPC™ 750 series microprocessor. It supports industry-standard peripheral and I/O options, selectable AC or DC power and interchangeable cards with hot swap insertion and removal. LAN interface includes auto-select 10/100BaseT Ethernet, and up to 16 Token Ring ports.

WAN interface speeds include DS-3/E3 ATM with support for DS3/E3, high-density, multichannel T1/E1 with integrated CSU, and digital voice T1/E1 for Private Branch eXchange (PBX). The

7310 is available as a five slot, 3U rackmount with a single power supply. It has 128MB of memory for configuration files and active operating software, and 32MB of flash memory for upgrades. Individual 7310s can support up to 192 T1 or 240 E1 voice channels and up to 48 data ports. When fully installed in a 7' rack, up to 5760 digital voice ports and 576 data ports can be supported. The 7310 shares the same port cards with the 7330.

Vanguard 7330
The Vanguard 7330 optimizes our large branch and central site applications with additional card slots and redundant power.

7330 offers the same standards-based architecture and fully functional MPC750 processor card as the 7310. It also supports the same industry-standard peripheral and I/O options and the same Ethernet and Token Ring LAN and WAN interface speeds. DS3/E3 T1/E1 is supported with integrated CSU, and digital Voice T1/E1. It has selectable AC or DC power and interchangeable cards with hot swap insertion and removal.

Vanguard 7330 offers a larger eight slot, 8U rackmountable chassis with a dual power supply for redundancy. It has 128MB of memory and 32MB of flash memory. Individual 7330s can support up to 336T1 or 420 E1 Voice channels and up to 84 data ports. When fully installed in a 7' rack, up to 2100 digital Voice ports and 420 data ports can be supported. The 7330 shares the same port cards with the 7310.

Vanguard Applications Ware™ Base Licenses

The modular software structure of Vanguard Applications Ware allows you to select appropriate software components for your needs today and build on them as your business changes. The three base licenses each support a multitude of applications and can be further enhanced with the addition of upgrade licenses.

The three base licenses are as follows:
- Vanguard IP+ Applications Ware
- Vanguard SNA+ Applications Ware
- Vanguard Multiservice Applications Ware

All foundation licenses contain critical networking functionality required to enable all of the applications provided in the license. Whether it's features facilitating ease of configuration and management or a comprehensive set of WAN services or attributes allowing the best quality of service for specific application types, they are all included in the basic software product.

Vanguard IP+ Applications Ware
Vanguard IP+ Applications Ware provides full IP routing capabilities in support of the many IP based applications and a host of other services. IP+ Applications Ware offers a comprehensive IP protocol suite, compliant with worldwide standards in support of multi-vendor environments. The IP+ Applications Ware license also includes support for IPX and AppleTalk protocols.

As the world migrates to IP, Vanguard Applications Ware gets you there with a smooth migration path. VanguardMS' comprehensive support for IP includes such features as:

- IP Routing Protocols
- IP Multicast/Broadcast
- Default Router Gateway/Proxy Router
- Access Controls and Packet Filtering
- Network Address Translation/Network Address Port Translation
- Classless Inter-Domain Routing
- Policy Based Routing
- Accelerated IP Forwarding

Enabling New and Exciting Business Applications with Vanguard Applications Ware

Vanguard SNA+ Applications Ware

IBM environments remain quite prevalent in today's diverse data networks and often retain specific protocol requirements in order to provide the best solution for you. Vanguard SNA+ Applications Ware recognizes the need for a cost-effective solution today, as well as your critical business applications and the need to move painlessly into the future.

SNA+ Applications Ware is designed to meet the needs of those using IBM computer resources and offers an extensive suite of features intended to maximize current investment. Whether the network consists of large networks employing high-end enterprise servers and mainframes or small to medium sized networks using mid-range servers or even application specific devices such as ATMs (Automated Teller Machines), VanguardMS offers a creative and application aware solution.

Add to that all the functionality contained in the IP+ license and you've got a winner for legacy applications requiring a connection today plus a solid migration path for newer IP based applications.

Vanguard Multiservice Applications Ware

Vanguard Multiservice Applications Ware, the flagship of the software line, was designed to streamline operations, reduce networking costs, achieve better bandwidth utilization and lay the foundation for a flexible network architecture. Multiservice Applications Ware offers you cost savings by integrating and converging multiple traffic types including data, voice and video.

Central to functionally transporting multiple types of applications, is the ability to recognize the traffic characteristics and handle each appropriately. Services such as data compression, quality of service, fast path with minimal delay and true congestion management, enable new and advanced applications while providing a single, powerful network affording many cost benefits.

Multiservice Applications Ware is for the customer who needs to do it all. It combines the functionality of the IP+, SNA+ and Voice Applications Ware licenses into one truly multiservice, multimedia and multi-application software license at an economical price supporting today's applications with an eye to whatever the future may include.

Vanguard Applications Ware is VanguardMS' innovative multiservice, multimedia and multi-application networking software focused on vital business applications. Vanguard Applications Ware is intended to fulfill today's needs and applications with a real focus on standards, yet structured for easy advancement to future technological innovations.

The premise is simple:

- Select the foundation software licenses based on your current networking requirements.
- Determine the appropriate Vanguard hardware based on physical connectivity requirements – the software is compatible across the entire product family.
- Add functionality as business needs dictate.
- Protect today's network investments by providing a clear and achievable migration path for future technologies.

Vanguard Applications Ware™ Upgrade Licenses

Upgrade software modules add functionality to the base modules and can be used as your requirements dictate. They provide you with a strong migration path to either newer technologies and/or to services as they are required.

Vanguard Voice Applications Ware

Vanguard Voice Applications Ware delivers packetized voice, creating the ability to integrate Voice, Video, Fax and Data traffic over an IP or Frame Relay based network. The Voice Applications Ware module strives for standards compliance enabling the best quality voice with the least impact to critical data applications.

Voice Applications Ware supports the following:

- Packetized Voice over Frame Relay and IP
- Voice compression
- Standards based signaling
- Gatekeeper interoperability

This upgrade module allows you to take advantage of today's integration of multimedia types and realize immediate and dramatic cost savings by employing an efficient use of bandwidth.

Security Applications Ware

Given the significant shift to public networks, both Internet and Frame Relay, shared networks are becoming more and more vulnerable. The Security Applications Ware module is designed to protect networks from the risk of critical data being read, duplicated or altered. This module delivers secure Internet or Frame Relay connectivity to and from a corporation's central site and throughout its branch offices.

This Virtual Private Network (VPN) solution is ideal for enterprises that are looking to take advantage of the flexibility, global reach, security and cost savings of internet-based VPNs. A software upgrade used in conjunction with a hardware encryption component provides standards-based tunneling and encryption without the negative impact of processor-intensive tasks.

Security Applications Ware plus the hardware module provides:
- IPSec
- Triple DES (Data Encryption Standard)
- Firewall packet filtering
- Message authentication through complex hashing algorithms
- Standards based key management

Vanguard AS/400 Applications Ware

The AS/400 is the largest selling business computer in the world, with over 500,000 units installed. The Vanguard AS/400 Applications Ware module offers a full conversion between existing controllers and LAN-connected AS/400s. Regardless of the type or style of a remote control unit, the AS/400 can be upgraded to support high-speed ethernet or Token Ring. This module provides a cost-effective way to migrate to newer technologies without a forklift upgrade.

Need more info?

VanguardMS offers a full range of network lifecycle services. Services may differ from country to country. Contact your local VanguardMS representative for details, or access our web site at: www.vanguardms.com.

VANGUARD
MANAGED SOLUTIONS

www.vanguardms.com