Vanguard NETWORKS

Data Sheet

7300

Vanguard 7300 Series

Highlights

Industry leading convergence of IP voice and data applications

Flexible IP differentiated Services QoS (Quality of Service) policies that can be tailored to the most stringent application requirements

Comprehensive support for L2 ATM/Frame Relay VPNs, L3 IPSEC site-to-site & IP/MPLS VPNs, and legacy protocols including SNA/ SDLC

Proven Vanguard Applications Ware software focuses on providing solid networking solutions for customers Industry standard end-to-end solutions via the complete Vanguard product portfolio

Vanguard 7300 Series Enables Data and Voice Convergence and lays the Foundation for Multi-Service Application Integration with Next Generation IP Networks

High Performance, High Density, Multiservice Access and Concentrator Devices

In a networked economy where the traditional geographic boundaries between corporations located in different continents have diminished, companies seek future-proof solutions to both extend the useful life of profitable services and accelerate their adoption of the latest cost-effective enhanced technologies.

Vanguard Networks can take care of these networking and communications technologies so you can take care your business.

The Vanguard® 7300 series of high performance, high density, modular and redundant multi-service access and concentrator devices is designed to meet the needs of large regional or corporate data centers and head-end locations, and at the same time complement the award winning Vanguard family of low- to mid-range multiservice routers. The Vanguard 7300 offers highly customizable applications, flexibility and service efficiency to assist you in implementing the next wave technology.

Vanguard Networks is dedicated to providing innovative and reliable solutions. Enabling the convergence of data, voice and video, preparing for next generation applications such as the integration of the wireless and wireline worlds, and building the foundation to make that integration a reality is the mission of Vanguard Networks and the Vanguard 7300 series.

The Vanguard 7300 series consists of the Vanguard 7310 and the Vanguard 7330 which feature the following capabilities:

- Compact PCI® standards-based architecture designed for carrier class requirements
- High Performance single slot processor card equipped with 512 MB base level DDR SDRAM and MPC750 PowerPC 750 Series Microprocessor
- Industry-standard peripheral and I/O options
- AC or DC power
- Standard 19” rack mountable
- Fully interchangeable cards with hot pluggable insertion and removal capabilities
- 7310 is a 5-slot chassis, 4U, with dual redundant power suplies
- 7330 is a 8-slot chassis, 4U, with dual redundant power supplies
- 512Mb memory for configuration files and active operating software v 32Mb flash memory
- Great port density — up to 2100 digital voice ports and 420 data ports per 83” rack

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Vanguard 7300 Series

Primary Interfaces

Flexibility, modularity, and scalability make the Vanguard 7300 series extremely versatile in accommodating a variety of applications (e.g high end central site router, voice gateway, regional concentrator) to meet your ever-changing business needs.

- LAN interfaces: Auto-selectable 10/100/1000BaseT Ethernet and Gigabit Ethernet.
- High Speed WAN interfaces: DS-3/E3 ATM, ATM Adaptation Layer 5 (AAL5), Variable Bit Rate (VBR), Constant Bit Rate (CBR) and Unspecified Bit Rate (UBR)Traffic Support), RFC 1483 - Multiprotocol over ATM, RFC 1490 - Multiprotocol over Frame Relay, FRF.5 - Frame Relay-to-ATM Network Interworking FRF.8 - Frame Relay-to-ATM Service Interworking
- High-density, multichannel T1/E1 with integrated CSU
- Digital voice T1/E1 for private branch exchange (PBX)
- High speed flexible Serial ports: 8/card, user configurable for V.35, V.24, X.21, EIA530, automatic DTE/DCE selection via cable, up to 8Mbps per port
- ISDN Primary Rate Interface (PRI)

Port Capacities

One of the key benefits of the 7300 series, is its high density capabilities. For added convenience the 7310 and the 7330 share the same port cards.

Port Capacities	7310	7330
10/100 Ethernet	20	20
Gigabit Ethernet	2	2
T1/E1/PRI	48	84
Voice Channels		
T1	192	336
E1	240	420
Serial (V.35, RS232, etc)	32	56
Power Supplies	2	2
DS3/E3 ATM	2	2

Support for Business-Critical Applications

Enterprise networks must provide high availability in order to maintain access to key resources whenever and wherever required. This requirement is further magnified in a frictionless economy where businesses depend on their networks for key activities including electronic commerce, ERP applications like, TN 3270 transactions, and client/server or web based distributed applications. As businesses rely on the network to conduct core activities, the adverse impact from network downtime can lead to decreased productivity and lost revenue. The Vanguard 7300 series was designed with the uncompromising performance objectives of reliability, availability, serviceability and manageability.

The following features contribute significantly to achieving these goals:

- Large flash to support duplicate software images
- Additional memory for duplicate configuration memory files
- Field replaceable components including ability to replace front card only while leaving cables physically connected to the rear module
- Many software features offering built in redundancy such as Router Proxy and Virtual Router Redundancy Protocol (VRRP)
- Quick Configuration utilizing Vanguard Configuration Wizard

Vanguard 7300 Key Features and Benefits

Key Features	Benefits
High Performance	
• Up to 250Kpps forwarding capacity • Variety of WAN Interfaces • High Density configurations	• Increased scalability • Increased Flexibility • Future-proofing
Multiservice WAN (Security VPN)	
• L3 IP/MPLS VPNs (IETF RFC 2547 CE- function) • IPSEC site-to-site IP VPNs (featuring hardware accelerated AES/3DES Encryption) • X.509 digital certificates • Voice - G.723, G.729a compression • ATM - VBR, UBR, CBR, AAL-5 • Ethernet • PPP • Frame Relay • X.25	• Upgrading to newer network technologies • Support for Large VPN deployments • Use of most cost efficient carrier services algorithms, PBX, PSTN
Multiservice User Data Connection	
• Flexible support for user applications • DATA LAN - IP, IPX	• Migration path from older technologies to newer • Data Serial - SDLC, TBOP
Common Port Cards	
• Full interchangeability between 7310 and 7330 to the network	• Seamless upgradeability to higher speeds without disruption
High Availability	
• Significantly increased uptime • Dual Sources of power • Quickly recover in the case of failure	• Redundant power supply • Fast Reboot (greatly increased over previous Vanguard Application Ware)
Manageability and Serviceability	
• Full Management • Software upgrade tool • Dual Flash • Dual configuration memory files • Field replaceable components	• Simple migration path from previous Application Ware software versions • Duplicate software images for easy upgrade/downgrades • Protection of current configuration memory during upgrade • Local service, no returning to the factory performance

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Software Specifications - Vanguard Application Ware

The Vanguard 7300 not only brings you hardware flexibility and enhanced capabilities; it fully integrates Vanguard Applications Ware, the proven operating system for Vanguard platforms. Vanguard Applications Ware offers an extensive array of applications and its functionality is time tested and highly reliable. It enables a highly efficient software architecture that provides a dual core routing and switching schema. The primary software capabilities of the Vanguard 7300 family include:

IP Routing & Protocols

TCP/IP, UDP, PPP
PPPoE, PPPoA
RIP1/RIP2
Classless Inter-domain Routing (CIDR)
Network Address Translation (NAT)
PIM Sparse IP Multicast
IGMPv2 Multicast Join/Prune
IPX
Real-Time Transport Protocol (RTP) Header Compression
Multiple IP Addresses per Physical Interface
Radius Client
DHCP Server & Client
Virtual Router Redundancy Protocol (VRRP)
Distance Vector Multicast Routing Protocol (DVMRP)

Packet Voice

Voice over IP, Voice over Frame Relay, Voice over IP over SIP
ATM (All interoperable within same product)
Voice compression (minimizing bandwidth requirements)
Voice Broadcast
Digital Private Branch Exchange (PBX) and Public Switched Telephone Network (PSTN) Connections
G.711, G.723.1, G729a, H.323v1 and H.323/v2 VoIP Signaling
Up to 336/420 (T1/E1) Voice Channels
Q.SIG Signaling
T.38 fax, Group III fax
Centralized Voice Switching Table
Dynamic Coder
DSO Bypass (MFC 5C R2 Compatible)

QoS for the Optimization of Converged Data, Voice and Video Traffic

Packet Classification
  By IP Source Address, Destination Address, TCP/UDP Source Port, Destination Port, Application protocol.
Traffic Metering
  By DiffServ Behavior Aggregates (Expedited Forwarding & 4 Assured Forwarding Groups)
Conditioning
  Including Policing, Shaping & remarking of non-conformant flows. Support for IETF RFC 2698 Two Rate three color marking)
Mapping
  Featuring RED/WRED congestion avoidance, Delay service profiling (Strict priority Fast Path for Real-Time voice/video & Credit-based Fair Queuing (CR-BFQ) for delay tolerant applications)

IBM Networking

SNA/SDLC for serial connections
SDLC to LLC2 Conversion
AS/400 5494 Communications Server
BSC to LLC2 Conversion

Additional Services

PPP, Multi-link PPP (synchronous only)
TBOP
SoTCP (Serial over TCP)
ISDN PRI
Enhanced PBX Services (call hold, transfer, waiting)

System Management

SNMP Management
Configuration Management
OS Image Management
Telnet
CLI
Embedded Web HTTPD
SSH2 Server (Hard)

Hardware Specifications - Vanguard 7300 Series

Physical Dimensions

Height: 17 in (4U, 177.8 mm)

Width: 17.3 in (439.4 mm)

Depth: 13.4 in (340.4 mm)

Weight: Approximately 30 lbs (13.6 kg) unloaded up to 35 lbs (15.9 kg) fully loaded

Card Orientation

Power Specifications

Power supply (100-240 VAC, 47-63Hz), 300 Watts
Built-in power supply (-38 to -72 VDC)
Built-in redundant power

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, EN6095 A11: 1997, IE60950/A4: 1996

EMC Certifications: FCC Part 15 Class A, C ISPR 22 Class A, AS/NZS 3548 Class A EN55022:1998, EN55024:1998

Need more info?

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

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