



NetVanta 3448

Multiservice Access Router

Product Features

- Multiservice access router supporting up to two T1s
- *RapidRoute*™ technology for greater performance
- Integral eight-port non-blocking Ethernet switch, with Power over Ethernet (PoE) option
- Voice Quality Monitoring (VQM) and Mean Opinion Score (MOS) prediction
- Inherent URL filtering
- Standards-based routing/switching protocols
- Feature-rich ADTRAN® Operating System (AOS)
- CompactFlash® slot for auto-provisioning
- Stateful inspection firewall for network security
- Optional IPsec Virtual Private Network (VPN) for secure corporate connectivity across the Internet
- Onboard hardware encryption accelerator
- Recognizable Command Line Interface (CLI) and intuitive Web-based Graphical User Interface (GUI)
- Network Address Translation (NAT)-compatible Session Initiation Protocol (SIP) Application Layer Gateway (ALG) for Voice over IP (VoIP)
- Wi-Fi® Access Controller for centralized management of NetVanta® Wireless Access Points (WAPs)
- Industry-leading five-year North American warranty



As a multiservice access router, the NetVanta® 3448 uses *RapidRoute* technology to deliver the high-packet throughput required for IP telephony, corporate connectivity, and Internet access. This performance-enhanced platform delivers wire-speed throughput, even with advanced services enabled like Quality of Service (QoS), NAT, firewall, and VPN.

Modular Hardware

The NetVanta 3448 is a modular, 1U-high, rackmountable metal chassis that offers a single slot to house any of the NetVanta Series Network Interface Modules (NIMs) and Dial Backup Interface Modules (DIMs). For dial backup, an analog modem DIM or an ISDN BRI DIM is available, preventing downtime by dialing around a failed circuit to any PPP-compliant device. The NetVanta 3448 also includes two 10/100Base-T Ethernet interfaces and a fully managed, non-blocking, eight-port switch which can be separately powered to yield an 802.3af-compliant PoE switch delivering a full 15.4 watts per port.

Standards Protocols

Complementing the versatile hardware, the AOS allows for the support of standards-based switching, Virtual LAN (VLAN) tagging, static and default routes, and demand routing. This enables fast, accurate network convergence using routing protocols such as BGP, OSPF, and RIP. In addition, the AOS terminates MPLS, Frame Relay, Multilink Frame Relay, PPP, Multilink PPP, and HDLC Wide Area Network (WAN) protocols. Multihoming is also available to provide redundant or backup WAN links to multiple ISPs, guaranteeing a wide-area connection.

QoS

QoS is also supported for delay-sensitive traffic like VoIP or video. To prioritize mission-critical traffic and control network congestion, the NetVanta 3448 uses Low Latency Queuing, Weighted Fair Queuing (WFQ), Class-based

WFQ, and DiffServ marking to establish the priority of IP packets routed over the WAN.

VoIP Ready

In combination with the QoS features, a specialized SIP ALG allows SIP traffic to traverse NAT-enabled firewalls. For enterprise networks, this interoperability allows IP PBXs, phones, and other SIP-based devices to set up, tear down, and pass voice and call control messages seamlessly through the integral NAT-enabled firewall.

The NetVanta 3448 also deploys VQM to capture MOS, jitter, delay, and packet loss statistics necessary to troubleshoot VoIP calls over the WAN. This powerful, yet graphically intuitive, diagnostic tool allows for quick isolation of network issues to ensure superior call quality.

Security

The AOS provides a powerful, high performance stateful inspection firewall that can identify and protect against common Denial of Service (DoS) attacks like TCP syn flooding, IP spoofing, ICMP redirect, ping of death, and IP reassembly problems.

In addition, the AOS is capable of providing an inherent URL-filtering package without the use of an external server. URL filtering is another level of security that allows system administrators to restrict Internet access by permitting or denying specific URLs. This URL-filtering feature also includes the ability to produce top website reports of the most frequently requested websites, allowing system administrators to modify the URL filter lists.

The NetVanta 3448 also supports up to 100 simultaneous IPsec VPN tunnels and encryption algorithms like DES, 3DES, and AES. By supporting IPsec, the NetVanta 3448 is fully compatible with other IPsec VPN-equipped NetVanta products.

Administration

The AOS offers both a CLI that mimics the widely deployed industry *de facto* standard and an intuitive Web-based GUI with step-by-step configuration wizards.



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Multiservice Access Router Product Specifications

Physical Interface

- **NIM:** 56/64k, T1/FT1, T1/FT1 with DSX-1, Dual T1, E1/FE1, E1/FE1 with G.703, ADSL, SHDSL, and Serial
- **DIM:** Analog Modem and ISDN BRI (U and S/T)
- **LAN:** Two Auto-sensing 10/100Base-T ports (RJ-45) RJ
- **Switch:** Eight-port, Auto-sensing Ethernet Switch 10/100Base-T Full Duplex (Optional PoE support)

Diagnostics LEDs

- Status
- Ethernet 1
- Switch 1-8
- WAN
- Ethernet 2
- PoE
- DBU

Memory

- **RAM:** 128 MB
- **FLASH:** 32 MB
- CompactFlash® Slot

Protocols

- eBGP/iBGP
- OSPF
- RIP (v1 and v2)
- PIM Sparse Mode
- Demand Routing
- Policy-based Routing
- GRE
- ATM (ADSL)
- Frame Relay
- Multilink Frame Relay
- Layer 3 Backup
- Multi-VRF CE
- PPP
- Multilink PPP
- PPPoE
- PPPoA
- IGMP v2
- RFC 1483
- HDLC
- PPP Dial Backup
- PAP and CHAP
- Multihoming
- VRRP

Quality of Service

- Low Latency, WFQ and Class-based WFQ
- DiffServ Packet Marking and Recognition
- Frame Relay Fragmentation
- Traffic Monitoring (NetFlow 9)

Voice Quality Monitoring (Optional)

- Mean Opinion Score (MOS) prediction
- Jitter, Delay and Packet Loss
- Past and Active Calls

Switching

- Weighted Round Robin (WRR) and Strict Priority Queuing
- VLAN Support (802.1Q)
- Spanning Tree (802.1D)
- Rapid Spanning Tree (802.1w)
- 802.1p and DiffServ QoS
- Optional 802.3af PoE Delivering 15.4 watts per Port

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Administration

- CLI
- Email Alerts (SMTP)
- Policy Statistics
- TCL Scripting
- FLASH provisioning
- Web-based GUI
- n-Command® Support
- SNMP v3
- SYSLOG Logging

DHCP

- Client, Server, and Relay

Security

Firewall

- Stateful Inspection Firewall
- DoS Protection
- Access Control Lists (ACLs)
- ALGs

Network Address Translation

- Basic NAT (1:1), NATP (Many:1), and Port Translation
- NAT compatible SIP ALG

Secure Management

- Multi-level Access Control
- RADIUS AAA
- Port Authentication (802.1x)
- TACACS+
- SSH CLI and SSL GUI

Content Filtering

- Inherent URL filter
- Top website reports
- Integration with Websense®

Optional VPN

- **IPSec Tunnel Mode:** 100 Tunnels
- **Encryption:** DES, 3DES, and AES
- **Authentication Mechanisms:** XAUTH, Digital certificates, Pre-Shared Keys, and Secure ID

Environment

- **Operating Temperature:** 0° to 50 °C (32° to 122 °F)
- **Storage Temperature:** -20° to 70 °C (-4° to 158 °F)
- **Relative Humidity:** Up to 95%, non-condensing

Physical

- **Chassis:** IU, metal chassis
- **Dimensions:** 1.75" H, 11.75" W, 7.5" D
- **Weight:** 4 lbs.
- **Auto-ranging Power:** 100-250 VAC, 50-60Hz, 25 watts

Agency Approvals

- CE Mark, UL & Canadian UL (CUL), IEC/EN
- RoHS

Ordering Information

Equipment	Part #
NetVanta 3448	1200821E1
NetVanta 3448 with VPN and VQM	4200821E2
NetVanta 3448 PoE	4200821E11
NetVanta 3448 PoE with VPN and VQM	4200821E12
VPN and VQM Software Upgrade	1950821E2