

NetVanta 4000 Series

4148

Fixed-Port Secure Access Ethernet Router



Gigabit



Ready



VQM



VoIP

Benefits

- Managed Router With Four Gigabit Ethernet Interfaces and 8-Port Switch
- PoE Option Includes 200W PoE Budget
- Voice Quality Monitoring (VQM) and Mean Opinion Score (MOS) Prediction
- Utilizes Standards-Based Routing Protocols Used By the Widely Deployed NetVanta Series
- Compatible With Industry-Leading Soft-Switches and Call Agents
- Dynamic Bandwidth Allocation Affords More Efficient Utilization
- Stateful Inspection Firewall for Network Security
- Quality of Service (QoS) for Delay- and Jitter-Sensitive Traffic Like VoIP
- Supports 802.1q Virtual LAN (VLAN) Trunking
- Command Line Interface (CLI) Mimics Industry De Facto Standard
- Network Address Translation (NAT) for IP Address Concealment
- Feature-Rich Adtran Operating System (AOS)
- Industry-Leading North America Five-Year Warranty
- Optional IPSec Virtual Private Network (VPN) for Secure Tunneling
- Optional Full-Featured eSBC for Robust Network Security and Voice Interoperability

Overview

The NetVanta® 4148 is a fixed-port, high-performance Ethernet router supporting converged access and high-quality voice services. It provides four routed, autosensing Gigabit interfaces, an 8-port Ethernet switch, and includes PoE. This product is ideal for carrier bundled service offerings up to 1Gbps, and enterprise-class Internet access for secure, high-speed corporate connectivity. The NetVanta 4148 is available as a 1U-high rack mountable platform.

Flexibility and Redundancy

The NetVanta 4148 is ideal for multiple applications where Ethernet redundancy is needed. There are four Gigabit ports that can be either LAN or WAN facing. With two Ethernet delivered access services immediate failover to the active link takes place any time a link down event occurs. Many deployments still feature separate voice and data networks. The NetVanta 4148 is a perfect fit for these situations with a single WAN link, using the other Gigabit interfaces to accomplish this.

Standards Protocols

The NetVanta 4148 is further complemented by AOS. The AOS allows for the support of static and default routes, demand- and policy-based routing, and fast, accurate network convergence using routing protocols such as BGP, OSPF, RIP, and PIM Sparse Mode for multicast routing. Multihoming is also available to provide redundant or backup WAN links to multiple ISPs, guaranteeing a WAN connection.

Hierarchical QoS

QoS is also supported for delay-sensitive traffic like VoIP or video. To prioritize mission-critical traffic and control network congestion, the NetVanta 4148 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

The NetVanta 4148 is VoIP-ready with QoS, Class of Service (CoS), Session Initiation Protocol (SIP) Transparent Proxy, Net Flow 9 Traffic Monitoring, and VQM. Traffic Monitoring is for collecting and measuring network traffic patterns, while VQM is a graphically intuitive interface displaying captured data for MOS, jitter, delay, and packet loss statistics necessary to troubleshoot VoIP calls.

The NetVanta 4148 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.



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Enterprise Session Border Control (eSBC)

The NetVanta 4148 can provide optional eSBC functionality delivering a truly converged application platform at the customer premises. This feature is becoming mandatory in today's service deployments to normalize, secure and troubleshoot SIP-to-SIP communication between a carrier network and the customer's SIP-compliant equipment. The strength of the NetVanta 4148 eSBC is its ability to grow as your VoIP services expand, supporting up to 1,000 calls.

Security

The AOS provides a powerful, high-performance stateful inspection firewall. The firewall 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 feature also includes the ability to produce website reports of the most frequently requested websites, allowing system administrators to modify their URL filter lists.

PoE

The eight-port switch in the NetVanta 4148P provides up to 200 watts of 802.3af (PoE), 802.3at (PoE+) and Legacy PoE for powering IP phones, WAPs, and other devices requiring LAN power.

The NetVanta 4148 provides significantly increased IPSec VPN throughput. It also supports encryption algorithms like DES, 3DES, and AES. With this upgrade, the NetVanta 4148 is fully compatible with other IPSec VPN equipped NetVanta products.

Management

The NetVanta 4148 Series can be remotely managed by Adtran's n-Command® MSP platform. Adtran n-Command platforms offer the ability to discover devices, make mass configuration changes or firmware upgrades, backup/restore configurations, and generate inventory reports for asset management. Adtran n-Command MSP also offers VoIP VQM and reporting, as well as an industry-leading, easy-to-use, Graphical User Interface (GUI). The NetVanta 4148 is available in rack mountable, and desktop versions; and is backed by an industry-leading warranty.

Administration

The AOS offers an intuitive Web-based GUI that provides step-by-step configuration wizards, management capability, and the ability to upload firmware updates. In addition, it has a standard CLI that mimics the widely adopted, industry de facto standard. The sequence of commands required to configure similar devices is almost identical, eliminating training costs typically associated with learning a new operating system or obtaining costly industry certifications. The CLI also allows for configuration scripts to be used, saved, and downloaded as a quick-and-easy recovery mechanism.

Product Specifications

Physical Interfaces

- 2 – Combo RJ45 Copper/SFP Ports
- 2 – RJ45 Copper Gigabit Ethernet Interfaces
- 8 – 10/100/1000Base-T PoE Ethernet Switch
- Full Duplex
- Auto-Negotiation
- RJ-45
- USB 2.0
- Console Port
- Status LEDs
- Status (Power)
- USB
- PoE (NetVanta 4148P only)
- Gigabit ports 1 – 4
- Ethernet Switch 1 – 8

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Throughput

- Routing/NAT/FW: 3.5M pps
- VPN iMIX: 400Mbps

Quality of Service (QoS)

- Low Latency and Weighted Fair Queuing (WFQ)
- Class-Based WFQ
- DiffServ Packet Marking and Recognition
- Traffic Monitoring (NetFlow 9)

Voice Quality Monitoring (VQM)

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

Traffic and Network Quality Monitoring

- ICMP and TWAMP Probes and Tracks
- One-Way Delay
- Round-Trip Loss and Delay
- Inter-Packet Delay Variance
- Traffic Flow Collection and Analysis
- Packet Capture

Administration

- Familiar Command Line Interface (CLI)
- Web-Based GUI
- n-Command Support
- SNMP V2 and V3
- SYSLOG Logging
- Email Alerts (SMTP)
- Policy Statistics
- TCL Scripting
- Login Privilege Levels
- Telnet, Craft/Console Port, SSH, Ping,
- Trace Route and NTP

DHCP

- Client, Server and Relay

Firewall

- Stateful Inspection Firewall
- Denial of Service (DOS) Protection
- Access Control Lists
- Application Level Gateways
- Packet Filtering

Protocols

- | | |
|-------------------|-------------------|
| • EBGp/iBGp | • OSPF |
| • RIP (v1 and V2) | • PPPoE |
| • PIM Sparse Mode | • Multilink PPPoE |
| • IGMP V2 | • Demand Routing |
| • GRE | • RFC 1483 |
| • PPP Dial Backup | • Multihoming |
| • PAP and CHAP | • Layer 3 Backup |
| • Multi-VRF CE | • VRRP |
| • TWAMP | |

Network Address Translation

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

NAT Traversal and Remote Survivability

- B2BUA
- SIP Registrar for IP Phones
- SIP Proxy with Survivability
- Transparent/Stateful/Outbound

Content Filtering

- Inherent URL Filtering
- Top Website Reports
- Integration with Websense

Secure Management

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

PoE (NetVanta 4148P only)

- 802.3at
- 802.3af
- 200W PoE Budget

VPN (Optional)

- IPSec Tunnel Mode: 500 Tunnels
- Encryption: DES, 3DES and AES
- Authentication Mechanisms: XAUTH, Digital Certificates, Pre-shared Keys and Secure ID

Environment

- Operating Temperature: 32° to 122° F (0° to 50° C)
- Storage Temperature: -40° to 158° F (-20° to 70° C)
- Relative Humidity: Up to 95%, Non-condensing

Physical and Power

- 1U Metal Rackmount
- Dimensions: 1.75 in. x 17.25 in. x 9.63 in. (H x W x D), (4.45 cm x 43.82 cm x 24.45 cm)
- Weight: 8 lbs. (3.6 kg)
- Power: AC (Auto-ranging, 100 to 250 VAC, 50/60 Hz, 0.4 A Maximum)

Agency Approvals

- FCC Part 15 Class A
- CE Mark
- UL and Canadian UL
- RoHS
- C-Tick for Australia and New Zealand

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Ordering Information

Equipment	Part No.
NetVanta 4148	17004148F1
NetVanta 4148 with EFP (VPN and VQM)	47004148F2
NetVanta 4148 100-Session SBC	47004148F2#100
NetVanta 4148 300-Session SBC	47004148F2#300
NetVanta 4148 500-Session SBC	47004148F2#500
NetVanta 4148 1000-Session SBC	47004148F2#1000
NetVanta 4148P	17004148F11
NetVanta 4148P with EFP (VPN and VQM)	47004148F21
NetVanta 4148P 100 SBC Bundle	47004148F21#100
NetVanta 4148P 300 SBC Bundle	47004148F21#300
NetVanta 4148P 500 SBC Bundle	47004148F21#500
NetVanta 4148P 1000 SBC Bundle	47004148F21#1000
Software Options	
NetVanta 4148 EFP Upgrade	19504148F2
NetVanta 4148 SBC Upgrade, 5 Calls	1964SBCF5
NetVanta 4148 SBC Upgrade, 10 Calls	1964SBCF10
NetVanta 4148 SBC Upgrade, 25 Calls	1964SBCF25
NetVanta 4148 SBC Upgrade, 50 Calls	1964SBCF50
NetVanta 4148 SBC Upgrade, 100 Calls	1964SBCF100
NetVanta 4148 SBC Upgrade, 300 Calls	1964SBCF300
NetVanta 4148 SBC Upgrade, 500 Calls	1964SBCF500
NetVanta 4148 SBC Upgrade, 1000 Calls	1964SBCF1000

Adtran

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617004148F1-8C

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