



NetVanta 6355

Product Features

- All-in-one Hosted IP voice and data solution
- Integral SIP gateway, router, PoE switch, and security
- Full-featured IP router supporting up to three T1s for data and Internet access
- Managed, 24-port PoE (802.3af) switch
- Stateful inspection firewall for network security
- IPSec Virtual Private Network (VPN) for secure corporate connectivity across the Internet
- Compatible with industry-leading softswitches and call agents
- Up to 10 analog POTS interfaces with remote survivability
- Supports IP, analog, and digital phones/phone systems; fax machines, modems, and Wireless Access Points (WAPs)
- Dynamic bandwidth allocation enables more efficient utilization
- Standardized G.729a voice compression requires less bandwidth per voice call
- Voice Quality Monitoring (VQM) and Mean Opinion Score (MOS) Prediction
- CompactFlash® slot for IP phone configuration files and firmware
- Recognizable CLI eliminates retraining
- User-friendly Web-based GUI
- Feature-rich ADTRAN Operating System (AOS)
- Industry-leading warranty



IP Business Gateway

The NetVanta® 6355 IP Business Gateway is a **unique, all-in-one solution for Hosted VoIP PBX services, Internet access, and business connectivity.** This powerful platform combines the voice functionality of ADTRAN's industry-leading Total Access® 900e IP Business Gateway and the widely deployed NetVanta Power over Ethernet (PoE) Switch-Router into a compact 1U chassis. This all-in-one product includes a robust SIP gateway, a full-featured IP router, stateful inspection firewall, VPN, 24-port powered (802.3af) Fast Ethernet switch with Gigabit uplinks, and two expansion slots for Network and Voice Interface Modules (NIMs/VIMs).

Hardware and System Features

The modular NetVanta 6355 is powered by the ADTRAN® Operating System (AOS) and includes data networking features such as standards-based routing protocols and Layer 3 Quality of Service (QoS). The integral switch provides 24 powered (802.3af) 10/100 Ethernet ports, with 802.1q VLANs, link aggregation, and Gigabit uplinks for stacking. Voice support includes built-in dual trunk (FXO) and station (FXS) interfaces for analog connections and E911 dialing. Network and voice expansion options include analog four-port trunk (FXO), analog four-port station (FXS), analog two-trunk/two-station, PRI, ADSL, SHDSL, E1 and T1/FT1 modules provide support for up to three network T1s and up to 10 analog interfaces. Wallmount or rackmount applications are supported.

SIP Gateway and Voice Functionality

The NetVanta 6355 includes a robust SIP gateway, providing interoperability with industry-leading softswitches, feature servers, and media gateways. For customers implementing a Hosted PBX service, the NetVanta 6355 supports IP phones, digital telephony equipment and analog phones, fax machines, or modems. In addition, the NetVanta 6355 works in conjunction with industry-leading feature servers to support many popular calling features including caller ID, call hold, forward, transfer, and call waiting. A dual IP and TDM backplane architecture supports both IP and analog devices to smooth network migration and eliminate common performance problems associated with converting TDM analog devices to IP. For example, fax and modem devices connect directly to the NetVanta 6355 and achieve full-rate performance across the PSTN. Voice Activity Detection (VAD) and silence suppression are also supported.

Remote Survivability

The NetVanta 6355 includes a SIP Back-to-Back User Agent (B2BUA) as a SIP-transparent proxy to facilitate remote survivability in the event of a service interruption on the WAN. If connection to the feature server is lost, calls may continue between IP and analog phones to an FXO POTS line to the PSTN.

Standard-based Routing Protocols

Complementing the versatile hardware, the AOS allows for the support of standards-based switching, VLAN tagging, static and default routes, demand routing, Network Address Translation (NAT), and DHCP client/server/relay. This enables fast, accurate network convergence using routing protocols such as BGP, OSPF, and RIP. In addition, the NetVanta 6355 terminates Frame Relay, Multilink Frame Relay, PPP, Multilink PPP, and HDLC WAN protocols.

Quality of Service (QoS)

QoS is also supported for delay-sensitive traffic. To prioritize mission-critical traffic and control network congestion, the NetVanta 6355 uses Low Latency Queuing, Weighted Fair Queuing (WFQ), Class-based WFQ, DiffServ marking, and Frame Relay Fragmentation.

Security

The NetVanta 6355 provides a powerful, high performance, stateful inspection firewall that can identify and protect against common Denial of Service (DoS) attacks.

Administration

The NetVanta 6355 offers a standard Command Line Interface (CLI) that mimics the widely adopted, industry *de facto* standard, virtually eliminating training costs associated with relearning a new operating system. The CLI also allows for configuration scripts to be used, saved, and downloaded as a quick and easy recovery mechanism. In addition, an intuitive Web-based Graphic User Interface (GUI) provides step-by-step configuration wizards, management capability, and the ability to upload firmware updates. The ability to discover devices, make mass configuration changes or firmware upgrades, backup and restore device configurations, push mass configuration changes, upgrade firmware to groups of devices, and generate inventory reports for asset management is available using ADTRAN's n-Command®.

IP Business Gateway

Physical Interfaces

Network Interface Modules (NIMs)

- T1/FT1
- SHDSL
- T1/FT1 with DSX-1
- E1
- Dual T1
- ADSL2/2+

Voice Interface Modules (VIMs)

- T1/PRI
- Four-port Analog Trunk (FXO)
- Four-port Analog Station (FXS)
- Two-port Analog Trunk/Two-port Analog Station (FXO/FXS)

24 Fast Ethernet PoE Ports

- 10/100 Base-T
- Auto-Duplex
- Auto-Rate
- Auto-MDI/MDI-X
- 802.3af and Pre-standard Power over Ethernet (PoE) Compliant

Gigabit Ethernet Port

- Two 10/100/1000Base-T Ports for Copper Connectivity
- Two SFP Slots for Optical Connectivity
- Auto-Duplex
- Auto-Rate
- Auto-MDI/MDI-X

Integrated Ports

- Two Analog Trunks (FXO)
- Two Analog Stations (FXS)
- CompactFlash® Slot
- Analog Paging Output
- 10/100Base-T Ethernet
- DB-9 Craft Port
- Door Relay

Status LEDs

- Slot 1, 2
- Status
- Ethernet Port Status: Link, Activity, PoE Status

Analog Phone Features

- Analog Trunks
 - Loop Start/Ground Start
 - FSK Capture of Caller ID Name/Number
 - Two Integral, 10 Maximum
- Analog Stations
 - Loop Start DTMF
 - 1500 Feet over 26 AWG
 - Two Integral, 10 Maximum
- Call Detail Records (SMDR)
- Caller ID Name/Number Override (Internal and External)
- Classes of Service
- Codec Support Includes G.711, G.729a, and G.722 Wide Band Codec Locally between IP Phones
- T.38 Fax Support

- Configurable Dial Plan
- Door Relay
- Door Phone
- Global Call Coverage Lists
- IP Stations (150 Maximum; SIP Hardphone or SoftPhone)
- Least-Cost Call Routing
- Outgoing Number Substitution
- Ring Groups (Ring All, Circular Hunt Group, UCD, Executive)
- System Speed Dial
- T1 trunks/Analog Trunks/SIP Trunks
- Trunk Groups
- Variable Length Extension Numbers (3-digit, 4-digit)

Calling Feature Support

(Varies with feature server/gateway)

- Caller ID
 - Name and Number
 - Name
 - Number
 - Call Waiting ID
- Voice Mail
 - Stutter dialtone
 - Visual Message Waiting Indicator (VMWI)
- Call Hold
- Call Forward
 - Busy Line
 - No Answer
- Call Transfer
 - Blind, Attended
- Call Waiting
- Distinctive Ring
- Do Not Disturb
- Three-way Calling
- Call Return
- Speed Dial
- Music On-hold from the Feature Server
- Local Paging

Packet-based Voice Resources

- CODECs
 - G.711-64k PCM
 - G.729a-8k CS-ACELP
- G.168 Echo Cancellation
- 64ms Echo-tail Length
- Supports up to 24 Simultaneous Channels

Media Stream

- RTP/UDP/IP (RFC 3550)
- RTP Payload for DTMF Digits (RFC 2833)
- Supports Port-to-port Hairpin Call
- SDP (RFC 2327)



Remote Survivability

- B2BUA
- SIP Registrar for IP Phones
- SIP Transparent Proxy
- Integrated 2 FXO Ports for Survivability to PSTN

Switching Performance

- Non-blocking
- 8,000 MAC Addresses
- 16-MB Memory Shared by all Ports
- 8.8 Gbps Maximum Forwarding Bandwidth

Power over Ethernet

- 802.3af (15.4 watts/port) and Pre-standard
- 370 Total Watts Available for PoE
- Power Provided over Ethernet Data Leads

Wi-Fi® Controller

- Controls up to 8 NetVanta Wireless Access Points (WAPs)

Spanning Tree Support

- 802.1D Spanning Tree
- 802.1w Rapid Spanning Tree

VLAN Support

- Port-based VLANs
- 802.1Q Tagged Trunked VLANs
- Support for up to 255 Active VLANs
- Inter-VLAN Routing
- GARP VLAN Registration Protocol (GVRP)

Link Aggregation

- 802.3ad Link Aggregation
- Support for Six Trunk Groups
- Trunk Groups Consist of up to Eight Access Ports

Processor and Memory

- **RAM:** 128 Mb RAM
- **Flash:** 32 Mb Flash
- CompactFlash® Slot

Protocols

- | | |
|-------------------|-------------------------|
| ■ eBGP/iBGP | ■ PPP |
| ■ OSPF | ■ Multilink PPP |
| ■ RIP (v1 and v2) | ■ PPPoE |
| ■ IGMP v2 | ■ GRE |
| ■ RFC 1483 | ■ Frame Relay |
| ■ HDLC | ■ Multilink Frame Relay |
| ■ PAP and CHAP | ■ Demand Routing |
| ■ Multihoming | ■ Policy-based Routing |
| ■ Multi-VRF CE | |

Voice Quality Monitoring (VQM)

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

Quality of Service

- Low Latency Queuing
- Weighted Fair Queuing
- Class-based Weighted Fair Queuing
- DiffServ Aware/Marking
- Frame Relay Fragmentation (FRF.12)
- Traffic Monitoring (NetFlow 9)

Class of Service

- Enforces 802.1p Priorities DiffServ
- Four Output Queues per Egress Port
- Weighted Round Robin
- Strict Priority Queuing

Security

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

Virtual Private Network (VPN)

- **Encryption:** DES, 3DES, and AES
- **Number of IPSEC Tunnels:** Ten Tunnels

Network Address Translation

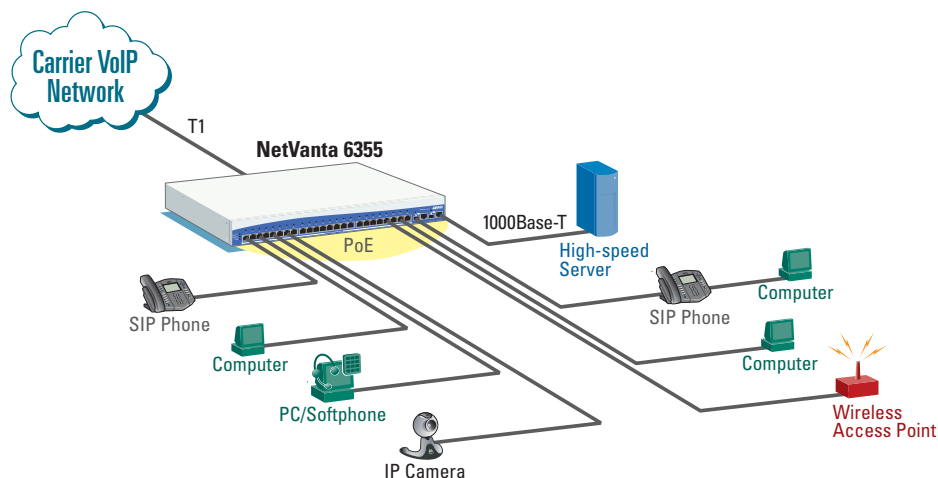
- Basic NAT (1:1), NAPT (Many:1)
- NAT Compatible SIP ALG

Secure Management

- Multilevel Access Control
- RADIUS AAA
- TACACS+
- SSH CLI and SSL GUI

Network Access Control

- Port Authentication (802.1x)
- MAC-based Port Security



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NetVanta® 6355

IP Business Gateway

DHCP

- Client, Server, and Relay

Administration

- Familiar Command Line Interface (CLI)
- Web-based Graphical User Interface (GUI)
- n-Command® support
- SNMP v2 and v3
- SYSLOG Logging
- Email Alerts (SMTP)
- Policy Statistics
- TCL Scripting

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:** 1U, 19" Rackmountable Metal Enclosure
- **Dimensions:** 1.75" H, 17.25" W, 12.80" D
- **Weight:** 11 lbs.
- **Power:** 100–250 VAC, 50/60 Hz, 450 Watts

Agency Approvals

- FCC Part 15 Class A
- FCC Part 68
- UL 1950/CSA
- RoHS ("E" Version)

Warranty

- Five-year (North America)

Ordering Information

Equipment	Part #
NetVanta 6355	1200740E1
T1/PRI VIM	1200695L1
4-Port Analog Station (FXS)	1200690E1
4-Port Analog Trunk (FXO)	1200691E1
Dual Analog Trunk/Station (two each)	1200692E1



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