

# NetPerformer® 9360

Multi-Service Access Gateway for Branch Offices



The NetPerformer 9360 is the optimal voice and data convergence solution for integrating branch office traffic over a variety of popular corporate WAN infrastructures.



Provides a migration path to standards-based VoIP
16 analog or 60 digital telephony channels
Integrates disparate phone systems
Reduces network infrastructure
Supports digital voice
Simplifies network management
Integrates networks seamlessly

## Leverage the Power of Convergence

The NetPerformer 9360, a highly versatile voice and data integrated access device, is designed specifically for branch offices or hub sites, and easily supports up to 60 telephony channels. By efficiently packetizing and compressing telephony traffic and then delivering it with data over packet/cell-based connection-oriented or connectionless networks, the 9360 allows companies to seamlessly integrate telephony and data applications while substantially reducing the cost of monthly telephony services.

The NetPerformer premium suite of products has been optimized specifically for the evolving needs of complex, distributed enterprise networks. These networks have varying Wide Area Networking (WAN) connectivity requirements, and often have multiple sites with differing needs of functionality, density, performance and connectivity. The NetPerformer 9360 meets the demands of these networks and is the most cost-effective multi-service integrated access device in the NetPerformer family.

## Scalable, Versatile, Integrated

The NetPerformer 9360 efficiently packetizes and compresses voice, fax, modem and data traffic, and transports it along with LAN, SNA or serial data over various WAN infrastructures such as IP, Frame Relay, Leased Lines, channelized services, ATM and Satellite (Point-to-Point/Multipoint).

All voice and data entering the unit are prioritized by protocol then combined for transport over Frame Relay, ATM or IP connection via private or public networks. This functionality is provided by PowerCell NetPerformer's award-winning, cell-based QoS prioritization technology. Ethernet LAN support is included, and integrated full/fractional T1/E1, ISDN PRI/BRI and ATM WAN connections are available as options.

## Scalability

The 9360, in conjunction with the rest of the NetPerformer product line, allows each individual site to be configured with the appropriate combination of services, performance and scalability, avoiding unnecessary costs.

## Easily Upgrades for Satellite Access

Every NetPerformer platform can provide satellite-based converged communications. With Verso's unique SkyPerformer® software option enabled, greater efficiency can be achieved with point to multipoint topologies. Ideal for small-to medium-size networks requiring voice, multi-protocol data and LAN support, SkyPerformer saves you money by reducing the need for multiple space segments and additional hardware in the initial installation. When your network requires both landline and satellite access, SkyPerformer enables a hybrid satellite/terrestrial topology over a single platform, further reducing costs and minimizing complexity.

## Support for Modem and Fax

The NetPerformer 9360 can support all the telephony needs of today's distributed enterprise networks, saving costs by integrating all types of traffic onto a single network.

## Digital Voice Support

Key signaling standards are supported, and the NetPerformer 9360 connects to most industry-standard PBX units.

## SNMP-Compliant MIBs and Graphical Management

Through the integration of ActView 3000 with HP OpenView® for Windows or Sun Solaris, the 9360 can be managed using today's most popular and universal network management paradigms.

## Supports Industry Standards

NetPerformer supports standards-based VoIP via the SIP protocol and a wide range of voice codecs, providing interoperability for multi-vendor and mixed private/public networks. Additionally, NetPerformer enables enterprises to build a bandwidth-efficient private enterprise network and allows interconnection with voice service providers for off-net calls. Seamless interconnectivity is not limited to voice, however. The 9360 also offers flexible data protocol support and interfaces with a wide range of network services and user requirements.

## System Details

- 2 universal serial ports (user or link), RS-232C, X.21/V.11, RS-530, RS-449/RS-442, V.35
- 1 10/100BaseT Ethernet,
- 4 slots for interface modules
- Power: auto-sensing 100-240 VAC, 50/60 Hz
- Performance Level: 4,000 cells per second

## Interface Options

- IM-T1: T1 interface module for PBX or WAN connection with integrated CSU (RJ48 connector)
- IM-E1-75: E1 interface module for PBX or WAN connection (75 ohm), (BNC connectors)
- IM-E1-120: E1 interface module for PBX or WAN connection (120 ohm), (RJ48 connector)
- IM-EM: 4-port E&M module (2- or 4-wire: types I, II, or V), (RJ48 connectors)
- IM-FXS: 2-port FXS module (loop start, RJ11 connector)
- IM-FXO: 2-port FXO module (loop start, RJ11 connector)
- IM-BRI: 2-port BRI S/T for PBX or WAN connection (RJ48 connectors)
- IM-Dual-Serial: 2-port universal serial WAN interface (user or link), DTE or DCE, HD26F connector, interface compatible with RS-232/V.24, V.35, X.21/V.11, RS-449-V.36, RS-530, internal/external clocking
- SIMM-1: 1-DSP voice processing module, supporting 3-5 voice channels, depending on algorithm
- SIMM-3: 3-DSP voice processing module, supporting 9-15 voice channels, depending on algorithm
- SIMM-6: 6-DSP voice processing module, supporting 18-30 voice channels, depending on algorithm
- Up to 2 SIMMs per unit

## Network Connections

- Network topology: public and private Frame Relay and ATM, mesh, hierarchical, star, point-to-point, satellite point-to-point/multipoint (SkyPerformer option)
- Automatic node discovery and rerouting with least cost metric routing
- Automatic load balancing, bandwidth on demand (over leased line), dial back-up, time-of-day connect
- QoS: 8 classes of service, 16 priority weights, association to 802.1p and DiffServ TOS bits

## Link Port Protocols

- Leased Lines:
  - > Serial synchronous full duplex and T1/E1 channelized (full or fractional services with up to 32 logical ports)
  - > Frame Relay, HDLC and PPP, PowerCell
  - > Drop and insert for T1/E1 voice and data
- IP WAN:
  - > Ethernet, serial and T1/E1 PPP, Frame Relay RFC-1490, ATM RFC-1483, RFC-2364 and PowerCell over IP
- Frame Relay (Public and Private):
  - > UNI User and Network, UNI, RFC1490, PowerCell
  - > Local management interface: LMI, ANSI T1.617/annex D, ITU-T Q.933/annex A, CLLM or disabled
  - > PVCs: 300 per node, automatic DLCI discovery
  - > SVCs: telephony applications, one SVC per voice call
- ATM (optional license required):
  - > T1/E1 full or fractional, up to 31 PVCs, PowerCell

- over AAL5, RFC1483 Multiprotocol Encapsulation over AAL5, RFC2364 PPP over AAL5, FRF.8 Service Interworking
- ISDN T1//E1 PRI and BRI:
  - > Switched or leased line mode, Frame Relay, Power Cell, PPP, HDLC
- Switched Lines and Dial back-up:
  - > PowerCell over serial ports or ISDN PRI/BRI
  - > Dialing protocols: V.25bis, X.21, AT and control leads
- Speed:
  - > Link port maximum speed without compression: 2.048Mbps
  - > Link port maximum speed with software data compression: 512Kbps

## Telephony Features

- Maximum telephony channels: up to 8 FXS or FXO, or 16 E&M, or 60 (30 with SIP) digital channels per chassis
- Voice compression algorithms:
  - > ACELP-CN 8K/6K with fallback, 4 ch. per DSP
  - > G.711 PCM 64K, 5 ch. per DSP
  - > G.723.1 Low 5.3K/High 6.3K, 4 ch. per DSP
  - > G.726 ADPCM 16K/24K/32K/40K, 4 ch. per DSP
  - > G.729 (3 ch. per DSP) and G.729a 8K (5 ch. per DSP)
- FAX Relay: Group III FAX 4.8, 7.2, 9.6, 12.0, 14.4 Kbps, over PowerCell or T.38 for SIP. Group IV fax and other non-voice bearer ISDN channel at 64K over PowerCell (5 ch. per DSP)
- Modem Relay: V.32bis demodulation up to 14.4Kbps, modem passthrough (G.711) PowerCell mode for other modem types, STU-III secure phones (3 ch. per DSP)
- Network signaling:
  - > Any-to-any switching, using PowerCell over PVC or Frame Relay SVC, or SIP (Session Initiated Protocol) VoIP, including end-to-end QSIG/ISDN support for supplementary services
- Analog telephony channels:
  - > FXS: loop and ground start, forward disconnect
  - > FXO: loop start, forward disconnect
  - > E&M: immediate and wink start, custom
- Digital telephony channels:
  - > ISDN and QSIG T1/E1 PRI and BRI signaling: EuroISDN/ETSI, National and Japan
  - > T1 signaling: robbed bit signaling, CCS transparent, SS7 transport
  - > E1 signaling: CAS, CCS transparent, SS7 transport
  - > Digital CAS Signaling types: Immediate, Wink, FXO, FXS, FXO ground, FXS ground, E1/R2, PLAR, custom
- Mu-law or A-law coding
- Pulse and tone dialing
- Voice traffic routing with alternates destinations and digits manipulation using local mapping tables, locally switched TDM calls (hairpin)
- VoIP peer-to-peer calling with ingress and egress dialing plan, centralized dialing plan using SIP Redirect, and registration to optional SIP proxy
- Radius authentication and billing server interface

## LAN Support

- Two IP address per LAN port
- Ethernet interfaces: Ethernet II and IEEE 802.2, 802.3, SNAP
- Standards: IP RIP V1/V2 or Static, OSPF, NAT, VoIP SIP NAT ALG, IP Multicast IGMP V1/V2 PIM-DM, BootP/DHCP relay, DHCP client, IPX RIP and SAP, LLC2,802.1p/q prioritization and VLAN,802.1D Spanning Tree Protocol (STP), MAC Layer
- Filter criteria: based on protocol, address (source, destination or SAP), TOS bit/diffServ or custom filtering

## Data Features

- Protocols:
  - > SNA: SDLC, LLC2 or Frame Relay RFC-1490 (BAN, BNN), maximum of 64 PUs per unit, (types 1, 2.0, 2.1, 4/5), Local SDLC and LLC2 spoofing, SDLC/LLC2 conversion
  - > Legacy Sync: PPP, BDLC, HDLC, SDLC, X.25, X.25 over Frame Relay (annex F/G), COP, BSC, VIP, ALC, IBM/RJE, Uniscope, Poll/Select, Siemens Nixdorf, JCA, Zengin
  - > Frame Relay: RFC-1490, UNI-DTE, UNI-DCE
  - > Asynchronous: ENQ/ACK, XON/XOFF, transparent, CTS/DTR
- Maximum speed is protocol dependent, 2 Mbps for Frame Relay, HDLC/SDLC, PPP and X.25

## Physical Characteristics

- Dimensions: 3.5" H x 17.5" W x 12.3" D  
9.2 cm H x 44.5 cm W x 31.1 cm D
- Shipping wt.: 17 lbs. (7.7 kg)

## Software Options

- SkyPerformer<sup>®</sup>
- SIP
- ATM

## Network Management

- SNMP management via ActView 3000 Network Management System for HP OpenView for Windows or Sun Solaris
- Remote Telnet access to command port
- FTP upload and download of software and configuration
- Traps, traces and extended statistic
- Username/password security control, Radius Authentication for console and Telnet access administrative filtering

## Environmental Tolerances

Operating temperature: 0° to 45° Celsius  
Relative humidity: 10% to 90%, non-condensing

## Regulatory - Compliance and Agency Approval

This product complies with or have obtained Regulatory Agency approval at least against the following standards:

- EMC - Emission
  - FCC CFR 47 Part 15 EN 55022 (1994)+ Amendment 1 AS/NZS 3548 (1995)
- EMC - Immunity
  - EN 55024 (1998)
- Safety
  - IEC 950 (1991) + Amendments 1 to 4 EN 60950 (1992) + Amendments 1 to 4 UL 1950 3rd Edition CSA C22.2 N°950 AS/NZS 3260 (1993) ACA TS001 (1997)
- Telecom - Analog
  - FCC Part 68 IC CS-03 Part 1
- Telecom - Digital
  - FCC Part 68 IC CS-03 Part 2 and Part 6 TBR 001 TBR 002 TBR 003 TBR 004

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