NetPerformer® SDM-9600

Scalable, multi-service integrated access router for central offices

A high performance convergence platform to be used on GSM, DCME, VoIP or any voice and data network. The SDM-9600 enables network operators to seamlessly integrate telephony and data applications while substantially reducing monthly recurring costs.

High capacity, high performance, high versatility

The SDM-9600 is the flagship component of the NetPerformer products, all of which have been designed to meet the needs of operators with complex distributed networks. The NetPerformer SDM-9600 offers the highest density, capacity, and performance available today and includes an integrated access router for central offices. Designed for modular growth and standards evolution, the SDM-9600 provides complete fault-tolerance and scalability as well as greater processing speeds and bandwidth capacity.

Scalability

A modular, high-capacity format makes the SDM-9600 an ideal solution for the needs of the more demanding sites in a converged network. The SDM-9600, in conjunction with other NetPerformer products enables each individual site to be configured with the appropriate combination of services, performance, and scalability, avoiding unnecessary costs. The SDM-9600 chassis can be populated with multiple blades supporting digital and LAN ports for aggregation and redistribution of voice and data traffic. Using an open architecture platform, it can support up to 80 T1/E1 data/voice digital spans, 2400 channels of digital telephony, or 600 TRXs of GSM A-bis/ter traffic in a single 5U chassis.

Carrier-grade reliability

The SDM-9600 is designed to provide the level of redundancy and fault-tolerant operation that providers must have to ensure uninterrupted service. In addition to dual power feed at the chassis level, each blade support 1:N redundant voice processors and 1:1 overall blade redundancy, delivering high availability for those mission critical applications and revenue generating services. The SDM-9600 also supports alternate routing and can automatically switch to another WAN if needed.

Digital voice support

The SDM-9600 channel density is the ideal platform for Digital Circuit Multiplication Equipment (DCME) applications; either for backhauling traditional telephony or GSM A/E trunks. PowerCell voice support provides greater bandwidth savings than standard based VoIP, over any type of WAN infrastructure. The SDM-9600 also supports standards-based VoIP via the SIP protocol and a wide range of voice codecs, providing interoperability for multivendor as well as mixed private/public networks. The NetPerformer SDM-9600 supports key signaling methodologies and connects to PSTN and legacy PBX units, providing a smooth migration path for legacy telephony equipment to VoIP.

GSM backhauling

The SDM-9600 also provides bandwidth optimization for GSM A-bis and A-ter. The high density of the SDM-9600 makes it ideal for larger BSC/MSC sites serving large number of remote BTS locations and it occupies less rack space.

Leverage the power of convergence

The SDM-9600 efficiently packetizes and compresses voice, fax, modem and LAN traffic, and transports it over packet/cell-based connection-oriented or connection-less networks WAN infrastructures. All traffic entering the unit is prioritized by protocol, then combined for transport over private or public networks. Prioritization functionality is provided by PowerCell®, NetPerformer's award winning, cell-based QoS prioritization technology.

WAN flexibility

The SDM-9600 operates on a variety of WAN infrastructures: serial or digital leased lines, satellite, or packet-based networks such as IP, Frame Relay and ATM. This feature provides network operators the flexibility to choose between the most economical or most readily available network facility and also enables the migration to different network infrastructures without any additional cost.

Enhanced satellite access capabilities

The NetPerformer SDM-9600 platform can also provide satellite-based converged communications. Verso has partnerships with the major satellite vendors providing support for SCPC, TDMA, IP broadband satellite technologies, including Verso's SkyPerformer satellite optimization (Point-to-Point/Multipoint). Carriers can operate a hybrid satellite/terrestrial topology over a single platform, further reducing costs and minimizing complexity.

Network management and reporting

The ACTView® 3000 application is an advanced SNMP-based GUI tool that uses the industry-standard HP OpenView® NMS platform. The application enables the user to manage virtually any other platform from a single network management station, avoiding redundancies and the costs associated with multiple NMS platforms.

It's easy to learn more

To learn more about the NetPerformer SDM-9600 and how it can benefit your organization, call, email, or visit us online today.

Chassis

- 19" rackmount modular chassis
  - 5 slots for blades
  - Hot swappable fan tray with independent air filter
  - Dual -48 VDC feed

SDM-9620 Details

- Main Processor blade occupying one front slot
  - Hot swappable
  - One universal serial port (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
  - Two 10/100BaseT Ethernet (RJ45 connectors)
  - Five internal DSP connectors per blade
  - Up to 480 voice channels, 120 TRXs per SDM-9620 blade
  - One console port RJ45 female connector, autosensing DTE/DCE, maximum speed 115.2 Kbps
- SDM-9620 Digital Data/Voice interface cards:
  - Occupies rear slot, maximum one per SDM-9620 processor blade
  - Sixteen T1/E1 ports (integrated CSU/DSU, software configurable T1 or E1 75 or 120 ohms, B8ZS/B7ZS/AMI, D4/ESF, HDB3, NT/TE jumpers, RJ48 connectors,adapter cable required for BNC E1-75)
  - Drop and insert between any of the digital port on the same interface card

DSP Module Details

- High Density DSP modules supporting 60 to 120 voice channels per connector
  - DSP module also support GSM A-bis/ter up to 60 TRXs, up to 120 channels for GSM A or E interface per module.
- N:1 redundancy

Network Connections

- Network Topology: 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 248 per SDM-9620 module)
  - Frame Relay, HDLC and PPP, PowerCell
  - Drop and insert for T1/E1 voice and data
- IP WAN:
  - Ethernet, PPPoE, serial and T1/E1 PPP, Frame Relay RFC-1490, ATM RFC-1483, RFC-2364 & PowerCell over IP
- Frame Relay (public and private):
  - UNI User and Network, UNI, RFC1490, PowerCell
  - Local management interface: LMI, ANSIT1.617/ annex D, ITU-T Q.933/annex A, CLLM or disabled
  - PVCs: 300 per blade, automatic DLCI discovery
  - SVCs: telephony applications, one SVC per voice call
- ATM (optional license required):
  - Four T1/E1 ports full or fractional, PowerCell over AAL5 UBR using up to 32 PVCs, RFC1483 Multiprotocol Encapsulation over AAL5, RFC2364 PPP over AAL5, FRF.8 Service Interworking, AAL0 transparent over PowerCell/IP
- ISDN T1/E1 PRI:
  - Switched or leased line mode, Frame Relay, Power Cell, PPP, HDLC
- Switched Lines and Dial back-up:
  - PowerCell over serial or T1/E1 PPP,
  - Dialing protocols: V.25bis, X.21, AT and control leads, D channel on ISDN PRI
- Speed:
  - 6 Mbps using serial port on SDM-9620, 8 Mbps when using external clock

Channel Density

- Maximum telephony channels: up to 480 CAS/PRI digital or GSM A/E channels per SDM-9620 blade, 2400 channels per chassis
- Maximum GSM A-bis/ter channels: up to 120 TRXs per SDM-9620 blade, 600 TRXs per chassis
- Maximum data channels: 1 serial data port per SDM-9620 blade, 16 T1/E1 data interfaces (up to 248 logical ports) per SDM-9620 blade

Telephony Features

- Voice compression algorithms (5 channels per DSP):
  - ACELP-CN (8K/6K with fallback)
  - G.711 (PCM 64K)
  - G.723.1 (Low 5.3K/High 6.3K)
  - G.726 (ADPCM 16K/24K/32K/40K)
  - G.729 and G.729a (8K)
  - MELP (2.4K)
- FAX Relay: Group III FAX 4.8, 7.2, 9.6,12.0, 14.4 Kbps, over PowerCell or T.38 for SIP. Super G3 configurable to passthrough or fallback to G3. Group IV fax and other non-voice bearer ISDN channel at 64K
- Modem Relay: V.32bis demodulation up to 14.4Kbps, STU-III secure phones over PowerCell, modem passthrough (G.711) for other modem types
- 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
- Digital telephony channels:
  - ISDN and QSIG T1/E1 PRI signaling: EuroISDN/ETSI, National and Japan
  - T1 signaling: robbed bit signaling, CCS transparent, SS7 transport with idle filtering and spoofing, MTP2 local acknowledgement and dynamic bandwidth allocation using ISUP decoding
  - E1 signaling: CAS, CCS transparent, SS7 transport with idle filtering and spoofing, MTP2 local acknowledgement and dynamic bandwidth allocation using ISUP decoding
  - Digital CAS Signaling types: Immediate, Wink, FXO, FXS, FXO ground, FXS ground,E1/R2 (compelled, semi-compelled, DTMF),PLAR, custom
  - Mu-law or A-law coding
- Pulse, DTMF, and MF 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 independent fully routed 10/100BaseT ports per blade, two IP network address per port
- Ethernet interfaces: Ethernet II and IEEE 802.2, 802.3, SNAP

Standards: IP RIP V1/V2 or Static, OSPF, NAT, 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:
  - Sync: PPP, BDLC, HDLC, SDLC, X.25, X.25 over Frame Relay annex F/G, serial or T1/E1 channelized
  - Frame Relay: RFC-1490, UNI-DTE, UNI-DCE, serial or T1/E1 channelized

Software Options

SkyPerformer®

TCP/IP Acceleration

GSM A.bis/ter

Network Management

SNMP management via ACTview 3000 Network Management System for HP OpenView

Menu driven async console port (VT-100)

- Console physical port can also be used to control external equipment via remote Telnet

Remote Telnet access to command port

FTP upload and download of software and configuration

Text based configuration files and journal log

Traps, traces and extended statistics

Username/password security control, Radius for Billing and Authentication for console and Telnet access administrative filtering

Physical Characteristics

Dimensions: 8.72" H (5U) x 19 " W x 16.3 " D

22.1 cm H x 48.2 cm W x 41.4 cm D Typical

weight: 33 lbs. (15 kg)

Environmental Tolerances

Operating Temperature: 0° to 45° Celsius, 32° to 113° Fahrenheit

Storage Temperature:-20є to 65є Celsius, -4° to 149° Fahrenheit

Relative Humidity: 10% to 90%, non - condensing

Regulatory - Compliance and Agency Approval

This product complies with or has obtained Regulatory

Agency approval at least against the following standards:

- EMC - Emission Class B: FCC Part 15, EN 55022:1998 + A1 + A2, AS/NZS CISPR22
- EMC - Immunity: EN 55024:1998 + A1 + A2
- Safety: IEC 60950-1, EN 60950-1, UL 60950-1, CSA C22-2 N°60950-1, AS/NZS 60950
- Telecom Digital: FCC Part 68 + TIA-968-A, IC CS-03 Issue 9 - Part 2 and Part 6, AS/ACIF S016, AS/ACIF S038, TBR4, TBR 12, TBR 13

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