PortMaster 3

Remote Access Concentrator

Flexible, Efficient Remote Access Connectivity

The PortMaster® 3 combines Lucent True Digital™ modems, communications server, Virtual Private Network (VPN) tunnel terminator, and router functionality into a compact, 3.5 inch (8.9 cm) rack-mountable unit. The product features up to two T1/E1 (CT1/CE1) interfaces to support analog, ISDN Basic Rate Interface (BRI), ISDN Primary Rate Interface (PRI), Frame Relay, and Leased Line services. It has six rear-panel expansion slots supporting up to ten modems per slot, for a maximum configuration of 60 modems per chassis. This compact chassis maximizes your port resources on a scalable reliable, secure, easy to manage platform.

Maximizing your Resources

PortMaster 3's intelligent port switching architecture recognizes whether an incoming call is ISDN, ISDN data-over-voice or an analog modem call. It automatically switches between services over the same PRI or channelized

Highlights

- Intelligent port switching-- Any Service, Any Port, Any Time
- Virtual Chassis design provides linear scalability
- Advanced thermal design delivers exceptional reliability
- L2TP Network Server (LNS) functionality
- Support for secure VPNs

T1/E1 line. This dynamic port allocation eliminates the expense of a separate chassis for each service and the associated waste of idle single-service ports. All ports are pooled and available for either ISDN or analog service at any time, maximizing utility and revenue from every port.

The PortMaster 3 also supports multiple Frame Relay and leased line connections for flexible Wide

Area Network (WAN) connectivity. And, with the optional T1 WAN Router Card, the PortMaster 3 eliminates the need for an external router, making it an ideal "POP-in-a-box" solution.

As with all Lucent remote access servers, the PortMaster 3 runs Lucent's industry leading ComOS® operating system. ComOS supports all widely deployed routing protocols, including Routing Information Protocol (RIP), Open Shortest Path First (OSPF) with Not So Stubby Areas (NSSA), and Border

Gateway Protocol version 4 (BGP4), allowing you to support complex networks efficiently. ComOS also supports broad client modem interoperability, including V.90 modems and backward compatibility with K56flex modems.
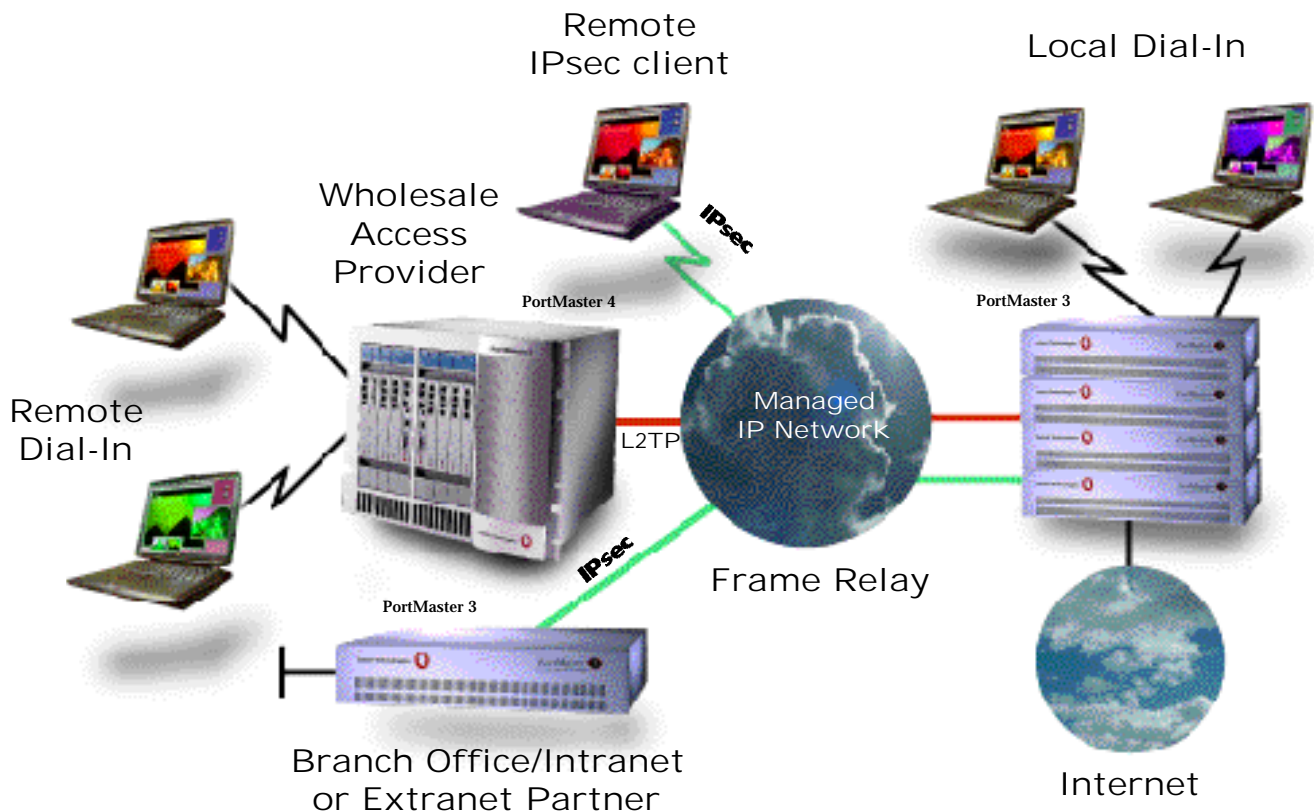
Scalability/Virtual Chassis

PortMaster 3 delivers unparalleled scalability. Independent testing has verified linear throughput whether a single user has dialed in or the platform is supporting full capacity. Further, units can be stacked as a virtual chassis to pro-

vide support for hundreds of multi-service dial-in ports, all delivering the same, dependable high performance.

Multi-chassis Point to Point Protocol (MCPPP) enables the PortMaster 3 to combine a single user's ISDN connection at 128Kbps, even when it spans multiple PortMaster 3 units. The PortMaster 3 automatically detects when MCPPP is required and redirects user packets via Ethernet to the unit that accepted the first call.

Multiple PortMaster 3s can be

Remote IPsec client

Local Dial-In

Wholesale Access Provider

IPsec

PortMaster 4

PortMaster 3

Remote Dial-In

Managed IP Network

L2TP

Frame Relay

IPsec

PortMaster 3

**Branch Office/Intranet or Extranet Partner**

Internet

Optimized POP Diagram

configured with one reported IP address throughout an entire hunt group to support routed connections from remote Local Area Networks (LANs).

Management

Lucent Technologies PMVision™ configuration and management software allows you to monitor, troubleshoot, and maintain multiple PortMasters from a single workstation, simplifying administration and reducing maintenance costs.
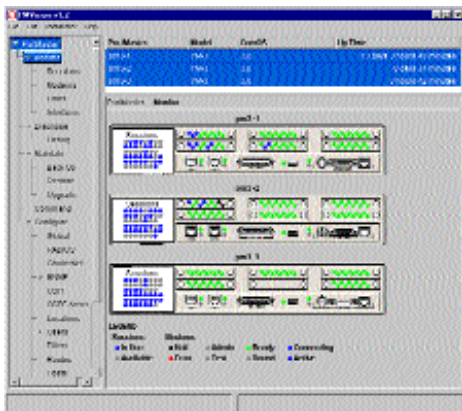
Because PMVision is Java™-based, it runs on a variety of workstation platforms. And, through its intuitive, graphical user interface, multiple wizards, smart agents, pull-down menus and on-screen forms, remote access network management has never been easier.

Security

PortMaster 3 supports the Lucent-invented Remote Authentication Dial-In User Service (RADIUS) protocol to provide ultra-scalable authentication, authorization and accounting of remote users. Built-in firewall packet filtering gives you further control of traffic entering and exiting your network.

Virtual Private Networking (VPN)

Lucent Technologies PortMaster 3 supports two Internet Engineering Task Force (IETF) virtual private networking standards, Layer 2 Tunneling Protocol (L2TP) and IP Security (IPSec). L2TP is a tunneling protocol used to encapsulate traditional protocols, such as IP and IPX, for outsourcing applications. IPSec is recognized as the industry standard for strong data security, and is application or operating system independent.

Support for L2TP Network Server (LNS) functionality is enabled in software. The PortMaster 3 can terminate up to 64 simultaneous sessions per chassis, though additional sessions can be supported with software upgrades. L2TP

enables remote access outsourcing applications, allowing users to eliminate deployment and management of modem pools, while maintaining centralized access control.

Because software-only IPSec solutions do not scale well or meet the performance requirements of typical network implementations, Lucent offers an optional IPSec encryption daughter card to deliver near wire-speed throughput. The card provides support for 56-bit Data Encryption Standard (DES) and/or 168-bit Triple DES encryption and MD-5 authentication.

Reliability

PortMaster products have earned a reputation for bulletproof reliability. Digital modems feature automatic self-configuration and real-time diagnostics, with "hot" spares available as an added advantage. PortMaster 3 features Internet-proven ComOS, recognized as the most stable remote access operating system in the industry. Thousands of organizations worldwide trust PortMaster equipment for mission-critical connectivity.

General Specifications

LAN Protocols	TCP/IP, IPX
Routing Protocols	RIP (v1 and v2), OSPF(with NSSA), BGP4
WAN Protocols	PPP, SLIP CSLIP, Frame Relay
Bandwidth Optimization	Multilink PPP, Multichassis PPP, multi-line load balancing, TCP/IP header compression, BACP, optional Stac-based data compression (Stac LZS/MS-Stac), Non-Facility Associated Signaling (NFAS)
True Digital Modems	8 or 10 modems per card, six rear panel chassis slots
Modem Protocols	V.90, K56flex, V.34, (33.6Kps and 28.8Kpbs), V.32bis (14.4Kbps), V.32 (9600 and 4800bps), V.22bis (2400bps), V.42 and MNP 2-4 (error control), V.42bis and MNP 5 (data compression)
Dial-Up Connections	64/56Kbps synchronous, 64/56Kbps asynchronous with V.110/V.120 rate adaption, and analog modem (with AT command emulation)
T1, E1, or PRI Interfaces	Single or dual (T1, E1 or PRI), RJ48 four-wire
ISDN Switch Compatibility	ATT5ESS, ATT4ESS, N12, DMS100, NET5 (ETSI), ITR6, NTT, KDD, VN4, TS014
Supported Encoding	AMI and B8ZS (T1), CRC4, FAS (E1)
Supported Framing	ESF and D4 (T1), CRC4, FAS (E1)
Channelized T1	Robbed-bit signaling; loop start, immediate start, and wink start protocols; Leased Line and Frame Relay*
Channelized E1	MFR2 Q.441, Q.442, line signaling Q.422, R2 signaling, Leased Line and Frame Relay*
Virtual Private Networking	IPSec, RFC 2104, 2401, 2402, 2403, 2404, 2405, 2406, 2451), L2TP (RFC Internet draft 13), IPI (RFC 2003), Proxy Tunneling
Administration and Management	PMVision (GUI) for: UNIX or Windows 95/NT, Local console, Telnet, or dial-up command line interface SNMP MIB II and Enterprise MIB Support, Real-time modem and CSU management, Local or network booting, BOOTP, Ping and traceroute utilities, Flash upgradeable
Network Security	RADIUS ChoiceNet® client-server based filtering technology Local user/password database Dial-up support for PAP or CHAP, Calling and Called line ID, Callback authentication Firewall filtering Inbound/Outbound (IP and IPX packet filtering and logging) Network Address Translation (NAT) Network Address Port Translation (NAPT)
Ethernet Connection	One (selectable) 10BaseT (twisted pair), 10Base2 (thin Ethernet), 10Base5 (thick Ethernet AUI)
Asynchronous Port	One 115.2Kbps (can be used as console or as routing port)
Integrated CSU/DSU	Included
Memory	4 MB (standard)
Flash	1 MB
Rack Mount Kit	Included
Hardware Options	T1 WAN card (occupies one rear panel chassis slot) IPSec Hardware Encryption daughtercard Stac LZS/MS Stac Compression daughtercard PIAFS Module
Dimensions	Length: 11.2 inches (29.2 cm), Width: 16.8 inches (42.7 cm), Height 3.5 inches (8.9 cm)
Power	100-240 VAC (autosensing), -48VDC (optional)
Power Dissipation	20 watts and .8 watts per modem
Environmental Temperature	41F to 113F, 5C to 45C
Humidity (noncondensing)	20% to 80%
Agency Approvals	UL (UL1950), FCC (FCC part 15 and FCC part 68, CSA (IC CS)2), CB (IEC 950), CE (NET5/CTR4, CTR12, CTR13, EN 55022, CISPR22, EN50082-1, EN 60950), BAKOM, BAPT (1TR6), SARTA, TAS (TS ISDNS), JATE, ACA (TS014, TS016, TS001, AS 3260, AS/NZS 3548)

*When the PortMaster 3 is configured for both dial-up and Leased Line service using different switch sources, it is recommended that the optional T1 WAN card be installed.

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