



Highlights

- >> NAT and LSNAT Translation Services Including: Static, Dynamic and NAPT
- >> Near Wire-Speed Packet Processing
- >> Completely Manageable Through Switch Carrier's CLI and SNMP Agents
- >> Support for Sixteen IP Network Interfaces per Port
 - Settable via DHCP or manually, with translation capability between any pair of network interfaces
- >> Can Maintain 8k Bi-Directional Sessions
- >> RFC 1812 Compliant Route Processing
- >> PTMC Form Factor
 - Two-port Gigabit Ethernet packet processor engine for use with selected Performance Technologies PICMG 2.16 switches
- >> Multiple Gb Interface Options
 - Fiber SC, 1000 BASE-T copper or intra-switch
- >> Power-On Diagnostics and Continuous Hardware and Software Monitoring
- >> Less than 17W of Power on 5V and 3.3V Combined
- >> Supports IEEE 802.3z and IEEE 802.3x Flow Control

The FlexNAT™ module for our embedded switches provides a powerful and adaptable platform for implementing new networking and communications applications. It is the first embedded Ethernet solution that combines the power of near wire-speed packet processing with Gb switching in a single PICMG® 2.16 chassis slot. By combining switching and packet processing functions in a single slot, crucial chassis space is saved.

FlexNAT makes sophisticated load balancing, firewalling and network management techniques available in embedded applications without interfering with fundamental switching operations key to system performance in advanced equipment. The FlexNAT module has been specifically designed to make embedded system integration tasks easier, so products can get to market quickly.

The FlexNAT module allows one set of IP addresses (private IP addresses) to be converted to another set of IP addresses (public Internet IP addresses). Network managers can freely use these internal addresses to avoid obtaining registered public addresses, but because these private addresses work only within their own realm, they are non-routable over a public infrastructure. When communication between a privately addressed host and a public network (like the Internet) is needed, address translation is required.

Coupled with our leading switch management software and potent scripting language, FlexNAT can be completely configured through a switch carrier's CLI or SNMP clients. This permits easy manipulations of the attached nodes to accommodate changes in system/network topology, client setups, network events and SNMP traps/events. FlexNAT's single point of management can be employed to easily move Web or other services from one server blade to another without worrying about broken links - by simply changing the inbound mapping at the FlexNAT module to reflect the new host. Internal network/system changes are shielded from outside clients as they only see the FlexNAT's single, external IP address.

This single connection point also enables integrators of embedded systems to pre-configure the internal/private IP addresses of the blades (or "nodes") in the chassis. When the system is delivered to the field, only the external/public IP address(es) for the installation site have to be set.

FlexNAT™ NAT/LSNAT

Module

Using the FlexNAT module, network designers can also filter and manipulate inbound and outbound packets based on:

- Range of source IP addresses
- Range of destination IP addresses
- Source TCP/UDP service port
- Destination TCP/UDP service port
- Source physical port number
- IP protocol field
- TOS field

Filtering allows control over the sources and destinations of traffic carried on both the internal and external networks. FlexNAT allows you to either NAT, pass unchanged or drop the individual packets.

Designed with the utmost regard for reliability, FlexNAT maximizes network uptime by continuously checking its health. If a problem is detected, the module can be programmed to de-assert all links, signaling the attached devices to optional routes.

FlexNAT also protects investments for the long term with easy FTP/TFTP updates to platform flash memory. System software is available through downloads from our Web site (www.pt.com), greatly simplifying or eliminating the need for dedicated on-site network administration.

Our IPnexus product line is rooted in over 125 man-years experience providing complete Ethernet switching and networking solutions. FlexNAT continues our long tradition of offering the best high-availability, fault tolerant products for the embedded computing, telecom and data communications industries.

Contact Information

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www.pt.com

Ordering Information

- >> **Front Panel Fiber Transceiver Options**
 - PT-FlexNAT-11498
1000BASE-SX short wavelength 850 nm laser, 750 m multi-mode fiber
 - PT-FlexNAT-11449
1000BASE-LX long wavelength 1300 nm laser, 5 Km, single-mode fiber
- >> **Front Panel Twisted Pair Version**
 - PT-FlexNAT-11500
1000BASE-T supports IEEE 802.3ab full duplex Gigabit Ethernet interface via an RJ-45 front panel for CAT 5 cable, 100m
- >> **Intra-Switch Version**
 - PT-FlexNAT-11591
Intra-fabric version links 2Gb ports of the switch carrier with no external interfaces

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Specifications

Base Configuration (1)

- 1000-Base T or 1000-Base SX or
- 1000-Base LX front panel port

Packet Processing/Filtering

- 85% wire speed with 64 byte packets; 100% wire speed at 128 byte packets
- Simultaneous NAT/LSNAT services with support for Static/Dynamic NAT, NAPT and Static NAPT

TFTP/FTP Clients

- Allow easy firmware upgrades and configuration upload and downloads

LED Indicators

- Link/Activity, On-line, Reset, Fault, S1/S2

Power-up Diagnostics and On-line Integrity Checks

- CLI or SNMP invoked real-time Diagnostics for Non-Stop Networking™

Standards Supported

- RFC 1631 - IP Network Address Translation
- RFC 1812 - Compliant Route Processing
- RFC 2391 - LSNAT
- RFC 3022 - Traditional NAT
- PICMG@ 2.15 R1 PCI Telephony Mezzanine Card PTMC
- IEEE 802.3ac Tagged packet
- IEEE 802.3-2000 1000Base-T

Management

- RFC 1157 SNMP v1, v2c, v3
- RFC 1213 MIBII
- RFC 1757 RMON groups 1, 2, 3, 9
- PTI Enterprise MIB
- CLI via out-of-band RS-232, Telnet
- Scriptable CLI Management Interface

Power Requirements

- 17 Watts

Optical Transceivers

- Fiber versions support a single port fiber optical interface compliant with IEEE-802.3z
- Duplex SC Fiber receptacle
- Class 1 FDA and IEC laser safety compliant

Environment

- Operating Temp: 32-135°F (0-55°C)
- Relative Humidity: 10-90%, non condensing

Agency Certifications (pending)

- UL 60950
- CSA-C22.2 No. 950 93
- FCC Class A (Part 15, Subpart J)
- CE
- ETSI EN 300 386
- NEBS Level 3 friendly

MTBF

- TBD hrs per Bellcore TR-NWT-000332
- Issue 5 @ 30° C