



PacketLogic PL7600

Product Overview

PL7600 is Procera Network's mid-range member of the PacketLogic™ product family. It is a conveniently packaged 1RU rack-mounted appliance with one gigabit Ethernet (GE) channel which enables a maximum throughput of 2 Gbps, or 1 Gbps full duplex. This makes PL7600 suitable for edge deployments in broadband networks.

All PacketLogic platforms run the same firmware which enables PL7600 to co-exist in networks with multiple PL7600, but also PL5600, PL7620 and the high-end ATCA chassis PL10000.

The unique Flow Sync functionality, available with PacketLogic firmware version 12 (PL2v12), shares flow information across multiple PacketLogic systems. This support of asymmetric traffic, viable through a low 2-6% overhead of administrative traffic, makes PL7600 applicable anywhere in the network where bandwidth requirement, channel count and subscriber base scales up or down to the PL7600 range. The solution elegantly integrates with the rest of the network and requires no adjustment to network configuration or design.

PacketLogic is a Layer 2 Ethernet repeater. This transparent design gives minimum network impact, low latency, easy deployment and increased capacity. The capacity can also be increased further

through clustering of multiple PL7600. A cluster with load-sharing PL7600s will automatically provide resilience. High-availability is otherwise deployed using any kind of Layer 2 fail-over technology, like Rapid Spanning Tree (RSTP). This offers the options of straight through or full functional redundancy. All network interfaces on PL7600 – RJ-45 copper, singlemode (LX) or multimode (SX) fiber – are available with hardware bypass. PL7600 runs all the PacketLogic DPI modules – LiveView, Filtering, Traffic Shaping, Web Statistics, and Statistics (runs on a dedicated PL1200/PL1400). The combination of modules provides the intelligence and you need at your fingertips.

Most important to making the right decision is to have access to and rely on accurate intelligence. This is where PacketLogic stands out from the competition. DRDL™ stands for Datastream Recognition Definition Language and is the state-of-the-art traffic identification and classification engine in PacketLogic. With more than 800 signatures that facilitate a broad range of criteria, header information, actual payload, bi-directional traffic information and the characteristics of a handshake, DRDL delivers previously unseen accuracy and an unchallenged low false-positive rate – even as applications get encrypted. Besides application identification, DRDL also gives PacketLogic the unique capability of characterizing a flow as streaming, random-

Key Features

- **1 RU rack-mounted appliance** for edge deployment
- **One channel** gigabit Ethernet (GE) wirespeed system with complete PacketLogic feature-richness
- **Centralized management** and complete API for large network administration
- **Preferred choice** for in-line Deep Packet Inspection (DPI) deployment thanks to transparent design and carrier-grade performance
- **Pertinent support** of asymmetric traffic through Flow Sync with minimum overhead traffic
- **Outstanding traffic identification** and classification accuracy in DRDL™
- **Instant information** in real-time traffic view
- **Extended network protection** capabilities

PacketLogic administration client software that is available for Windows, Linux and Mac. The Admin client establishes an encrypted connection to the out-of-band Admin interface on the PL7600. All features can also be automated using the Python API. Remote interfaces to PL7600 also include SNMP, Syslog and a CLI for system configuration. Both the GUI and the Python API enable centralized management of multiple PacketLogic systems.

The Python API or the DHCP/Radius snoopers activate per-user awareness in PacketLogic. This makes it possible to set per-user policies to package services, follow up on user behavior in Statistics, and give instant and accurate customer support. The multi-tier NetObject structure, with dynamic creation of objects and assignment of IP addresses, enables group conditions and aggregation of user information per individual subscribers as well as for a subscriber group (geographic, demographics, service tier etc.). The combination of the most accurate application and per-user awareness provides all the necessary means for business intelligence, network traffic control, network protection and innovative service creation.

PL7600 Hardware Platform

PL7600 is an integrated one (1) rack unit (RU) 19" rack-mounted appliance with AC or DC power supply. As a transparent Layer 2 device, PacketLogic uses the concept of channels. Two interfaces are bonded as a channel with an Internal and an External interface. These interfaces can be any kind of gigabit Ethernet (GE) – RJ-45 copper or singlemode (LX)/multimode (SX) fiber. All interfaces are available with or without bypass. The Layer 2 design assigns no IP addresses to the packet-forwarding (Internal/ External) interfaces, which substantially increases security by disabling attacks.

The appliance comes with three (3) systems management interfaces – Admin, AUX and Console. The systems management interfaces are RJ-45 BASE-10/100/1000. The Admin interface is used to connect the Admin client and the Python API remotely.

The AUX interface is typically used for pushing data to the stand-alone PacketLogic Statistics server (PLS) when physically attached to the PL7600. Console is used for systems setup through the CLI (command line interface) which is also reached through SSH. All interfaces on PL7600 are front-mounted.

PL7600 manages one (1) Gbps of bi-directional traffic (full duplex), one (1) million concurrent flows and 50,000 new connections per second (CPS). However, capacity is no exact science in flow-based systems since the number of local hosts, concurrent users, type of traffic, CPS etc. makes it a multi-dimensional equation.

Deployment

The capacity of PL7600 makes it suitable for edge deployments in broadband networks. However, the design and the support for asymmetric traffic make it applicable in all locations within PL7600's capacity range. Multiple PL7600 can be clustered to increase capacity by using a switch doing source/ destination load-sharing.

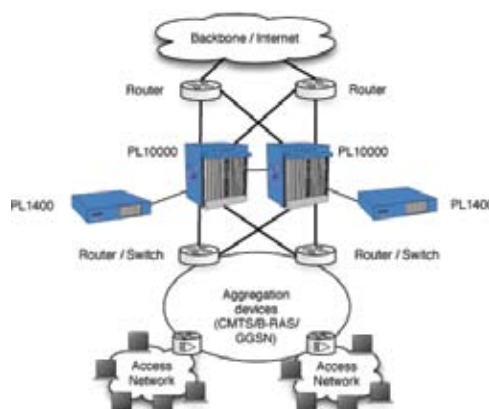
PL7600 is preferably deployed in-line. This makes it possible to shape and filter traffic. PacketLogic relies on queuing for bandwidth management and will never introduce any packets in the traffic stream. The use of a home brew Random Early Detection (RED) algorithm called BROWN, assures smooth adoption of traffic as it approaches a defined threshold.

PacketLogic typically relies on the network for resilience, i.e. PacketLogic is deployed as a transparent device in a redundant location (see illustration above). Any kind of Layer 2 or Layer 3 redundancy or load-sharing can be combined with PacketLogic. A stand-alone heartbeat fail-to-wire appliance that provides bypass outside PL7600 can also be facilitated.

PL7600 can be passively deployed for monitor-only purpose. This will make it possible to see traffic in real-time and aggregate statistics. It will however not make shaping or filtering possible. Passive deployments will still enable the application and per-user awareness with the accuracy that is PacketLogic's trademark. Procera suggests the use of RX/TX taps for passive deployments when there is the slightest risk of the Span/Monitor port being exhausted. This is due to potential packet-loss in the traffic forwarding, which will give an incomplete traffic replication that will affect traffic statistics.

Statistics is pushed to a stand-alone appliance called PLS (PacketLogic Statistics server). For further information on Statistics, see the PL1200/1400 datasheet.

Typical PacketLogic Deployment



Specifications	
Hardware	
Hardware	1 rack unit (RU), 19" rack-mounted
Physical Dimensions (not including handles and cable holders)	1.75" (h) x 17.63" (w) x 20" (d) / 4.45cm (h) x 44.8 cm (w) x 50.8 cm (d)
Power	100-240 VAC or 36-72 VDC
Weight	23 lbs/10.4 kg
Channels	One (1), i.e. one Internal and one External interface
	<ul style="list-style-type: none"> • RJ-45 BASE-10/100/1000 copper with bypass (fail to wire) • Multi-Mode SX GE fiber with/without bypass (fail to wire) • Single-Mode LX GE fiber with/without bypass (fail to wire) • All interfaces are front-mounted
Capacity and Performance (under beneficial conditions)	
Bandwidth	1 Gbps full duplex / 2 Gbps throughput
Concurrent Flows	1 million
New Connections per Second (CPS)	50,000
Subscribers	Recommended for up to 100,000 customers
Integration & Management	
Interfaces	<ul style="list-style-type: none"> • Graphical User Interface (GUI) administration client for Windows, Linux and MacOSX • Python Application Programming Interface (API) for Windows, Linux and Solaris • SNMPv2 • Syslog • Command Line Interface (CLI)
Physical Interfaces	<ul style="list-style-type: none"> • RJ-45 BASE-10/100/1000 Admin interface • RJ-45 BASE-10/100/1000 AUX interface • RJ-45 BASE-10/100/1000 Console interface
Miscellaneous	
Modules	<ul style="list-style-type: none"> • LiveView – real-time traffic view • Statistics – traffic analyzing • Filtering – Layer 7 filtering and network protection • Traffic Shaping – bandwidth management • WebStatistics – web interface connecting into Statistics (above)
DRDL Signatures	<ul style="list-style-type: none"> • ~900 signatures (Jul-08)
Subscriber Authentication	Dynamic creation of per user NetObjects and assignment of current IP address through: <ul style="list-style-type: none"> • DHCP Snooping • Radius Snooping • Python API integration (w/ DHCP, AAA, LDAP, AD etc.)