PROCERA
EMPOWERING INTELLIGENCE

Carrier-grade, hardware-based bypass solution

Procera Bypass Switch

Product Overview

Procera Bypass Switch (PBS) is an active external bypass switch that adds an extra level of resilience to PacketLogic deployments that require exceptional availability. This enables even the most cautious network manager to deploy PacketLogic inline.

The use of configurable heartbeat pulses allows PBS not only to detect a link failure but also system failures where the heartbeat packet fails to pass. Heartbeat frequency as low as 10 ms allows instant fail-over in case of a failure. With PBS you can also manually switch to bypass mode for systems maintenance.

PBS replicates the Internal and External interfaces on the PacketLogic system. Traffic comes in on Internal/External and is diverted to a second set of interfaces on the PBS. These interfaces are connected to the PacketLogic unit. PBS adds heartbeat packets and verifies that the heartbeat packets come through to the opposite channel interface. Finally the packet is sent out on the corresponding Internal/External interface of the PBS.

In case of a failure, the heartbeat packet does not come through as expected, PBS will bypass the second set of interfaces on the PBS and forward traffic directly to the corresponding Internal/External interface without passing through the PacketLogic system. PBS can be configured to automatically detect when the primary packet route is available again and switch back from bypass mode to normal mode. PBS is configured and administered via a serial communication console port. An intuitive web GUI (graphical user interface) makes the setup and administration quick and easy. The PBS can also be administrated via CLI or SNMP and supports SNMP traps for failure notifi- cation. The administrator connects to the PBS over a serial (RJ-11) or Ethernet (RJ-45) port.

Internal   External

DPI with heartbeat   Management
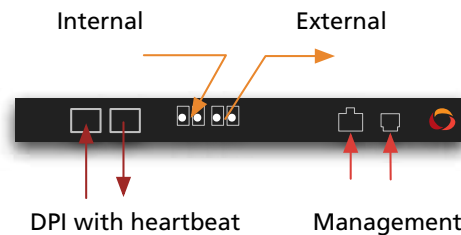
The physical Internal/External network interfaces of the PBS are fixed and can be any kind of single-mode or multi-mode 10 gigabit Ethernet (10GE) fiber. The interfaces connecting to the PacketLogic system are exchangeable SFP+ ports.

The Procera Bypass Switch includes double bypass architecture. This means that PBS relies on an architecture with two bypass routing circuitries: an active bypass circuitry and a passive bypass circuitry. The active bypass circuitry detects if the DPI system is forwarding traffic and enables bypass mode in case of failure. The passive bypass circuitry will be enabled in case of power failure to the PBS host system. In case of signal loss to an interface the corresponding interface will be disabled (loss of signal mitigation).

Deployment

PBS consists of a 1RU host system that can hold up to four 1GE or 10GE PBS bypass modules. This enables one single PBS host system to manage the redundancy for one (1) to four (4) PacketLogic systems mixing 1GE and 10GE in a single chassis. The PBS comes with redundant power supplies and can be ordered with either 48V DC or 90-240V AC.
The stand-alone and external architecture of PBS enables it to manage installations with any PacketLogic system, from entry-level systems and all the way up to the high-end appliances and chassis-based PacketLogic systems.
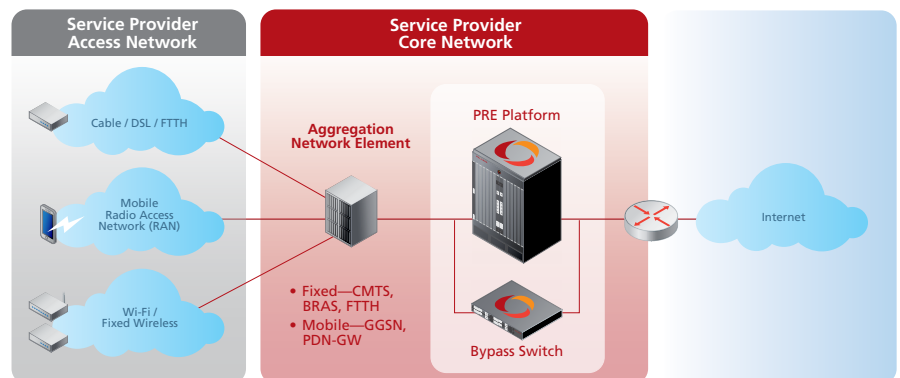
PRE
PacketLogic™
Real-Time Enforcement

Key Features:

- **GE and 10GE,** long-range (LX/LR) and short-range (SX/SR) modules

- **1RU host system** with up to four (4) bypass modules

- **Redundant** power supplies

- **Programmable** heartbeat pulses (10 ms–10 s interval)

- **Bypasses when detecting link failure,** system failure, loss of light — or when set to bypass for maintenance

- **Compatible with** any PacketLogic system

Specifications

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PBS HOST SYSTEM	
Physical Dimensions	• 1RU (front holders), 19" rack-mount • 444 mm x 339.3 mm x 44 mm (17.48" x 13.358" x 1.732")
Power Supply	• Dual redundant power supplies • 48V DC • 90-240V AC
Number of PBS Bypass Modules	• Four (4) per host system
Power Consumption	• Max 148W (with four (4) PBS bypass modules)
Operating Humidity and Temperature	• 0%–90%, non-condensing • 0°C – 50°C (32°F - 122°F)
EMC Certifications	• Class B FCC / CE / VCCI
PBS BYPASS MODULES	
Physical Dimensions	• 173.3 mm x 164.9 mm x 20 mm (6.822" x 6.73" x 0.787")
Internal/External Network Interfaces	• 1GE — SX (LC Duplex), 1000Base-SX (850nm) — LX (LC Duplex), 1000Base-LX (1310nm) • 10GE — SR (LC Duplex), 10GBase-SR (850nm) — LR (LC Duplex), 10GBase-LR (1310nm)
Bypass Network Interfaces	• SFP+ modules
Heartbeat Packet Rate	• Programmable, 10 ms-10 s
Management	• RJ-11 Serial Port • RJ-45 Ethernet Port

Typical PBS Deployment

Service Provider Access Network

Cable / DSL / FTTH

Mobile Radio Access Network (RAN)

Wi-Fi / Fixed Wireless

Service Provider Core Network

Aggregation Network Element

PRE Platform

Internet

Bypass Switch

• Fixed—CMTS, BRAS, FTTH
• Mobile—GGSN, PDN-GW

PRE PacketLogic™ Real-Time Enforcement

PSM PacketLogic™ Subscriber Manager

PIC PacketLogic™ Intelligence Center

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