

# Network Packet Broker Advanced with Deduplication

## PacketShadow-5000



The **PacketShadow-5000** intelligent visibility switch is a versatile, high-performance platform tailored for mobile core networks, metropolitan area networks (MAN), data centers, and enterprise networks.

Supporting **100GE, 40GE, and 10GE interfaces**, it provides advanced traffic management features such as **aggregation, filtering, replication, load balancing, timestamping, and tunnel processing**.

With its high density, energy efficiency, and robust traffic preprocessing capabilities, the PacketShadow-5000 seamlessly integrates with monitoring and analysis systems to enhance network visibility and efficiency.

## PRODUCT APPLICATIONS

- NPB (Network Packet Broker)
- SSL Decryption
- Data Masking
- Export NetFlow
- Deduplication

## HIGHLIGHTS

- Ultra-high Density Ethernet Interface
- Traffic Aggregation and Distribution
- Data Masking
- SSL Decryption
- Export NetFlow
- Deduplication
- Tunnel inner layer IP 5 tuple filtering, load balancing, tunnel stripping.
- High performance packet preprocess, such as time stamping, slicing, VLAN tagging, MAC modification, GRE termination
- High stability and reliability

# KEY FEATURES OF THE PACKETSHADOW-5000 SWITCH

## Programmable Hardware Platform

- Uses programmable switching chips to support software-definable protocols and packet processing.
- Enables identification of new network protocols and multi-layer tunnels.
- Supports software-defined forwarding behaviors, including tunnel decapsulation and flow distribution based on inner-layer IP 5-tuple.
- Capable of deep business processing, including SSL decryption, duplicate data deletion, masking, fragmentation reorganization, and out-of-order reorganization.

## User-Friendly Management Interfaces

- Offers multiple management options, including CLI, Web UI, SNMP, and REST API, for seamless configuration and monitoring.

## Advanced Service Processing

- Provides advanced visibility features like packet header matching, timestamping, slicing, and modification.
- Delivers wire-speed packet processing for enhanced performance.

## Multi-Level Concurrent Policy Processing

- Implements traffic policies at inbound interfaces, intermediate links, and outbound interfaces.
- Supports functions like traffic aggregation, distribution, replication, and load balancing.
- Allows flexible L2/L3/L4/L7 filtering policies and independent or unified filtering during traffic replication.

## Load Balancing

- Automatically redirects traffic from failed links in a load-balancing group to active links.
- Ensures unaffected traffic flow on normal links, minimizing failure impact.

These features make the PacketShadow-5000 a versatile, high-performance solution for network visibility and traffic analysis.

# KEY SOFTWARE FUNCTIONS

## Packet Identification

- Link layer, IP, ICMP, TCP/UDP/SCTP, BGP/OSPF/ISIS, VLAN, VXLAN, MPLS, GTP/GRE, L2TP/PPTP, IPsec (AH, ESP).

## Basic Matching

- IPv4/IPv6 5-tuple, physical port, SMAC/DMAC, Ether type, MPLS label, VLAN, VNI, TCP Flag, DSCP, L4 Port mask, message size, fragmented messages, etc.
- Tunnel inner layer wildcard N-tuple rules
- Tunnel inner layer precise IPv4/IPv6 5-tuple rules

## Message Processing

- Add, modify, and delete VLAN tags.
- Nanosecond time stamp.
- Truncation based on ACL rules.
- Changes to the SMAC/DMAC.

## Management Style

- Serial port, Telnet, SSH, SSLv3/TLS Access WEBUI

## Load Balancing

- Based on SIP/DIP, IP 5-tuplet, SPORT/D PORT.
- Based on the inner tunnel IP 5-tuple.
- Resilient load balancing protection mechanism.

## Tunnel Treatment

- GRE tunnel encapsulation.
- Tunnel stripping of GTP, GRE, VLAN, VXLAN, ERSPAN, IP over IP, and MPLS.
- Tunnel end of GRE, VXLAN

## Third Party Tool Management

- Syslog, SNMP, SNMP Trap, and RESTAPI, support RADIUS and TACACS+ centralized authentication

## Traffic Forwarding and Replication

- Load balanced output
- Port 1: N & link group N: M

## Advanced Matching Filters

- TCP flag.
- The length of the message.
- HTTP, HTTPs, Email, FTP, POP3, SMTP, DNS, Radius, COAP, etc.
- Match based on the host field & URL.
- Outer IP+ application layer protocol type, or URL; inner-layer IP+ application-layer protocol type, or URL, or feature code.

## Advanced Processing Features

- Packet header truncation out.
- Deduplication.
- IP segments reorganization.
- TCP out-of-order reorganization.
- VXLAN tunnel encapsulation.
- Packet desensitization (keyword, interval set).
- SSL/TLS Decryption.
- Netflow
- Flow Sampling (based on 5-tuple, sample rate setting).

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