

# NEOXPacketWolf 100G-400G Advanced Packet Processor

## Hardware accelerated through FPGA architecture | Performance up to 400Gbps



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 made  
 in  
 Germany



The NEOXPacketWolf is the ideal platform for advanced packet processing of network data up to 400Gbps per device thanks to its FPGA-based architecture.

Our PacketWolf solutions belong to the family of Advanced Packet Processing Appliances and can be deployed as a complement to a Network Packet Broker (NPB) - or stand-alone in an existing network monitoring infrastructure.

The data traffic for processing usually comes from a Network Packet Broker, but can also originate from other sources, such as a SPAN port or Network TAP, and after processing is forwarded by PacketWolf on the same or a separate port to a monitoring/security tool or sent back to the original data source.

The use of an Advanced Packet Processing Appliance offers several advantages worth mentioning.

### KEY FEATURES

Small form factor - 1U

Supports lossless processing of network data up to 400Gbps

Reliable and low latency due to FPGA architecture

Up to 4x 100G QSFP28 interfaces or 4x 40G QSFP+ / 8x 25G (fan-out) / 16x10G (fan-out)

Supports individual configurations for 10G, 25G, 40G, 50G or 100G

Supports nanosecond timestamping according to IEEE 1588v2 PTP

Supports export of LiveFlow (IPFIX, NetFlow) data to NPM tools

Scalable and easy to commission

Replaceable fans and redundant power supplies

On the one hand, it is possible to granularly reduce the data load for the monitoring system through the advanced packet processing functions. For example, duplicate packets can be removed from SPAN sessions by means of deduplication (see whitepaper „TAPs vs SPAN Port“), or unwanted packets can be removed by means of various packet filtering options.

On the other hand, functions such as Packet Slicing and Packet Masking can ensure compliance with legal and compliance requirements. Particularly in connection with the GDPR, it may be necessary to use Packet Slicing to remove the user data, as the metadata is often sufficient for an analysis.

Using packet masking, it would also be possible to overwrite or „black out“ personal information such as voice data, GEO data, IMSI or IMEI information in the user data and thus hide sensitive and/or personal information from the eyes of third parties.

The processing of the network packets takes place on the high-performance FPGA in hardware and is carried out loss-free up to 400Gbps by the PacketWolf.

### HIGHLIGHTS

4x 100G  
QSFP28

Up to 4x  
100G QSFP28



Very low  
latency



FPGA-based  
nanosecond  
Timestamping



FPGA-based  
Deduplication



FPGA-based  
Packet Slicing



Protocol  
Header Stripping



FPGA design  
very high  
configurability



Development  
& QA in  
Germany



## KEY FEATURES

### ■ Line-rate FPGA features/functionality:

- Advanced filtering
  - Frame length, header length or payload length
  - Frame errors
  - L2 Protocol/Encapsulation
  - L3 IPversion/Protocol/Encapsulation
  - L4 Protocol (Ports)/Tunnel
  - Pattern compare
  - Complex expressions via logical operators (NOT,AND,OR)
  - Advanced Deduplication (customizable packet signatures to meet the unique requirements of each network.)
  - Masking (for sensitive information in the packets)
  - Slicing (to remove the sensitive or heavy payloads from the packets)
  - Decapsulation MPLS, VLAN, VNTAG, PPTP, ERSPAN, VxLAN, GRE, GENEVE, NVGRE, CFP, EoMPLS, IP-in-IP, MAC-in-MAC and custom/user defined encapsulations
- De-tunneling (Tunnel Termination) for traffic generated by vTAPs, ERSPAN,VxLAN
- GTP filtering
- Timestamping (where the time is being synchronized externally by PTP IEEE-1588 v2 or PPS)
- High precision PCAP Replay at original rate and at any desired rates
- Source port labeling and VLAN tagging
- Load-balancing on multiple VLAN tags

### ■ FPGA accelerated features/functionality:

- Loopback (shuffling the L2,L3,L4 sources and destinations)
- Entire payload masking

### ■ Host features/functionality:

- Secure Web GUI
- PCAP viewer
- PCAP composer/editor

### ■ Optional features/functionality:

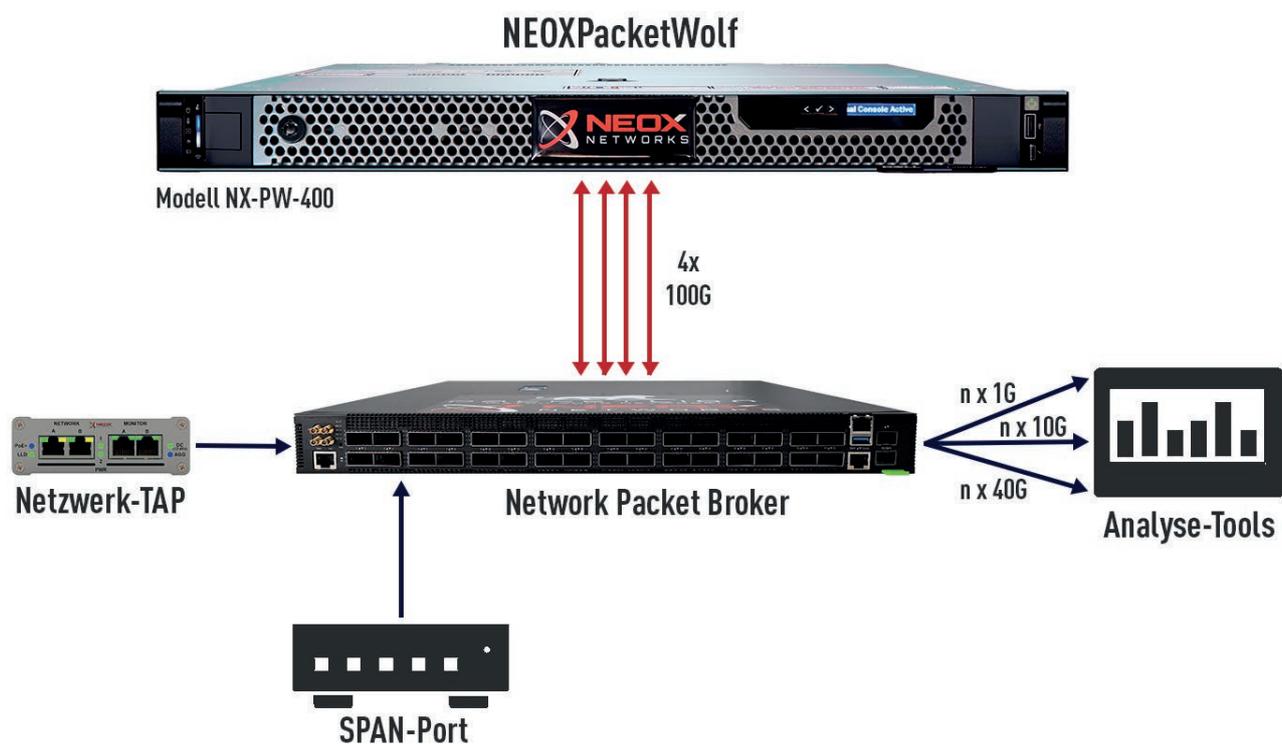
- IPv4/IPv6 subnets/addresses list filtering (based on TCAM/CAM technology for ultra-low latency filtering)
- Custom/user defined field list filtering (based on TCAM/CAM technology for ultra-low latency filtering)
- GTP Correlation
- IPFIX, NetFlow generation
- Intelligent dynamic packet slicing
- Full packet capture
- Anonymizing MAC, IP addresses, source/destination or custom/User defined fields



**OPTIONAL FEATURES - ON REQUEST**

<b>Netflow/IPFIX Export</b>	Generate metadata and flow records in standard NetFlow formats such as NetFlow v5, v9 and IPFIX
<b>IP List Filtering</b>	Enables to control what kind of IP traffic will be allowed into and out of the network – IPv4/IPv6 subnets/ addresses list filtering (based on TCAM/CAM technology for ultra-low latency filtering)
<b>Custom/User Defined Fields</b>	List filtering (based on TCAM/CAM technology for ultra-low latency filtering)
<b>GTP Correlation</b>	Filtering the GTP traffic based on the TEID List correlated from IMSI,MSISDN, MEI, MCC, MNC, APN, Bearer QoS ... etc (up to 32k TEIDs can be correlated simultaneously)
<b>Intelligent dynamic Packet Slicing</b>	Identifies the encrypted flows (Also the not standard like HTTPS) and slice the encrypted Data payloads only
<b>Full Packet Capture</b>	Records the entire ethernet frames on non volatile storage (CTD)
<b>Anonymizing</b>	MAC, IP addresses, source/destination or custom/user defined fields

**EXAMPLE SCENARIO**





**TECHNICAL SPECIFICATIONS**

HARDWARE	POWER SUPPLY	DIMENSIONS (HxWxD)	WEIGHT	U
Enterprise Class CPU	2 power supply units with 700W each	43 mm x 482 mm x 823 mm	ca. 18 kg	1
2x 10G LAN management port	Input: 200 to 240 VAC or 240 HVDC	1.7" x 19" x 32.4"	ca. 40 lb	1
Redundant and hot-swappable AC power supplies	Hot-Swappable, redundant			
64GB DDR4 RAM				
NVMe SSD storage for the operating system				

RELATIVE HUMIDITY		TEMPERATURE	
Operation	8% to 90% relative humidity (Rh), non-condensing	Operation	5° to 45° C / 41° to 113° F
Storage	5% to 95% relative humidity (Rh), non-condensing	Storage	-40° to 65° C / -40° to 149° F

**MODELS**



NX-PW-100



NX-PW-200



NX-PW-400

ITEM NO.	DESCRIPTION
NX-PW-100	4x 25G SFP28 interfaces with 100G data throughput - or 4x 1G SFP / 4x 10G SFP+
NX-PW-200	2x 100G QSFP28 interfaces with 200G data throughput - or 2x 40G QSFP+ / 4x 25G (fan-out) / 8x10G (fan-out)
NX-PW-400	4x 100G QSFP28 interfaces with 400G data throughput - or 4x 40G QSFP+ / 8x 25G (fan-out) / 16x10G (fan-out)

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