

CASE STUDY

NEOX Networks PacketWolf: 400G Advanced Packet Processing for Enterprise Networks

Challenge

NEOX Networks, an innovative provider of network monitoring and security solutions, faced challenges in implementing a high-performance solution for a multinational energy & utilities enterprise network. The solution required to support a maximum of 400G traffic with low latency while efficiently managing network traffic.

Solution

To meet these requirements, NEXO Networks integrated Napatech's NT200A02 SmartNICs into the PacketWolf appliance. This enabled ultra-low latency processing at 400G, ensuring optimal packet processing through features such as deduplication, header stripping, packet slicing, data masking and precise time synchronization.

Benefits

By deploying the NEXO Networks' PacketWolf solution, powered by Napatech's FPGA SmartNICs, the client successfully addressed its high-performance networking needs while ensuring compliance, operational efficiencies and scalability to accommodate further demands.

"Napatech's SmartNIC technology was instrumental in the development of our PacketWolf solution. Its advanced packet processing capabilities allowed us to deliver an ultra-low latency, high-performance platform that meets the evolving demands of enterprise networks. With Napatech, we were able to enhance efficiency, reduce processing overhead, and provide our clients with a scalable and future-proof solution."

- Timur Ozcan CEO, NEOX Networks

Industry Challenges

Modern enterprises face immense challenges in managing and analyzing high-speed network traffic. Common issues include:

- Data overload: Networks operating at 100G and beyond generate massive amounts of data, making efficient processing difficult.
- Inefficiencies in monitoring: Duplicate packets, unstructured data and irrelevant traffic increase storage and analysis costs.
- Latency sensitivity: Real-time applications and security measures demand ultra-low latency processing.
- Security and compliance: Sensitive data in transit must be masked or filtered to meet compliance regulations, while maintaining operational integrity.

Client's Requirements

A multinational energy & utilities enterprise required a solution that could:

- Support high throughput: Handle a maximum of 400G traffic with minimal latency.
- Optimize traffic processing: Reduce data volume efficiently.

- Ensure compliance: Meet regulatory requirements by protecting sensitive information.
- Scale for future growth: Accomodate increasing bandwidth demands while maintaining operational efficiency.

Solution

NEOX Networks integrated Napatech's NT200A02 SmartNICs into the PacketWolf appliances, addressing the client's requirements through:

- Ultra-low latency: Enabled real-time processing, even at speeds of 400G.
- Deduplication: Eliminated redundant packets to reduce storage needs.
- Header stripping and packet slicing: Removed unnecessary headers and truncated packets at defined offsets.
- Time synchronization: Provided PPS and PTP time synchronization with nanosecond precision.
- Data masking: Ensured compliance with GDPR and other data privacy regulations.

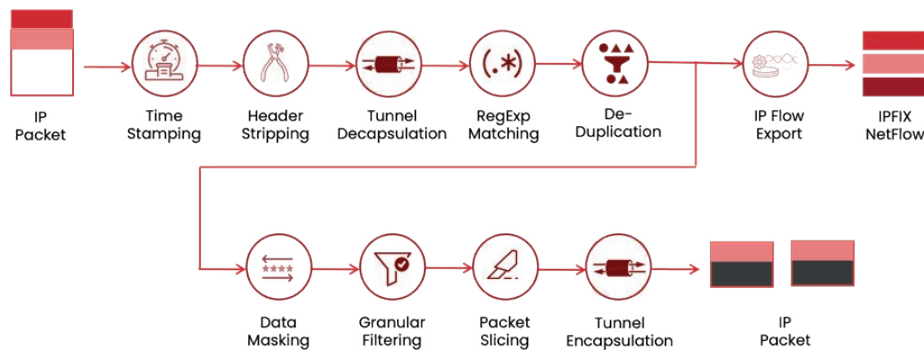
Benefits

The NEOX PacketWolf solution empowered the client to:

- Streamline traffic analysis: Enabled faster and more accurate analytics.
- Enhance security and compliance: Met strict regulatory standards.
- Achieve operational efficiency: Offloaded complex packet processing tasks to Napatech's FPGA SmartNICs, freeing CPU resources for critical operations.
- Maximize scalability: Prepared the organization to handle growing bandwidth demands with a future-ready solution.
- Reduce costs: Minimized storage and processing overhead.

The NEOX Networks' PacketWolf, powered by Napatech's FPGA technology, redefined packet processing with unparalleled performance, flexibility and efficiency.

Learn more about NEOX Networks at <https://neoxnetworks.com>.



Packet processing pipeline