# Simplifying Network Visibility with
# IP Flow Export

In the ever-evolving world of Network Visibility, efficiency and performance are paramount. As networks grow in complexity and scale, IP Flow Export technologies like Internet Protocol Flow Information Export (IPFIX) and NetFlow have emerged as essential solutions for optimizing network traffic monitoring, analysis, and security. These protocols provide deep insights into network behavior, enabling better traffic management, security forensics, and capacity planning. At NEOX, we understand that IP Flow Export is more than just a data collection mechanism — it's a game-changer for network observability and security.

## What is IP Flow Export

**IP Flow Export refers to the process of collecting and exporting metadata about network traffic flows for analysis. A flow is a sequence of packets sharing common attributes, such as: source & destination IP addresses, port numbers, protocol, packet & byte counts, timestamps, and flow duration.**

Two of the most widely used flow export protocols are:

**NetFlow (Cisco's Proprietary Standard):** Originally developed by Cisco, NetFlow (v5, v9 per RFC 3954) provides detailed traffic statistics, helping network administrators monitor bandwidth usage, detect anomalies, and troubleshoot performance issues.

**IPFIX (Internet Protocol Flow Information Export):** As the IETF standard (RFC 7011), IPFIX is an evolution of NetFlow with enhanced flexibility, supporting customizable flow records and vendor-neutral implementations.

| Source IP | Destination IP | Src Port | Des Port | Protocol |
|-----------|----------------|----------|----------|----------|

## Why IP Flow Export Matters

At NEOX, we recognize that IPFIX and NetFlow are critical for modern network visibility. Here's why:

1. **Enhanced Network Visibility**
   Flow data provides a granular view of network traffic, helping identify top talkers, application usage, and potential bottlenecks. NetFlow and IPFIX are powerful tools for delivering essential Layer 2-4 network data to network performance monitoring and security tools. However, generating high-quality NetFlow and IPFIX data via switches and routers can put a lot of strain on resources, often leading to dropped packets.

2. **Improved Security & Anomaly Detection**
   By analyzing flow data, security tools can detect DDoS attacks, malware propagation, and unauthorized access—enabling faster threat detection, containment, and incident response.

3. **Bandwidth Optimization**
   Understanding traffic patterns allows for better quality of service (QoS) policies, ensuring critical applications get priority bandwidth. Unlike full packet capture (which has its irreplicable uses), flow export is lightweight, making it ideal for high-speed networks without overwhelming storage or processing resources.

4. **Compliance & Forensics**
   In addition to packet data, flow records serve as an audit trail for compliance (e.g., PCI-DSS, GDPR) and forensic investigations and incident response in case of a cyberattack.

## How NEOX Delivers IP Flow Export

NEOX PacketWolf and PacketTiger, series of Advanced Packet Brokers are engineered to maximize the efficiency of IPFIX & NetFlow deployments. Unlike other vendors who require a license, the IP Flow Export is a Free (no license needed) feature with NEOX Packet Brokers. It is by-default turned on and ready to use. Here's how we do it:

1. **Flow Sampling & Aggregation**
   NEOX Packet Brokers support intelligent flow sampling from the real-time packet data, reducing data volume while maintaining accuracy — ideal for high-speed networks. It offloads network switches and routers resources so they can perform their primary job of forwarding the network traffic.

2. **Zero-Loss Flow Capture**
   NEOX Packet Brokers' hardware-accelerated processing ensures no flows are dropped, even at 400Gbps speeds. This is way beyond the capabilities of a router or switch trying to do the same job. Zero-loss flow capture means zero blind spots and 100% visibility.
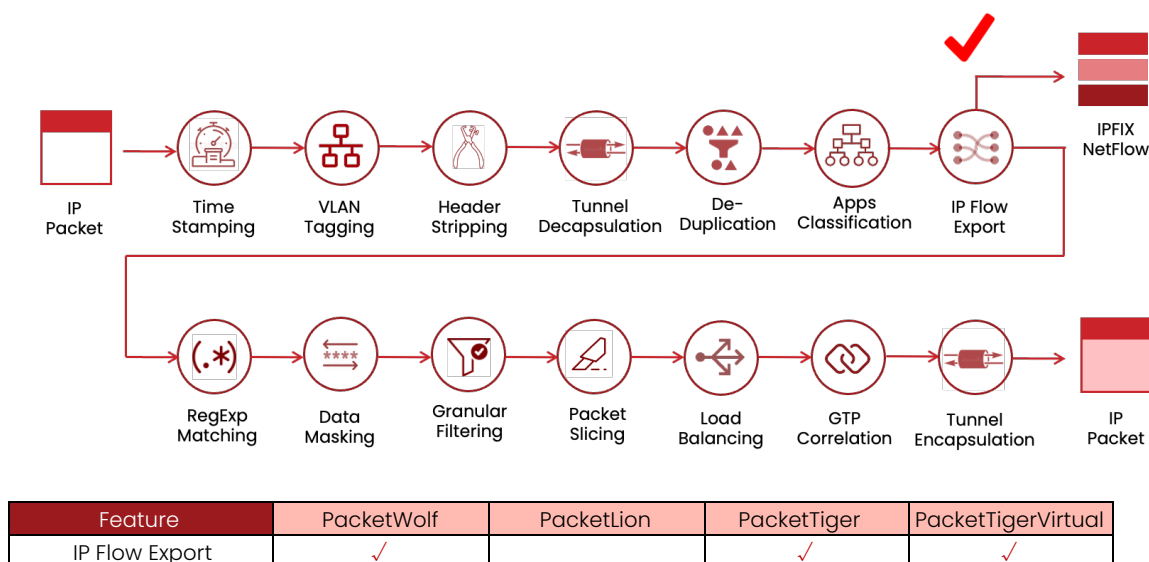
3. **Metadata Enrichment**
   Additional challenges include the reduced accuracy caused by sampling and limited interoperability due to restricted format options. NEOX Packet Brokers enhance flow records with VLAN, MPLS, and tunnel headers for deeper traffic analysis. Delivers full-fidelity NetFlow and IPFIX intelligence, avoiding the inaccuracies of sampled packets.

4. **Load-Balanced Flow Export**
   NEOX Packet Brokers distribute flow data efficiently across multiple tools acting as flow collectors (SIEM, APM, NPM, Analytics tools) to prevent overload. Integrate with SIEM, NDR, and Analytics tools and forward flows to Splunk, Elastic, or other tools for real-time threat detection and mitigation.

5. **Cloud & Hybrid Support**
   With NEOX Packet Brokers, you can extend IP Flow Export visibility to cloud and hybrid environments. NEOX IP Flow Export gives network and security teams the necessary visibility into traffic types across systems, including multi-cloud environments. This helps organizations identify and mitigate threats such as denial-of-service attacks and data exfiltration. It also enables cloud-native APM/NPM tools to quickly address user experience issues and ensure SLAs are met.



| Feature | PacketWolf | PacketLion | PacketTiger | PacketTigerVirtual |
|---|---|---|---|---|
| IP Flow Export | ✓ | | ✓ | ✓ |

## Best Practices for IP Flow Export with NEOX

To help you get the most out of your network, we recommend the following best practices to funnel, consolidate, and process all network traffic to be monitored through one of the two NEOX Packet Broker approaches:

- For better hardware performance, lower latency network, or for a future-proofed scalable visibility approach, deploy a **two-tier visibility architecture**. Use NEOX [PacketLion](#) Packet Broker for high-density TAP and tool aggregation, and use NEOX [PacketWolf](#) Packet Broker for faster IP Flow Export and other packet services operations.

- For a lighter or software-driven approach, consolidate all network traffic to be monitored through a NEOX [PacketTiger,](#) and then from there to the tool rail. Same can be achieved in the cloud with [PacketTigerVirtual](#) before forwarding traffic to cloud-native monitoring or security tools.
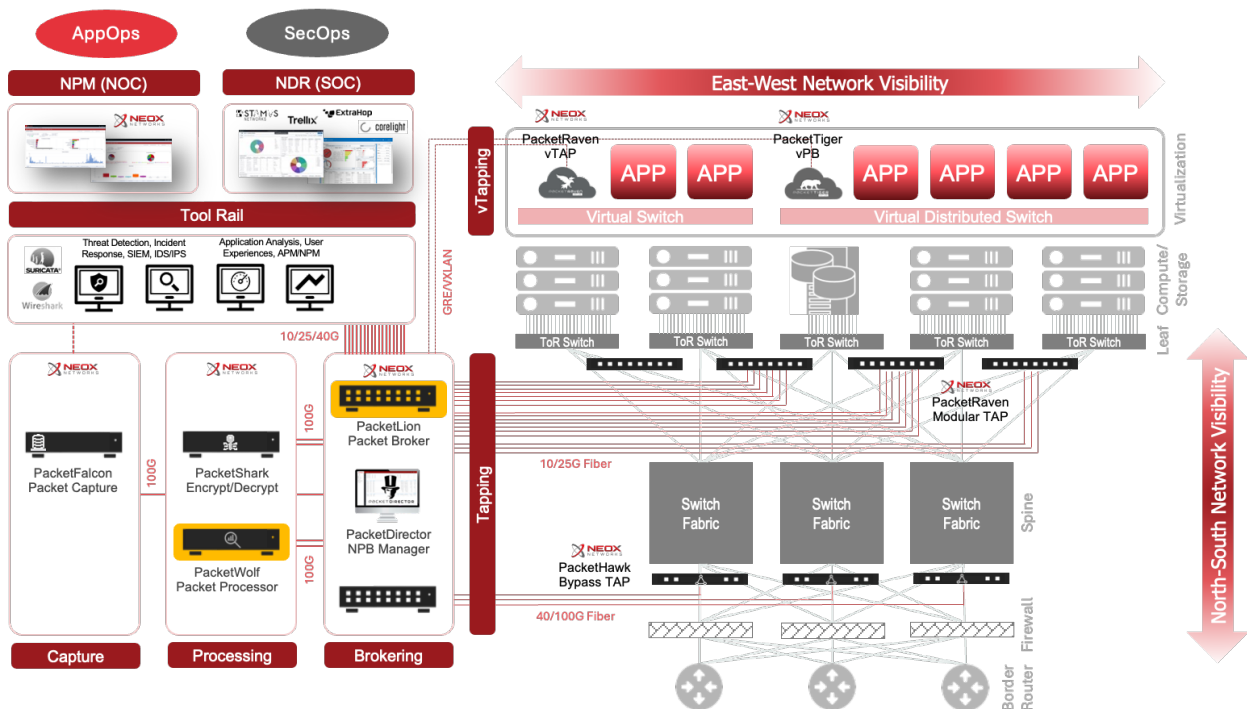


## The Future of Network Traffic Brokering Starts Here

As networks grow in complexity and speed, the importance of IP Flow Export will only continue to rise. At NEOX we're committed to helping you stay ahead of the curve with innovative solutions that deliver precision, reliability, and performance

## Ready to Transform Your Network?

Discover how NEOX can elevate your Network Traffic Brokering with advanced IP Flow Export technology. [Contact Us](#) today or [Request a Demo](#) to learn more about our solutions and take the first step toward a smarter, faster, and more secure network.
NEOX – Precision. Performance. Perfected.