Overview

As network complexity grows, universal traffic visualization becomes critical. Asterfusion FusionNOS NPB meets this challenge head-on. Powered by a high-performance DPU platform, this optimized solution delivers advanced NPB capabilities at scale, integrating hardware-accelerated data deduplication, Deep Packet Inspection (DPI), and mobile core signaling analysis. Managed via an intuitive Web UI, orchestrating complex, carrier-grade traffic rules has never been simpler.

Key Benefits

- **Intelligent Data Deduplication**

Multi-dimensional precision deduplication based on 5-tuple, sequence number, and payload to slash backend loads by 80%. Flexibly ignores volatile fields (TTL, MAC, DSCP, IPID, ports). Features a millisecond-level sliding window for sustained performance across multiple aggregated traffic streams.

- **Sensitive Data Masking & Anonymization**

Provides granular, one-step regulatory compliance via keyword, range-offset, and Regex matching. Supports zero-out overwriting and RC4 encryption. Enables parallel multi-rule processing while fully preserving packet structural integrity for backend analytics.

- **High-Performance IPFIX and NetFlow Generation**

Delivers full flow visibility with native IPFIX and NetFlow V5/V9 support. Features flexible 1:1 full, fixed-rate, random, and flow-based sampling mechanisms. Supports multi-destination output via load-balanced streaming or replication with comprehensive session logging.

- **Full-Spectrum Programmable Processing**

Empowers L2–L7 full-spectrum programmability for agile service expansion. Completely decoupled from rigid hardware pipelines, allowing operators to freely define business scenarios and orchestrate traffic on demand.

- **Massive ACL Table Capacity**

Provides carrier-grade rule capacity for network-wide traffic orchestration. Supports up to 10 Million (10M) concurrent ACL rules backed by 48 GB RAM per DPU, ensuring wire-speed filtering under ultra-high-density deployments.

- **Intelligent IP Defragmentation & Reassembly**

Automatically reconstructs fragmented IP packets into original data payloads to restore traffic topology. Supports dual-layer (inner/outer) reassembly for precise upstream matching, with configurable outputs of either reassembled or original packets.

- **Deep Keyword & Signature Matching**

Executes deep signature capture across both fixed-size and floating/sliding windows. Fully supports complex regular expressions (Regex) and hexadecimal string matching with customizable offset ranges to precisely pinpoint application-layer content

- **Comprehensive Mobile Core Signaling Inspection**

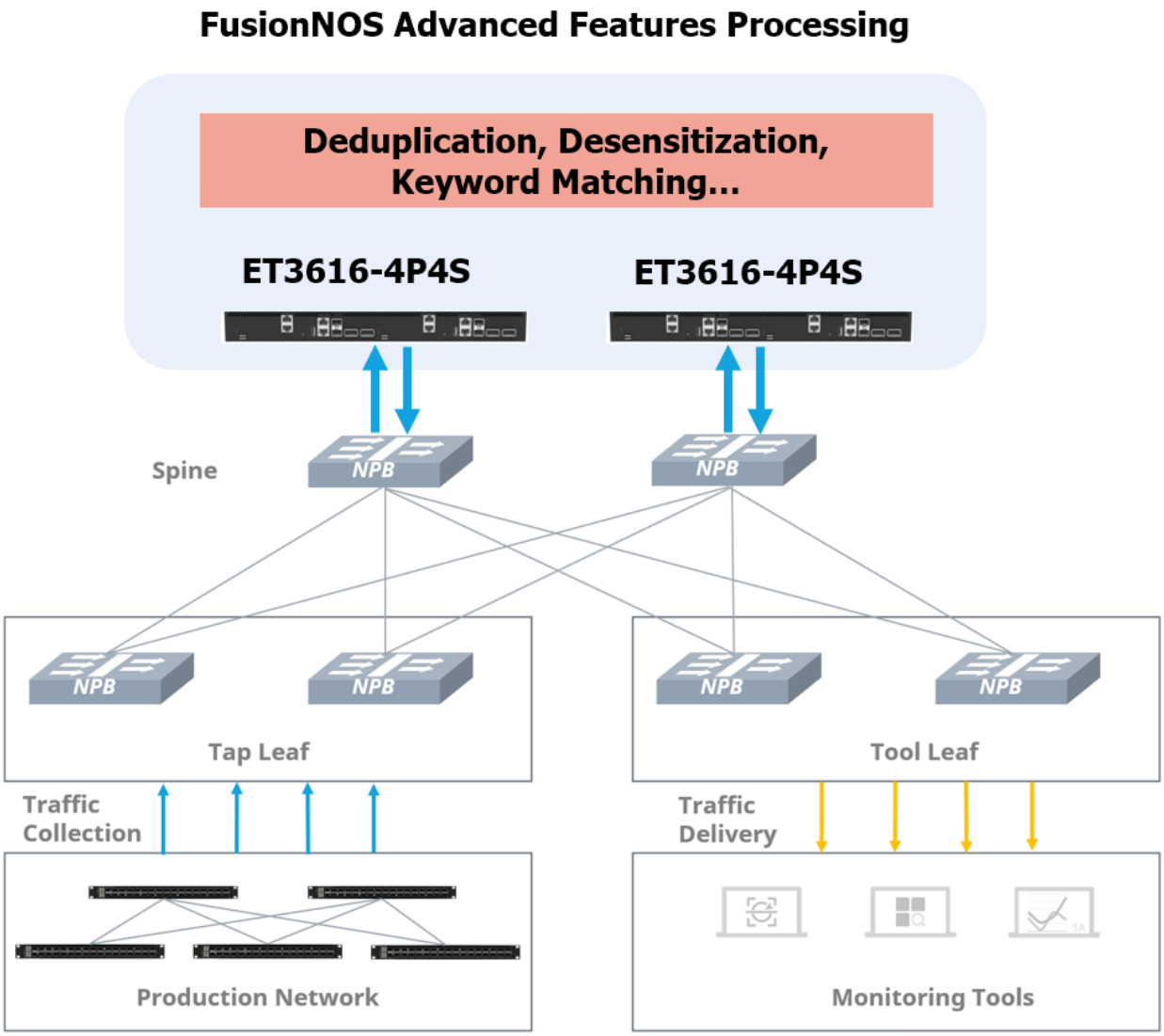
Supports direct filtering across diverse protocols (GTP-U/v0/v1/v2, HTTP/2, Diameter, S1AP, NGAP) and 4G/5G mobile identifiers (IMSI, IMEI, MSISDN, CI, TAC). Features granular deep inspection to isolate and match both VoLTE signaling-plane SIP messages and media-plane RTP/RTCP streams within S1-U traffic.

Deployment

FusionNOS NPB is capable of both DPU pool mode and standalone mode deployment, delivering a flexible and cost-effective next-generation network monitoring and visualization platform.

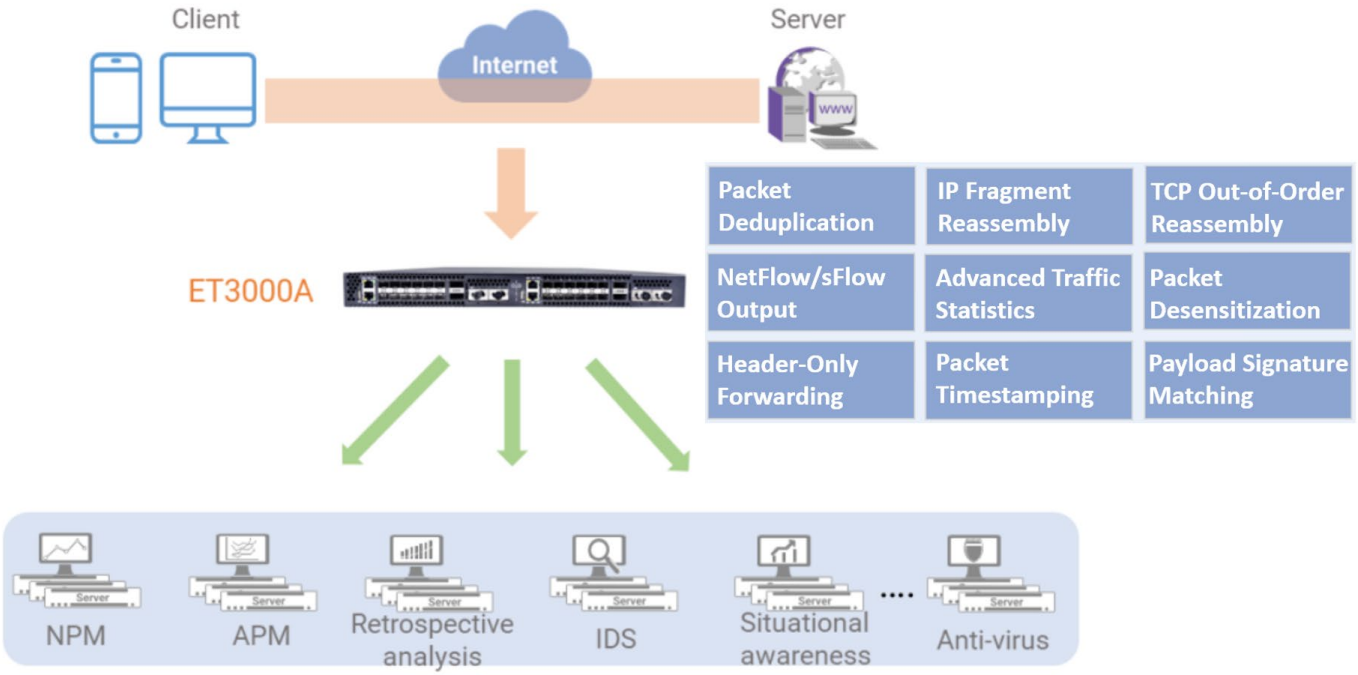
1. DPU Pool Mode

In DPU pool mode, the FusionNOS NPB is focused on NPB advanced features processing, it works as a supplementary part of existing PB-APP fabric.



1. Standalone Mode

In standalone mode, the FusionNOS NPB can either be deployed in legacy passive mode, or it can be placed directly in the data path. It can offload the processing of network traffic in back-end analytical systems and meet the overall needs of system performance, power consumption and TCO.



Software Features

Level1	Level2	Level3
Service Switching	Traffic Filtering	Support for IPv4/IPv6 wildcard seven-tuple rules
		Supports L2 source-destination mac, Ethernet protocol type rules
		Supports IPv4/IPv6 exact quintuple rules
		Support fixed window keyword rules/floating window keyword rules
		Support vlan, mpls, gre, vxlan, ssl_tls, ipip, ip6, ip6ip, ip6ip6, teredo, ipsec_ah, ipsec_esp, ftp, pop3, smtp, dns, radius, coap, pptp, l2tp, https, icmp bgp, ospf, isis, gtp, sctp message type filtering
		Supports filtering for various types including mobile signaling GTP-U, GTPv0, GTPv1, GTPv2, HTTP, HTTP/2, SIP, RTP, RTCP, Diameter, SGsAP, S1AP, NGAP, etc.
		Supports 4G LTE/5G specific signaling message filtering, including IMSI/IMEI/MSISDN/CI/TAC rules.
		Support for URL rules
		Support TCP Flag rules, including "fin", "syn", "rst", "psh", "ack", "urg", "ecn", "cwr", "nonce".
		Supports SIP/RTP/RTCP rules, capable of matching VoLTE signaling plane SIP messages in S1-U data, and capable of matching VoLTE media plane RTP/RTCP data in S1-U data
		Support for combination rules
	Traffic Forwarding	Supports forwarding to a specific port or group of ports
	Traffic Replication	Supports replication to a port or ELAG group
	Traffic Aggregation	Supports multi-stream traffic aggregation
		Supports the creation of logical outgoing interfaces (ELAG)
	Load Balancing	Supports load balancing policies based on source-destination IP, quintuple, and tunnel inner IP quintuple;
		Supports round-robin and IMSI-weighted load balancing

		Supports static, dynamic, and load balancing modes with weights
		Supports persistent source-and-destination mapping for egress traffic
	VLAN Processing	Supports adding VLANs, removing outer VLANs, and modifying VLANs
	Message Processing	Supports message de-duplication, optionally ignoring TTL, MAC, L2, DSCP, interface (cpu interface), TCP (including seq_num and ack_num for tcp, checksum for tcp), IPID, FCS, and optionally supporting (sport, dport, sip, dip, smac, dmac) fields.
		Support for timestamping
		Supports specified-offset packet stripping
		Supports outer layer MAC address modification
		TCP out-of-order reassembly
		Supports message truncation
		Supports message desensitization
		Supports IP fragmentation reassembly
	Tunnel Stripping	Supports GRE, VXLAN, ERSPAN tunnel encapsulation stripping
		Supports stripping one or more layers of VLAN encapsulation
		Supports stripping of GTP encapsulation
		Supports stripping one or more layers of MPLS encapsulation
	Message Encapsulation	Supports GRE, VXLAN, ERSPAN I, ERSPAN II, ERSPAN III, TCP encapsulation
	Tunnel Termination	Supports GRE, VXLAN tunnel termination
	Message Output	Supports message sampling output; supports NetFlow, sFlow output
Port Features	Port	Support port multiplexing; support automatic monitoring of port link status and security protection
		Support serial port, SSH, RestAPI, CLI management

Configuration Management Features	Basic Management Features	Supports online security upgrades
		Support configuration file import and export
		Supports NTP clock synchronization
		Supports SYSLOG log management
		Supports LLDP sending
		SNMP support
	Statistical Properties	Support device status statistics, including system memory and CPU usage
		Supports interface information statistics, including interface configuration and status, interface packet type statistics, interface packet count and rate statistics.
		Supports rule hit statistics, reassembly function statistics, de-duplication function statistics, NetFlow statistics
Mobile Internet Carrier Features	Signaling Interface Parsing & Reconstitution	Supports GTPv1, GTPv2 (S11), 4G S1, and 5G N2/N11/N12 signaling parsing and CDR (Call Detail Record) output
		Supports 4G S6A and 5G N4 interface information parsing
		Supports decryption of 4G S1 EPS NAS signaling (EEA1, EEA2, EEA3) and 5G N2 5GS signaling (NEA1, NEA2, NEA3)
	Traffic Correlation & Tagging	Supports packet trailer stamping/tagging for user plane data across 3G-Gn-U, 4G-S1U, 5G-N3, and 5G-N4
		Supports MAC address tagging for both signaling and user plane traffic
	Automated NE Structure Learning	Automated 4G Network Element (NE) IP topology learning
		4G NE signaling link diagnostics
		Automated 5G NE IP topology and gNodeB (base station) IP learning
		5G NE signaling link diagnostics
	Traffic Filtering	Supports signaling filtering based on IMSI rules
		Supports user plane filtering based on IMSI rules
		Supports IMSI prefix filtering

		Supports signaling filtering based on MSISDN, IMEI, CI, TAC, etc.
		Supports user plane filtering based on MSISDN, IMEI, CI, TAC, etc.
		Supports user plane packet stripping for VLAN, MPLS, and GTP tunnels
		Supports inner 5-tuple filtering and distribution inside GTP tunnels for untagged data.
		Supports VoLTE filtering: outputs tagged SIP signaling from specified port groups; outputs tagged VoLTE data from specified port groups; supports fuzzy filtering (ranges/prefixes, etc.) by SIP number segments
		Supports IMSI/IMEI/MSISDN-based sampling output; supports adaptive sampling/filtering based on GTP-U packet count or per-subscriber flow count
	IPv6 Feature Support	Supports IPv6 capabilities at both subscriber and Network Element (NE) levels.
		Supports IPv6 information tagging/stamping.
	Statistical & Analytics Features	Supports Network Element (NE) IP address statistics.
		Supports signaling processing statistics across modules including S11, S1, HTTP/2, N11, N12, N2 (NGAP), NAS, and GTP-U (S1-U, N3, Gn-U).
		Supports GTP-U bearer information module statistics.
		Supports user plane data backfill/correlation statistics.
		Supports signaling link quality analytics and statistics.
		Supports N4 (PFCP) module statistics.
		Supports S6A (Diameter) module statistics.
		Supports hit-rate statistics for IMSI-based rule filtering.

Hardware Specifications

Product Model		ET3212A	ET3424A
Network Interface	100GE (QSFP28)	2	2 x 2
	10GE (SFP+)	12	2 x 12
Management Interface	USB	1 x USB2.0	2 x USB2.0
	Console	1 x Console RJ45	2 x Console RJ45
	MGMT	1 x MGMT GE RJ45	2 x MGMT GE RJ45
Processor	DPU model	1 x Marvell CN9670 24-core ARM64 2.5GHz	2 x Marvell CN9670 24-core ARM64 2.5GHz
	Cache capacity	L2 5MB, L3 14MB	
Memory & Storage	Memory	24GB DDR4, maximum 192GB	2 x 24GB DDR4, maximum 2 x 192GB
	SSD	1 x M.2 NVME 256GB	2 x M.2 NVME 256GB
Network Performance	Switching capacity	100Gbps	2 x 100Gbps
Electrical Characteristics	Fan Module	2 + 1, hot swappable	4 + 1, hot swappable
	Power Module	1 + 1, hot swappable	
	Input voltage	100~240V AC or 36~72V DC	
	Maximum power consumption	300W	500W
Dimensions	Height	1U	
	Dimensions (W x H x D, mm)	440 x 44 x 560	
Operating Conditions	Operating temperature	0 - 45 ℃	
	Relative humidity	5% - 95%(non-condensing)	

Product Model		ET3608-2P2S	ET3616-4P4S
Network Interface	100GE (QSFP28)	2	2 x 2
	10GE (SFP+)	2	2 x 2
Management Interface	USB	1 x USB3.0	2 x USB3.0
	Console	1 x Console RJ45	2 x Console RJ45
	MGMT	1 x MGMT GE RJ45	2 x MGMT GE RJ45
Processor	DPU model	1 x Marvell CN103 8-core ARM64 2.5GHz	2 x Marvell CN103 8-core ARM64 2.5GHz
	Cache capacity	L2 8MB, L3 16MB	
Memory & Storage	Memory	16GB DDR5, maximum 48GB	2 x 16GB DDR5, maximum 2 x 48GB
	SSD	1 x M.2 NVME 256GB	2 x M.2 NVME 256GB
Network Performance	Switching capacity	200Gbps	2 x 200Gbps
Electrical Characteristics	Fan Module	1 + 1, hot swappable	2 + 1, hot swappable
	Power Module	1 + 1, hot swappable	
	Input voltage	100~240VAC	
	Maximum power consumption	100W (FULL configuration and workload)	200W (FULL configuration and workload)
Dimensions	Height	1U	
	Dimensions (W x H x D, mm)	440 x 44 x 470	
Operating Conditions	Operating temperature	0 - 45 ℃	
	Relative humidity	5% - 95%(non-condensing)	

Ordering Information

Part Number	Description
ET3212A	2x100G QSFP28, 12x10G SFP+, CN9670 24-core ARM64, DDR4 RAM configurable, 2xpluggable PSUs, 3xpluggable FANs, 19" appliance
ET3424A	2x(2x100G QSFP28, 12x10G SFP+, CN9670 24-core ARM64, DDR4 RAM configurable), 2xpluggable PSUs, 5xpluggable FANs, 19" appliance,NVME configurable
ET3608-2P2S-AC	8-core ARM64 N2 DPU appliance, 2x100GbE QSFP28, 2x10GbE SFP+, DDR5 memory selctable, Debian or Ubuntu w/t DPDK/VPP preloaded. Optional OpenWrt, Packetfence and ntop available
ET3616-4P4S-AC	2x8-core ARM64 N2 DPU appliance, 4x100GbE QSFP28, 4x10GbE SFP+, DDR5 memory selctable, Debian or Ubuntu w/t DPDK/VPP preloaded. Optional OpenWrt, Packetfence and ntop available
FusionNOS-PB-ADV-LIC	Advanced Packet Broker features running on DPUs including Dedup and large filtering sets
FusionNOS-PB-SIGNAL-LIC	Advanced NPB features w/t LTE and 5G signaling decoding and filtering license

Warranty and Service Support

Asterfusion FusionNOS Packet Broker comes with 2-year Basic H/W service and warranty, preloaded perpetual licensed FusionNOS and 1-year FusionNOS upgrade subscription.

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