

VISION XSTREAM 40 NETWORK PACKET BROKER

DATA SHEET

AGGREGATION, FILTERING, AND LOAD BALANCING FOR 10GBE/40GBE NETWORKS

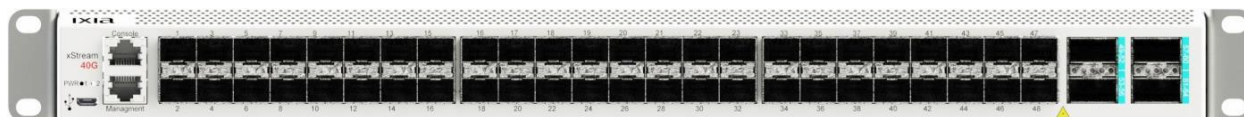
The need to monitor and inspect all traffic on high-volume 10GbE and 40GbE networks pressures organizations to invest heavily in new 10/40GbE tools, or risk oversubscribing their current tools. The Ixia Vision xStream 40 is a network packet broker (NPB) for high-speed networks, purpose-built for fail-safe inline security tools deployment and out-of-band network traffic monitoring.

The Ixia Vision xStream 40 offers a comprehensive set of high availability (HA) features that are critical for fail-safe inline security tools deployment. Smart load-balancing enables deployment of multiple tools in parallel to increase the overall throughput, thus removing bottlenecks typically seen on a single security device. It also supports tools such as SSL decryptors, intrusion prevention system (IPSs), firewalls, and web accelerators in serial for service-chaining. This enables banks, retailers, and government and health organizations to support many different enterprise network deployment scenarios.

The Ixia Vision xStream 40 also features Ixia's unique "Double Your Ports" feature (simplex connections), which provides industry-leading port density in a compact form factor. Moreover, each of the four 40GbE ports can be configured as four independent 10GbE ports, allowing a maximum of 64 10GbE ports. Furthermore, you can even combine four independent 10GbE ports into a single 40GbE, using the same MTP to LC fan-out cable, effectively yielding a maximum of 16 40GbE ports in the chassis.

HIGHLIGHTS

- Comprehensive high availability (HA) features to support fail-safe inline security tools deployment
- Inline security tools can be deployed in serial (service-chaining) or in parallel (load balancing), or both to increase the throughput yet maintain maximum flexibility
- Tool-sharing reduces costs by allowing multiple departments in an organization to utilize the same monitoring tool to monitor multiple links throughout the organization
- Filtering increases efficiency and maximizes tool utilization by sending each tool only the traffic it needs
- Also supports advanced features such as asymmetric load balancing and mixed speed load balancing
- Tool load balancing protects the investment in existing monitoring tools by splitting the load from 40GbE and 10GbE links to 1GbE and 10GbE tools
- Relieves oversubscribed tools through load balancing and packet slicing
- "Double Your Ports" feature doubles port density



PRODUCT CAPABILITIES

HIGH AVAILABILITY

Highly reliable and foolproof HA feature connect two Ixia Vision xStream 40 devices via a sync cable to support Active-Active and Active-Standby modes to provide traffic redundancy to connected tools. Configuration and state synchronization is maintained with both Auto Sync and Manual Sync options.

Coupled with two external bypass switches, which act as active-standby, the architecture offers the highest resilience against any kind of failures such as tool failure, cable/transceivers failure, power failure, packet broker failure.

Load Balancing Group (LBG) supports spare ports with N:M tool redundancy where N active ports are protected by M warm standby tools. When tools are deployed in inline serial (service chaining), tools in the front can be safely bypassed when they fail so tools in rear can continue inspecting the traffic.

With HA features in Ixia’s iBypass series, complex use cases can be implemented with extreme high availability.

- Fail-safe inline security tool deployment in serial (service chaining) or in parallel (load balancing) or both
- In-band or out-of-band HeartBeats (HB) packets for tool health checking; HB packets are also customizable
- Link Failure Detection (LFD) maintains synchronized link status on both sides of a tool or network
- Smart re-balancing to cause least disruption on exiting traffic and tools
- Session-aware load balancing with symmetric and asymmetric hash algorithms
- HA supports Active-Active, or Active-Standby modes; Auto Sync or Manual Sync of configuration and operation status; and highly reliable synchronization engine with spare ports for protection
- Spare ports with loopback capability to support inline fail-safe security tools deployment

NETSTACK CAPABILITIES

The Ixia gold-standard baseline filtering functionality for network packet brokers



Aggregation – consolidate incoming traffic to optimize port usage and simplify filter logic. Support 1:1, Many:1 and many:many traffic streams when combined with replication



Replication – traffic can be easily replicated to multiple tools at egress, allowing multiple tools to monitor the same traffic after filtering criteria



Source Port Labelling (VLAN Tagging and Untagging)

- VLAN tag management (ingress tagging and egress stripping)
- VLAN translation or replacement to deal with tools’ limitation on the number of tags it can handle



Load-balancing

The Ixia Vision xStream 40 is a purpose-built appliance for distributing a traffic load to multiple tools. SFP+/QSFP+ ports and an integrated multi-speed flow distribution engine make Ixia Vision xStream 40 ideal for distributing and load-balancing traffic from 10GbE and 40GbE links to multiple 1GbE and 10GbE tools.

It can also aggregate traffic from multiple 1GbE and 10GbE links and distribute it to 1GbE, 10GbE, or 40GbE tools. With the addition of a monitoring load balancer, these multiple 1GbE, 10GbE, or 40GbE tools can share the load to process increasing volumes of traffic more cost-effectively than investing in new 40GbE or 10GbE tools. Not only is the CAPEX lower, but major savings also accrue through avoiding the disruption and learning curve of integrating complex new tools into the environment.

PACKETSTACK CAPABILITIES

Intelligent packet filtering, manipulation and transport



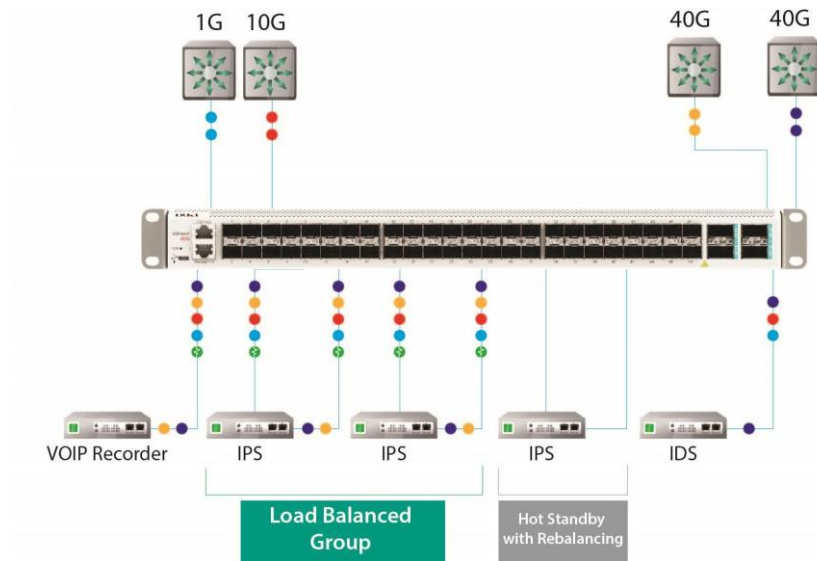
Packet Trimming (Slicing)

- To modify packet slice or retain only relevant data



Timestamping

Ixia Vision xStream 40 supports timestamping of packets on the fly at line rate with microsecond accuracy, supporting high-speed, low-latency trading environments. Using the PTPv2 (IEEE 1588) protocol, Ixia Vision xStream 40 guarantees that the timestamping will remain accurate. The timestamp can be appended to packets on the fly with or without recalculation of the CRC.



XSTREAM 40 ADDITIONAL FEATURES

- Purpose-built tool for both inline and out-of-band load balancing
- Supports tool-sharing, in which multiple independent links share a pool of monitoring devices
- TapFlow multi-layer filtering engine for layers 2-4 filtering
- RMON statistics (packet count, utilization, etc.); all counters exportable as CSV files
- Any port can be used for monitor or network
- Up to 64 10GbE SFP+ to 4 QSFP+ 40GbE connections
- Advanced SNMPv3 integrates with all major NMSs and Ixia's Indigo Pro
- Graphical "Drag and Draw" Filters
- MPLS label filtering
- Port rate limiting
- Link-state awareness
- Dual redundant hot-swappable AC or DC power supplies
- Role-based access control management
- "Double Your Ports" feature doubles port density
- Supports ftp, sftp, and scp for file and configuration transfer
- Automatic recovery of applications and processes when they cease to operate properly
- Pay-as-you-go licensing: 8-port and 12-port license bundles (QSFP = 4 ports); functional license tiers for aggregation, filtering, and load balancing

SPECIFICATIONS

PERFORMANCE	
Hardware Throughput	1.28Tbps; no packets dropped as long as monitor traffic does not exceed monitor port bandwidth
Architecture	Cut-Through
Speeds	1Gbps, 10Gbps, 40Gbps. 40G to 4 x 10G fan-out, 4 x 10G to fan-in
Latency	Ultra-low latency of 350 nanoseconds, any packet size, any-port to any-port, any amount of regeneration and filtering (excluding aggregation head-of-line blocking delays)
Load Balancing	Flow coherent, hash-based, 5-tuple (SIP, DIP, SPORT, DPORT, protocol), 2-tuple (SIP+DIP) for GTP and other protocols, or other combinations of L2-L4 header fields including SMAC, DMAC, ethertype, and VLAN; out-of-band, inline, tool sharing; 40G-to- 10G and 10G-to-1G distribution; link-state awareness; Heartbeat monitoring of inline tool health; 1 to 20 independent load balance groups with up to 20 load-balanced outputs per group. Mixed speed/throughput load balancing
Timestamping	Timestamping with microsecond accuracy and support for PTPv2 (IEEE 1588)
Port Mapping	Aggregation, any number of ports; regeneration, any number of ports; any-to-any, any-to-many, many-to-any, and many-to-many; any port can be used as an input, an output, or both simultaneously
TapFlow	Filter by IP source address, IP destination address, MAC source address, MAC destination address, source port, destination port, protocol, network port or port group, VLAN
IP Options	MPLS Label, User Defined
Network Intelligence	Current utilization, total packets, total bytes, CRC errors; more than 100 detailed traffic statistics and counters including RMON; all counters can be exported as CSV files
TACACS+/RADIUS	Server allows authentication of users from external AAA servers using either RADIUS or TACACS+ protocols
Device Management	Web UI, Serial console, SSH, (CLI), FTP/SFTP/SCP file transfers, SNMPv3, SNMPv2, SNMPv1, remote software upgrades, back-up and restore configuration, role-based access control management, NETCONF
CHASSIS	
Environment	<ul style="list-style-type: none"> • Operating Temperature: 0°C to 40°C • Storage Temperature: -10°C to 70°C • Relative Humidity: 10% min, 95% max, non-condensing

PERFORMANCE	
Mechanical	<ul style="list-style-type: none"> • Dimensions: 1.72" high x 16.5" deep x 17.7" wide • Mounting: Surface or 19" rack mount (1U) • Weight: 15.0 lbs
Connectors	<ul style="list-style-type: none"> • Ports: (48) SFP+, (4) QSFP ports, (64) SFP+ with a splitter cable • Management Port: (1) RJ45 10/100/1000 Copper • Configuration (CLI) Port: (1) Cisco DB9 to RJ45 • DC Receptacle: Terminal peak, 12-14 gauge wire
Hot-Swappable Modules	<ul style="list-style-type: none"> • Power: (2) AC universal or (2) -48VDC, redundant • Fans: (5) hot-swappable modules (4+1 configuration)
Electrical Interface	<ul style="list-style-type: none"> • AC Input: 100-240VAC, 5.29-2.2A, 50/60Hz • DC Input: -40VDC nominal -40 to -72VDC, 13.9A
Indicators	<ul style="list-style-type: none"> • (All ports) Link LEDs • (All ports) Activity LEDs • (2) Power LEDs

CERTIFICATIONS	
Safety	MET, CE
EMC	FCC, VCCI, C-Tick, KC, ME06, CCC, AR
Environmental	RoHS, WEEE
Protocol	Fully IEEE 802.3 compliant
Security	STIG and PCI security profiles, management port firewall, audit logging, HTTPS, import SSL certificate, AAA services with TACACS+/RADIUS

ORDERING INFORMATION

IXIA VISION XSTREAM 40 SYSTEM	
HARDWARE	DESCRIPTION
XT-40-STD-AC	Ixia Vision xStream 40 hardware with AC power supplies, 48 SFP+ ports, 4 QSFP+ ports (957-0628)
XT-40-STD-DC	Ixia Vision xStream 40 hardware with DC power supplies, 48 SFP+ ports, 4 QSFP+ ports (957-0625)
XT-40-COLDSPRLIC	Ixia Vision xStream 40, Cold spare license. 64 ports of Aggregation, Filtering and Load Balancing (957-0646)
XT-40-FAN	Ixia Vision xStream 40 replacement fan module (957-0593)

IXIA VISION XSTREAM 40 SOFTWARE AND SYSTEM	
LICENSES	DESCRIPTION
XT-40-AG-64P	Ixia Vision xStream 40, 64 ports of Aggregation (957-0602)
XT-40-ADD-AG-24P	Ixia Vision xStream 40, additional ports license, 24 Aggregation ports (957-0636)
XT-40-AGDR-64P	Ixia Vision xStream 40, 64 ports of Aggregation and Filtering (957-0601)
XT-40-AGDR-24P	Ixia Vision xStream 40, 24 ports of Aggregation and Filtering (957-0609)
XT-40-AGDRLB-64P	Ixia Vision xStream 40, 64 ports of Aggregation, Filtering and Load Balancing (957-0600)
XT-40-ADD-LB-12P	Ixia Vision xStream 40, additional ports license, 12 Load Balancing ports (957-0608)
XT-40-AGDRLB-24P	Ixia Vision xStream 40, 24 ports of Aggregation, Filtering and Load Balancing (957-0629)
XT-40-ADD-LB-8P	Ixia Vision xStream 40, additional ports license, 8 Load Balancing ports (957-0605)

XT-40-AGDR-U	Ixia Vision xStream 40, upgrade all ports from Aggregation to Filtering (957-0622)
XT-40-AGLB-U	Ixia Vision xStream 40, upgrade all ports from Aggregation to Load Balancing (957-0624)
XT-40-DRLB-U	Ixia Vision xStream 40, upgrade all ports from Filtering to Load Balancing (957-0623)

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