

## Ixia xStream™ 40



### Aggregation, Filtering, and Load Balancing for 10GbE/40GbE Networks

The Ixia xStream™ 40 is a network packet broker for monitoring high-speed network traffic, letting you share the network's rapidly increasing traffic load among multiple tools. The need to record and inspect all traffic on high-volume 10GbE and 40GbE networks puts pressure on organizations to invest heavily in new 10GbE and 40GbE tools, or risk oversubscribing their current tools.

Now, xStream 40 enables deployment of multiple tools in parallel, with traffic balanced between them. This approach allows you to use IPSs, firewalls, Web accelerators, and other inline tools more efficiently.

The xStream 40 also features Ixia's unique "Double Your Ports" feature, which provides industry-leading port density in a compact form factor.

### Aggregation and Filtering

xStream 40 provides one-to-one, many-to-one, one-to-many, and many-to-many mappings of network links to monitor ports. Traffic from any set of network links and Span ports can be aggregated into a single stream and copied to any monitor port. xStream 40 is also a smart filtering appliance that directs traffic of interest to monitoring tools. Using the TapFlow™ filtering technology, each tool gets only the traffic it needs for its particular purpose, resulting in higher scalability and better security. The TapFlow hardware filtering engine processes traffic at full 40/10Gbps line speeds while filtering the traffic by protocol, IP address, TCP/UDP port, VLAN, and more.

#### Key Benefits

- 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.
- 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



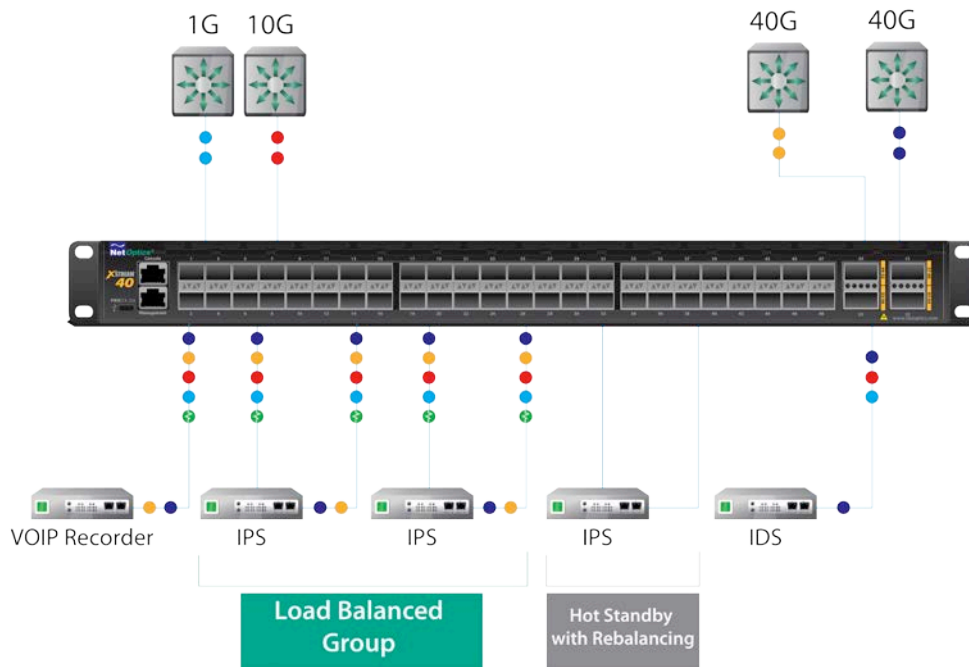
## Load Balancing Solution

The xStream 40 is a purpose-built appliance for distributing a traffic load to multiple tools. SFP+/QSFP+ ports and integrated multi-speed flow distribution engine make 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 itself lower, but major savings also accrue through avoiding the disruption and learning curve of integrating complex new tools into the environment.

## Timestamping

xStream 40 supports timestamping of packets on the fly at line rate with nanosecond accuracy in support of high-speed, low-latency trading environments. Using the PTPv2 (IEEE 1588) protocol, 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.



**Deployment Scenario: Inline Load Balancing with a Hot Standby**

## Key Features

- Aggregation of input traffic from multiple links
- Any-to-any, many-to-many port mapping
- Purpose-built tool for load balancing
- Inline tool load balancing e.g., (IPS): leverages 1GbE, 10GbE, and 40GbE monitoring tool investments
- Heartbeat monitoring of attached tools
- Supports tool-sharing, in which multiple independent links share a pool of monitoring devices
- TapFlow™ multi-layer filtering engine for layer 2-4 filtering
- Timestamping with nanosecond accuracy
- VLAN tag management
- RMON statistics (packet count, utilization, etc.) All counters can be exported as CSV files
- Any port can be used for monitor or network
- Up to 64 10 Gigabit SFP+ to 4 QSFP+ 40GbE connections
- Advanced SNMPv3 integrates with all major NMS and Indigo Pro
- Graphical “Drag and Draw” Filters
- MPLS label filtering
- Port rate limiting
- Link-state awareness
- Packet slicing
- Dual redundant hot-swappable AC or DC power supplies
- Role-based access control management
- “Double Your Ports” feature doubles port density

## Specifications

Performance	
Hardware Throughput	1.28Tbps; no packets dropped as long as monitor traffic does not exceed monitor port bandwidth
Architecture	Cut-Through
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 8 independent load balance groups with up to 16 load-balanced outputs per group
High Availability	Two xStream devices can be connected together via network ports to form a high availability solution. Configuration and state are constantly synchronized between them.
Timestamping	Timestamping with nanosecond 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
Packet Slicing	Truncate packet on the fly to increase scalability
TACACS+/RADIUS	Server allows authentication of users from external AAA servers using either RADIUS or TACACS+ protocols
Device Management	Web UI, Serial console, SSH, SNMPv3, SNMPv2, SNMPv1, Remote software upgrades, back-up and restore configuration, Role-based access control management, NETCONF
<b>Chassis</b>	
Environment	<ul style="list-style-type: none"> <li>Operating Temperature: 0°C to 40°C</li> <li>Storage Temperature: -10°C to 70°C</li> <li>Relative Humidity: 10% min, 95% max, non-condensing</li> </ul>
Mechanical	<ul style="list-style-type: none"> <li>Dimensions: 1.72" high x 16.5" deep x 17.7" wide</li> <li>Mounting: Surface or 19" rack mount (1U)</li> <li>Weight: 15.0 lbs</li> </ul>
Connectors	<ul style="list-style-type: none"> <li>Ports: (48) SFP+, (4) QSFP ports, (64) SFP+ with a splitter cable</li> <li>Management Port: (1) RJ45 10/100/1000 Copper</li> <li>Configuration (CLI) Port: (1) Cisco DB9 to RJ45</li> <li>DC Receptacle: Terminal peak, 12-14 gauge wire</li> </ul>
Hot-Swappable Modules	<ul style="list-style-type: none"> <li>Power: (2) AC universal or (2) -48VDC, redundant</li> <li>Fans: (5) hot-swappable modules (4+1 configuration)</li> </ul>
Electrical Interface	<ul style="list-style-type: none"> <li>AC Input: 100-240VAC, 5.29-2.2A, 50/60Hz</li> <li>DC Input: -40VDC nominal -40 to -72VDC, 13.9A</li> </ul>
Indicators	<ul style="list-style-type: none"> <li>(All ports) Link LEDs</li> <li>(All ports) Activity LEDs</li> <li>(2) Power LEDs</li> </ul>

Certifications	
Safety	MET, CE
EMC	FCC, VCCI, C-Tick, KC, ME06, CCC, AR
Environmental	RoHS, WEEE
Protocol	Fully IEEE 802.3 compliant

## Ordering Information

**Hardware (must be ordered together with a software license below)**

Catalog Part Number	Part Number	Description
XT-40-BASE-AC	957-0628	xStream 40, AC power supplies
XT-40-BASE-DC	957-0625	xStream 40, DC power supplies
XT-10-BASE-AC	957-0626	xStream 10, AC power supplies
XT-10-BASE-DC	957-0627	xStream 10, DC power supplies

## Software

Catalog Part Number	Part Number	Description
XT-40-AGG	957-0602	xStream 40 Aggregation
XT-40-DIR	957-0601	xStream 40 Filtering
XT-40-LB	957-0600	xStream 40 Load Balancing
XT-10-AGG	957-0611	xStream 10 Aggregation
XT-10-DIR	957-0612	xStream 10 Filtering
XT-10-LB	957-0610	xStream 10 Load Balancing

## Software Upgrades

Catalog Part Number	Part Number	Description
XT-40-UAD	957-0622	xStream 40, upgrade Aggregation to Filtering
XT-40-UAL	957-0624	xStream 40, upgrade Aggregation to Load Balancing
XT-40-UDL	957-0623	xStream 40, upgrade Filtering to Load Balancing
XT-10-UAD	957-0619	xStream 10, upgrade Aggregation to Filtering
XT-10-UAL	957-0621	xStream 10, upgrade Aggregation to Load Balancing
XT-10-UDL	957-0620	xStream 10, upgrade Filtering to Load Balancing