IXIA XSTREAM™ 10

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AGGREGATION, FILTERING, AND LOAD BALANCING FOR 1GBE/10GBE NETWORKS

The Ixia xStream™ 10 is a network packet broker purpose-built for fail-safe inline security tools deployment and out-of-band network traffic monitoring for high-speed networks. The need to monitor and inspect all traffic on high- volume 1GbE and 10GbE networks puts pressure on organizations to invest heavily in new 1GbE and 10GbE tools, or risk oversubscribing their current tools.

xStream 10 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 decryptor, IPSs, firewalls, and web accelerators in serial for service-chaining. This makes it possible to support the many different deployment scenarios seen in various enterprise networks such as banks, retailers, government and health organizations.

The xStream 10 also features Ixia's unique "Double Your Ports" feature (simplex connections), which provides industry-leading port density in a compact form factor.

AGGREGATION AND FILTERING

xStream 10 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 10 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 10Gbps line speeds while filtering the traffic by protocol, IP address, TCP/UDP port, VLAN, and more.

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.

- Tool load balancing protects the investment in existing monitoring tools by splitting the load from 10GbE links to 1GbE tools.

- Relieves oversubscribed tools through load balancing and packet slicing

- "Double Your Ports" feature doubles port density

LOAD BALANCING SOLUTION

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

It can also aggregate traffic from multiple 1GbE and 10GbE links and distribute it to 1GbE or 10GbE tools. With the addition of a monitoring load balancer, these multiple 1GbE tools can share the load to process increasing volumes of traffic more cost effectively than investing in new 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.

HIGH AVAILABILITY

Highly reliable and foolproof HA feature supports Active-Active and Active-Standby modes with both auto sync and manual sycn options to maintain configuration and state synchronization between the Primary and Secondary xStream 10 units. The HA link between the primary and secondary units can also be protected with a second link connected via a pair of spare ports. 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. Coupled with HA features in the iBypass series, complex use cases can be implemented with extreme high availability.
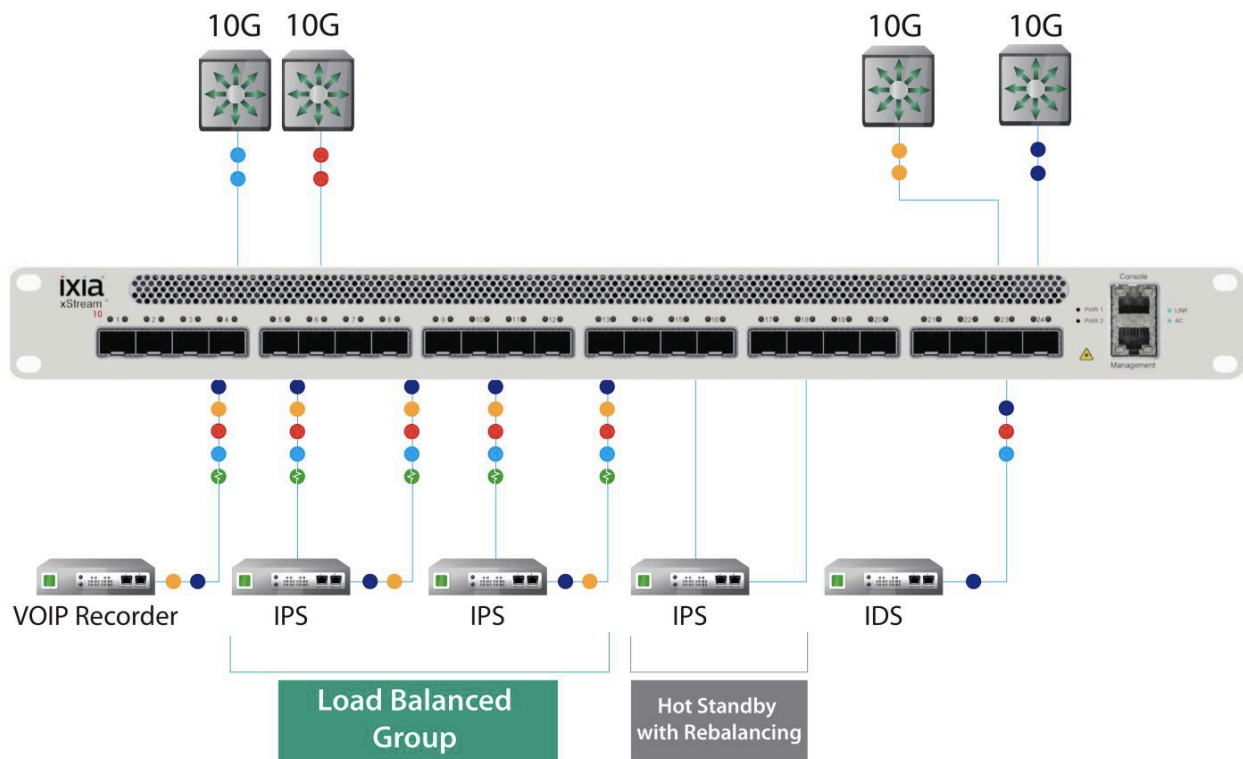
HA FEATURES:

- 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. Highly reliable synchronization engine with spare ports for protection.

- Spare ports with loopback capability to support inline fail-safe security tools deployment

GENERAL

- Aggregation of input traffic from multiple links

- Any-to-any, many-to-many port mapping

- Purpose-built tool for load balancing

- 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 24 10 Gigabit SFP+ connections

- Advanced SNMPv3 integrates with all major NMS and Indigo Pro

- Graphical "Drag and Draw" Filters

- 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 densitySupport 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	480Gbps; no packets dropped as long as monitor traffic does not exceed monitor port bandwidth
Architecture	Cut-Through
Speeds	1G, 10G
Latency	Ultra-low latency of 650 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; 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
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.
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
Chassis	

Environment	• Operating Temperature: 0˚C to 40˚C
	• Storage Temperature: -10˚C to 70˚C
	• Relative Humidity: 10% min, 95% max, non-condensing
Mechanical	• Dimensions: 1.75" high x 19.7" deep x 19.0" wide
	• Mounting: Surface or 19" rack mount (1U)
	• Weight: 13.5 lbs
Connectors	• Ports: (24) SFP+
	• 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	• Power: (2) AC universal or (2) -48VDC, redundant
	• Fans: (5) hot-swappable modules (4+1 configuration)
Electrical Interface	• AC Input: 100-240VAC, 5.29-2.2A, 50/60Hz
	• DC Input: -40VDC nominal -40 to -72VDC, 13.9A
Indicators	• (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

HARDWARE

XT-10-BASE-DC

xStream 10, AC power supplies

XT-10-BASE-AC

xStream 10, DC power supplies

SOFTWARE

XT-10-AGG

xStream 10 Aggregation

XT-10-DIR

xStream 10 Filtering

XT-10-LB

xStream 10 Load Balancing

SOFTWARE UPGRADES

XT-10-UAD

xStream 10, upgrade Aggregation to Filtering

XT-10-UAL

xStream 10, upgrade Aggregation to Load Balancing

XT-10-UDL

xStream 10, upgrade Filtering to Load Balancing