DATA SHEET

Keysight Vision Edge 10S (E10S) Network Packet Broker

The need for real-time visibility into network data has never been greater. Being able to know how applications and services are performing is no longer a nice to have. It is also imperative to have the ability to quickly quantify threats from within and outside of your network.

Keysight's Vision Edge 10S (E10S) network packet brokers are perfect for remote site installations with access to network and analytics tools in the same location. It is equally suitable for data centers that aggregate and send data across LAN or WAN to central NOC/SOC for real-time network visibility operations.

Key Features

- **High density multi-speed network packet broker** that is designed for deployment in racks to aggregate traffic
- **Hardware based implementation** of Netflow generation and advanced packet processing
- **Exceptionally feature rich** stand-alone packet broker that supports 1G to 10G networks
- **Easy-to-use web-interface** allows you to focus on security rather than configuration
- **Sophisticated load balancing** distributes traffic across several tools for monitoring or inline in serial or parallel to maximize up-time and ensure that no critical data is lost
- **Comprehensive wizards** make inline tool deployment extremely easy for complex use cases that require tool sharing or VLAN translation
- **Secure** serial console port with authentication
- **Space efficient** 1RU design saves rack space in your data center

Highlights

- High density 1U platform
- Supports 1G to 10G networks
- Support both inline and OOB use cases
- Simplex port mode (TX ignores RX status)
- Fully featured with Keysight's robust NetStack capabilities: Aggregation, replication, filtering, and load balancing
- Supports line-rate packet deduplication, header stripping and other advanced packet processing features
- Supports up to 20 Gbps hardware based Netflow generation. Working in conjunction with PacketStack trimming and preserving original packet length, 20 Gbps NF engine can generate flow records for over 200 Gbps traffic
- Supports L2GRE origination and termination
- Supports Generic Header Stripping that can strip off well-known protocol headers as well as proprietary protocol headers
- Keysight's patented filter compiler and three stages of filtering for one of a kind flexibility in managing network and tool traffic profile
- Up to 40 Gbps line rate advanced packet processing with PacketStack
- IFC clustering with other Vision platforms for single pane of glass operation, management, and provisioning

KEYSIGHT TECHNOLOGIES

Figure 1: E10S

Figure 2: E10S Front

Use Cases

- Single site deployment with network and network and security analytics tools
- In a distributed network, Vision Edge can be used with Vision E10S with direct connect, so tools at the data center can be used for multiple branch monitoring and security
- IFC clustering with other Vision packet brokers to leverage more advanced packet processing capabilities

Product Capabilities

NetStack capabilities	
The Keysight gold-standard baseline filtering functionality for network packet brokers	
Three Stages of Filtering Filter at ingress ports, in the middle and at egress ports for the maximum flexibility in designing complex Boolean logic without the need of using extra ports for loopback	**Dynamic Filter Compiler** Patented technology that resolves rule overlaps automatically and hence makes configuration simple and eliminates human errors
Aggregation Consolidate incoming traffic to optimize port usage and simplify filter logic. Support 1:1, 1: Many, Many:1 and Many:Many traffic mapping	**Replication** At the ingress port as well as at the dynamic filter. Replication at the ingress allows the same input to connect to multiple dynamic filters. Replication at the dynamic filter allows multiple tools to get identical traffic from the same dynamic filter.
Load-balancing Sophisticatedly distributes traffic across tools ports for monitoring in a session aware manner to preserve traffic integrity and also to maximize up-time with fail-over protection	

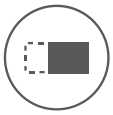
Inline capabilities

- Supports failsafe serial service chaining, parallel load balancing with spares, or combined topologies
- Customizable heartbeat (HB) support to detect and automatically recover from monitoring and security tool failures
- Multiple HB templates allow each tool to have its own unique HB
- Asymmetric hashing supports common use cases for lawful interception
- Bypass switches and Keysight Vision E10S can have different HB so multi-tier design is possible to increase overall resilience for High Availability (HA)
- Advanced load balance options include weight based LB and high-and-low watermark LB
- Inline coordinated responses include Bypass Port Pari (BPP) triggered response, and Inline Tool Resource (ITR) selective synchronization between HA primary and secondary units
- Our Active-Active Inline HA solution is the gold standard in the industry and offers the most resilient architecture to protect all kinds of failures

PacketStack capabilities

- Full, line rate intelligent packet processing. Modify every packet at line-rate using any combination of Keysight's PacketStack (AFM) capabilities
- Flexibly assign 40 Gbps total processing capacity to any port in 10 Gbps increments

Deduplication
40 Gbps capacity (10G increments)



Header Stripping
Includes VLAN, FabricPath, ETag, VNTag, GTP, MPLS, VxLAN, L2GRE, ERSPAN, supports cascaded header stripping
NEW: Generic Header Stripping added used to strip protocols headers not in above list. Examples are: L3GRE, GENEVE, JMirror, PBB-TE, LISP, VSL, OTV, PPPoE

Packet Trimming (Slicing)
To modify packet slice or retain only relevant data. Selective packet trimming for HTTPs and GQUIC traffic. Traffic can be GTP encapsulated or have no encapsulation

Timestamping
Timestamping (NTP)

Extended Burst Protection
1G burst protection

Tunneling
L2GRE based tunneling over WAN/LAN (origination and termination)

Data Masking
Protect PII and sensitive data with an offset

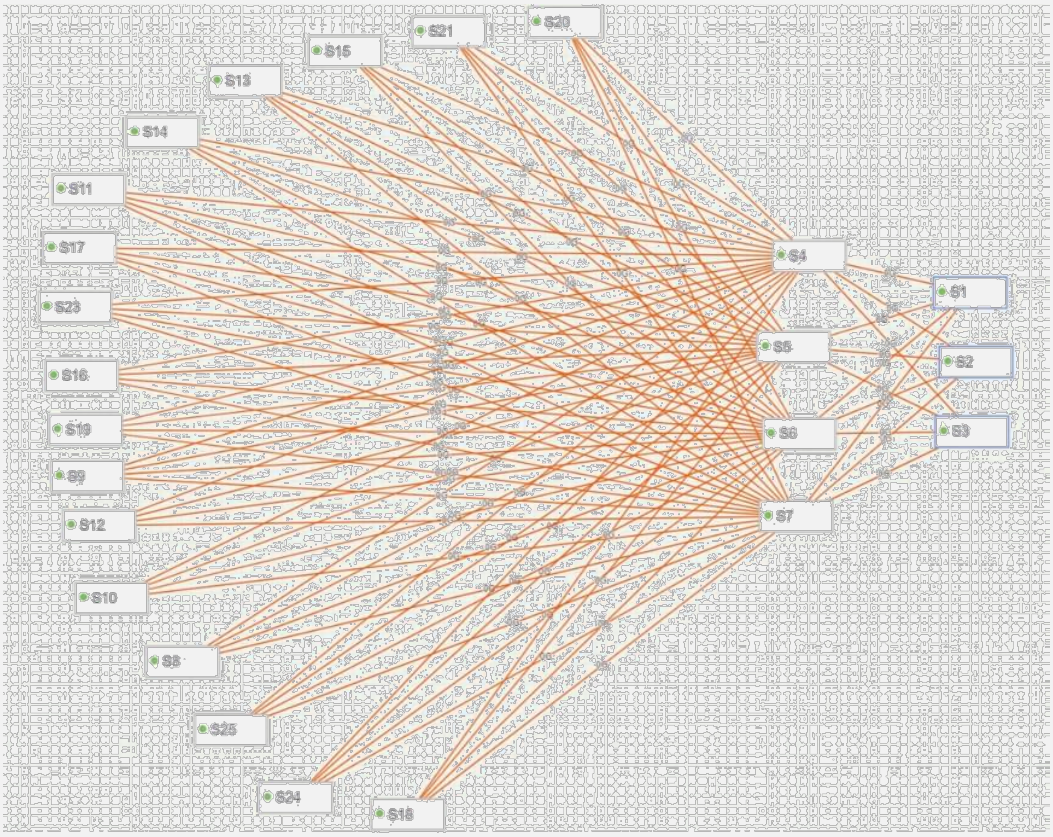
Hardware based Netflow Generation
Can produce NF records for up to 1 million tcp connections per second. Also can generate NF records for high volume traffic when used in conjunction of PacketStack "Packet Trimming" and "Add original length to trailer"

Netflow Fields Supported by E10S

- ingressInterface
- egressInterface
- flowEndReason
- flowStartMilliseconds
- flowEndMilliseconds
- packetDeltaCount
- octetDeltaCount
- protocolIdentifier
- tcpControlBits
- sourceTransportPort
- destinationTransportPort
- sourceIPv4Address (or sourceIPv6Address)
- destinationIPv4Address (or destinatioIPv6Address)

Ixia Fabric Controller (IFC) clustering

- Ixia Fabric Controller (IFC) clustering offers single pane of glass management for your network packet brokers. NPBs in a distributed environment can be managed and configured, using a single User Interface, as if one centralized visibility and security fabric
- IFC clustering supports any combination of Vision Edge 40/100/10S, Vision ONE/7300/X platforms
- Typical topologies supported include hub-and-spoke, spine-and-leaf, tree, ring, full mesh, partial mesh, or any combination of above
- User configurable number of Controller Node vs. Fabric Node to maximize resiliency
- Supports direct connection for interconnects, or GRE encapsulated interconnects (limited to Vision ONE/E10S and 7300 only) when going thru DWDM or WAN devices
- Supports both single hop and multi hop cluster topology
- Best routes are calculated based on least hop-count using Shortest Path First (SPF) algorithm
- Intelligent load balance among Equal Cost Multiple Paths (ECMP) to guarantee session integrity and avoid packet reordering
- A single IFC cluster can scale to more than 50 nodes
- Total flexibility in the number of controller nodes vs. the number of fabric nodes. Full redundancy among controller nodes
- LLDP auto discovery of interconnect links makes cluster configuration easy and error proof
- Automatic or user triggered path re-optimization to avoid failed links or nodes
- IFC cluster offers industry best resilient architecture for OOB monitoring



Vision E10S highlights

System and performance

- 1U chassis, fixed form with hot swap redundant power and fans
- Available in AC or DC models
- Capable of (2) speeds - 1G, 10G
- (48) 1G or (48) 10G SFP+ ports
- Full duplex, non-blocking, and line rate L2 forwarding of 480 Gbps

Management

- Local, RADIUS, TACACS+, LDAP and LDAP/CAC support
- Granular access control features
- Event monitoring and logging
- Syslog
- IT automation with REST API
- SNMP v1, v2 and v3 support
- Support mgmt. port IP whitelisting

Operating Specifications

Vision E10S

Power

- Redundant (2) hot swap AC power supplies
- Redundant (2) hot swap DC power supplies
- AC Input voltage: 90 to 260 VAC @ 50-60 Hz, 3 A, 260 W max (each PSU)
- DC Input voltage: -44 to -70 VDC, 6 A
- 3 fans in 2 sets, each set rated at 12 VDC, 1.2 A, 27.45-30.5 CFM)

Physical Size, Weight

- W x L x H: 17.5 W x 24.5 L x 1.75 H inches
- Weight: 30 lbs with two installed PSU
- Operating Temperature: 0 to 50 degrees Celsius
- Operating Humidity: 5% to 95% non-condensing

Vision E10s regulatory, safety

Regulatory

- CB, EN 60950, UL/CUL, CE Class A

Safety

- UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements) EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013 IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013

Emissions

- EN 55032:2012/AC:2013, Class A, CFR 47, FCC Part 15B, Canada: ICES-003: Issue 6:2016, AS/NZ CISPR 32:2015 Class A, KCC – Korea

Immunity

- EN 55024:2010, EN 61000-3-2:201, EN 61000-3-3:2013, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11.

Environmental

- The RoHS Directive 2011/65/EU, 2006/1907/EC (REACH)
- MTBF: 30C - 132,402 hours

Ordering Information

Vision E10S system	
Hardware	**Description**
SYS-E10S-16P-AC	Vision E10 System AC Chassis with fixed (48) 1G/10G; Includes license for (16) 1G/10G ports and 20 Gbps of PacketStack (1G Burst Protection, Masking, Timestamp, Packet Trimming, Add Trailer); Contains two AC power supplies and fan units. Optional ports and feature licenses available
SYS-E10S-16P-DC	Vision E10 System DC Chassis with fixed (48) 1G/10G; Includes license for (16) 1G/10G ports and 20 Gbps of PacketStack (1G Burst Protection, Masking, Timestamp, Packet Trimming, Add Trailer); Contains two DC power supplies and fan units. Optional ports and feature licenses available
SYSE10S-16PG-AC-T	IXIA TAA Compliant Vision E10S System AC Chassis with fixed (48) 1G/10G ports. Includes license for (16) 1G ONLY ports and 20 Gbps of PacketStack (991-1141)
SYSE10S-16PG-DC-T	IXIA TAA Compliant Vision E10S System DC Chassis with fixed (48) 1G/10G ports. Includes license for (16) 1G ONLY ports and 20 Gbps of PacketStack (991-1142)
Vision E10s Port licenses	
Part number	**Description**
LIC-E10S-16P	Vision E10S, Port license for an additional (16) 1G/10G ports; Requires previous or adjunct purchase of SYS-E10S-16P-AC or SYS-E10S-16P-DC
LIC-E10S-4P	Vision E10S, Port license for an additional (4) 1G/10G ports; Requires previous or adjunct purchase of SYS-E10S-16P-AC or SYS-E10S-16P-DC
Vision E10S PacketStack licenses	
Part number	**Description**
LIC-E10S-PS-10G	Vision E10S, Add 10 Gbps PacketStack (1G Burst Protection, Masking, Timestamp, Packet Trimming, Add Trailer), Max (2) license per system
LIC-E10S-DDUP	Vision E10S, Enables PacketStack Deduplication feature, licensed per system; Up to 40 Gbps supported if PacketStack is licensed at 40 Gbps
LIC-E10S-STRP	Vision E10S, Enables PacketStack Header stripping feature, licensed per system; Up to 40 Gbps is supported if PacketStack is licensed at 40 Gbps
LIC-E10S-TUNL	Vision E10S, Enables PacketStack Tunneling feature, licensed per system, up to 40 Gbps
LIC-E10S-NTFL-10G	Vision E10S, Enables up to 10 Gbps Netflow generation feature; Max (2) licenses per system
LIC-E10S-IFC	Vision E10S, Enables Ixia fabric controller (IFC) for direct connect to Vision ONE or NTO 7300/3, Vision Edge 40, Vision Edge 100; licensed per system; Require previous or adjunct purchase of port licenses to operate
LIC-E10S-INLN	Vision E10S, Enables Inline feature, licensed per system. Requires previous or adjunct purchase of port licenses to operate

Vision E10S spare	
Part number	**Description**
SYS-E10S-SPARE-AC	Vision E10S System AC Chassis with no ports or features enabled; Requires short term license to be installed to operate when required; Contains two AC power supplies and fan units. PREREQUISITES: Cold spare license LIC-E10S-SPARE
SYS-E10S-SPARE-DC	Vision E10S System DC Chassis with no ports or features enabled; Requires short term license to be installed to operate when required; Contains two DC power supplies and fan units. PREREQUISITES: Cold spare license LIC-E10S-SPARE
LIC-E10S-SPARE	Vision E10S, Cold spare system license; NOTE: Includes max configuration; Activation includes all ports, and features. Short term activation only to operate Vision E10S cold spare system (SYS-E10S-SPARE-AC or SYS-E10S-SPARE-DC). Must purchase Essential/Enterprise support.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications, or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

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