Keysight Vision Edge 100 (E100) 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.

Current reality is that compute, storage, and networks are now software defined and built by the rack and containers. And, in keeping with demand to deliver lower operating expense and offering the best-of-breed in software-defined flexibility, visibility is lost at every layer as installations get dense and traffic moves east-west within a rack and north-south between racks.

More servers, more switching layers, more virtual platform translate to more visibility blind spots.

Keysight's new Vision Edge 40 (E40) and Vision Edge 100 (E100) network packet brokers are designed to provide rack-level visibility through a solution that allows seamless integration into existing hybrid SDN architectures, offering true flexible multi-speed capability, and a comprehensive feature set for the versatility to adapt to the future, ensuring your Security Fabric's strength, all while offering a compelling total cost of ownership.

Highlights

- High density 1U platform for visibility per rack service
- Supports port speeds 10G, 25G, 40G, 50G, 100G
- Inline and OOB capable
- Ixia Fabric Controller (IFC) cluster support
- Fully featured with Keysight's robust NetStack capabilities:
  - Aggregation, replication, filtering and load balancing
  - Keysight's patented filter compiler and three stages of filtering for one-of-a-kind flexibilities in managing network and tool traffic profile
- Software defined platform that offers new features without platform change
- Priority-based filtering including inline and HA configurations
- Supports simultaneous IPv4 and IPv6 filtering
- Native L2GRE/VxLAN termination and origination

Figure 1. E100 front

Figure 2. E100 back

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Key Features

- **High density multi-speed network packet broker** that is designed for deployment in racks to aggregate traffic
- **Exceptionally feature rich** stand-alone packet broker that supports 10G to 100G networks
- **Easy-to-use web-interface** allows you to focus on security rather than configuration
- **Comprehensive wizards** that makes inline tool deployment extremely easy
- **Space efficient** 1RU design saves rack space in your data center
- **Inline and out-of-band capable** for flexibility
- **Secure serial console port** with authentication
- Support **management port** IP allow-list
- **IFC cluster** supports any-to-any topology with tools either a single hop or multiple hops away
- IFC cluster offers the **most resilient** OOB monitoring architecture
- **Native** L2GRE/VxLAN origination or termination, including conditional header stripping
- **Simultaneous** IPv4 and IPv6 filtering
- Filtering on IPv4/IPv6 **fragments**

Use Cases

- For top-of-the-rack visibility for a single site deployment with network taps and security tools
- In a leaf-spine architecture, aggregating across multiple racks in a smaller or microscale data center
- In a distributed network, Vision E100 can be used with Vision E40/7816 or Vision ONE/Vision X to form an Ixia Fabric Controller (IFC) cluster for a single pane of glass management and operation, so tools at a central location can be shared among multiple branches
- IFC cluster in spine-and-leaf topology offers the most resilient architecture that provides auto failover and active-active load balance
- Taking traffic from Cisco ACI environment or other data centers and perform conditional VxLAN header stripping with matching VNI

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 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

Native Tunnel Termination - Terminate and conditional header stripping for L2GRE and VxLAN tunnels. Support L2GRE/VxLAN origination as well.

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 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
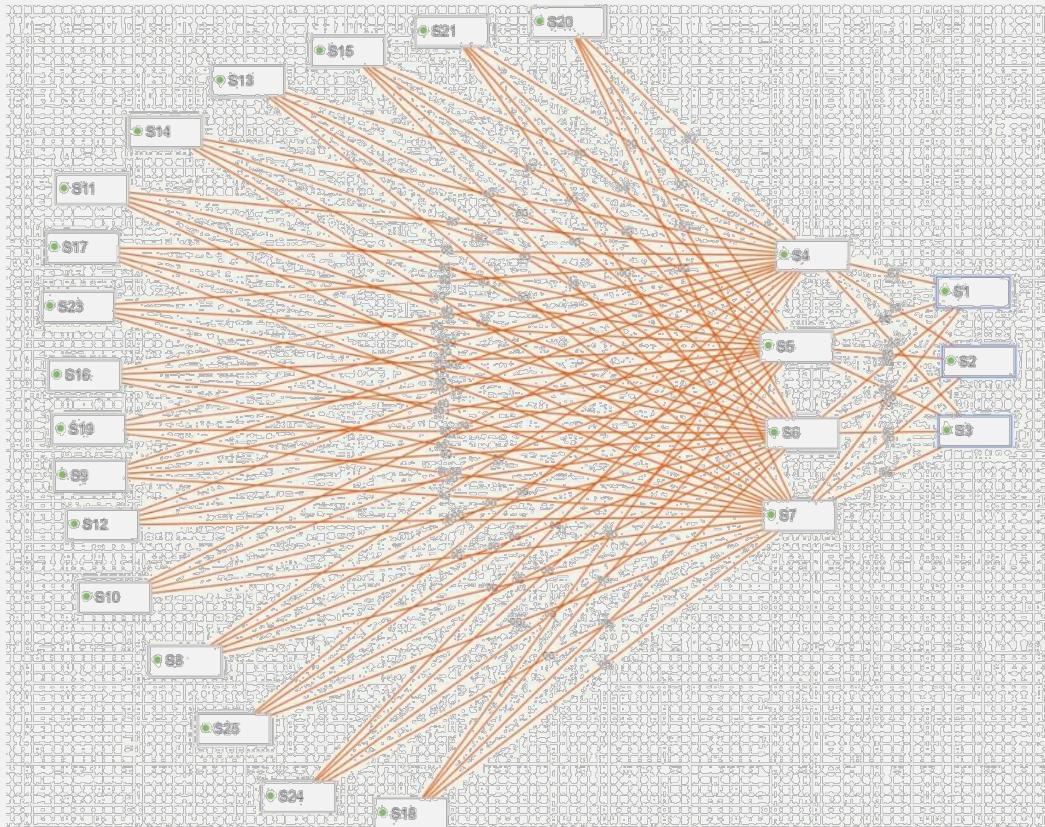
E100 highlights
• Layer 2 forwarding of 6.4 Tbps (full duplex)
• Capable of (5) speeds - 10G, 25G, 40G, 50G and 100G networks
• CLI support for Inline features and NetStack features
• Both OOB and Inline capable, including support of Inline HA
• Native L2GRE/VxLAN origination or termination, including conditional header stripping
• Support IFC clustering with other Vision platforms to offer single pane of glass management for a cluster of NPBs. IFC cluster offers the most resilient architecture for OOB monitoring
• (32) QSFP28 front panel ports
• Supports QSFP28 (for 100G) or QSFP+ (for 40G) transceivers
• Each port is capable of any of the 5 speeds, set independently
• Massive density with (128) 10G ports in 1U size
• Hot swap redundant power supplies and fans
• Available in AC and DC model
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
• Weight based load balance and LBG threshold high-and-low watermark
• Bypass switches and Keysight Vision E40 can have different HB so multi-tier design is possible to increase overall resilience for High Availability (HA)
• 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

Port Configuration and Density

System	10G	25G	40G	50G	100G
Keysight Vision E100 Max # of ports	128	128	32	64	32

Operating Specifications

Keysight Vision E100

Power
- 2 redundant hot swap AC power supplies
- 2 redundant hot swap -48V DC power supplies
- Input voltage: 90 to 264 VAC @ 50 - 60 Hz
- Input voltage: -36 to -72 VDC
- Max Power: 350 W without pluggable optics
- Typical Power: 310 W without pluggable optics

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

- Physical Size, Weight and Environmental
- WxDxH: 17.3 x 20.3 x 1.71 inches
- Weight: 23 lbs with two installed PSU
- Regulatory and compliance information will be updated and included here in the future
- Operating Temperature: 0 to 45 degrees Celsius
- Operating Humidity: 5% to 95% non-condensing
- MTBF: 25C - 208,889 hours; 45C - 90,875 hours

Ordering Information

Keysight Vision E100 System

Hardware bundle part number	Description
SYSE100-8PC-AC	Keysight Vision E100 System AC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (8) ports at 10G, 40G, 100G (991-0152)
SYSE100-8PC-DC	Keysight Vision E100 System DC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (8) ports at 10G, 40G, 100G (991-0153)
SYSE100-32P4X-AC	Keysight Vision E100 System AC Chassis with fixed (32) QSFP28 100GE port; Licensed for (32) port at 40G ports or (128) at 10G; 5-speed capable (10/25/40/50/100G) as upgrade; Optional ports and feature licenses available
SYSE100-32P4X-DC	Keysight Vision E100 System AC Chassis with fixed (32) QSFP28 100GE port; Licensed for (32) port at 40G ports or (128) at 10G; 5-speed capable (10/25/40/50/100G) as upgrade; Optional ports and feature licenses available
SYSE100-32P4X-AC-T	Ixia TAA Compliant Vision E100 System AC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (32) port at 40G ports (991-1137)
SYSE100-32P4X-DC-T	Ixia TAA Compliant Vision E100 System DC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (32) port at 40G ports (991-1138)
SYSE100-8PC-AC-T	Ixia TAA Compliant Vision E100 System AC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (8) ports 100G; multi-speed supported (991-1139)
SYSE100-8PC-DC-T	Ixia TAA Compliant Vision E100 System DC Chassis with fixed (32) QSFP28 100GE port; Includes licenses for (8) ports 100G; multi-speed supported (991-1140)

Keysight Vision E100 port and features

License bundle part number	Description
LIC-E100-ADD-4P	Keysight Vision E100, Port license for an additional (4) ports (993-0159)
LIC-E100-ADD-24P	Keysight Vision E100, Port license for an additional (24) ports (993-0158)
LIC-E100-32PC-U	Keysight Vision E100, Upgrade SYSE100-32P4X-AC/DC to 100G; Includes port license for all (32) ports (993-0156)
LIC-E100-INLN	Keysight Vision E100 enables Inline feature; licensed per system (993-0162)
LIC-E100-IFC	Keysight Vision E100 license, enables Ixia Fabric Controller (IFC) Clustering for direct connection to other Vision devices supporting IFC Clustering (E100, E40, 7816, Vision ONE/X, 7300) (993-0150)
LIC-E100-TUNL	Keysight Vision E100, Enables NetStack tunneling feature, one per system (993-0149)

Keysight Vision E100 spare and modules

Hardware part number	Description
SYSE100-SPR-AC	Keysight Vision E100 System AC Chassis with no ports or features enabled (991-0160)
SYSE100-SPR-DC	Keysight Vision E100 System DC Chassis with no ports or features enabled (991-0161)
LIC-E100-SPR	Keysight Vision E100, Cold spare system license; NOTE: Includes max configuration (993-0154)
ME100-ACPS	Keysight Vision E100 (1) AC power module, for the Vision E100 chassis (992-0080)
ME100-DCPS	Keysight Vision E100 System, (1) DC power module, for the Vision E100 chassis (992-0081)
ME100-FAN-ASSY	Keysight Vision E100, (1) FAN module, for the Vision E100 chassis (992-0085)

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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