



Network Visibility

Network Packet Broker Comparison Table

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| Key Visibility Attributes | | | | | | | | | | | |
| Smart, drag-and-Drop, Intuitive GUI | • | • | • | • ¹ | • | • | • | • | • | • | • |
| Zero-Packet Loss Architecture | • | • | • | | • | • | • | • | • | • | • |
| Overlapping Filter Rules Automatically Handled by Visibility Engine | • | • | • | | • | • | • | • | • | • ² | • |
| System Specifications | | | | | | | | | | | |
| System Height (RU) | 1 | 1 | 1 | 1 | 2 | 1 | 3 | 7 | † | 2 | 1 |
| AC Redundant Power Supply (Hot Swap) | • | • | • | • | • | • | • | • | • | • | • |
| DC Redundant Power Supply (Hot Swap) | • | • | • | • | • | • | • | • | • | • | • |

† Switch Dependent

- 1. Centralized
- 2. Yes (2 stage)

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7616 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| System capacity | | | | | | | | | | | |
| Max Backplane Capacity (Gbps) | 720 | 3200 | 480 | 12 | 6400 | 640 | 6400 | 3840 | † | 320 | 640 |
| Max Number of 1 Gb Ports | 48 | 0 | 48 | 10 | 0 | 64 | 0 | 288 | † | 0 | 64 |
| Max Number of 10 Gb Ports | 72 | 128 | 48 | 4 | 128 | 64 | 108 | 384 | † | 64 | 64 |
| Max Number of 25 Gb Ports | 0 | 128 | 0 | 0 | 108 | 0 | 108 | 288 | † | 0 | 0 |
| Max Number of 40 Gb Ports | 18 | 32 | 0 | 0 | 64 | 16 | 76 | 96 | † | 0 | 16 |
| Max Number of 50 Gb Ports | 0 | 64 | 0 | 0 | 128 | 0 | 108 | 144 | † | 0 | 0 |
| Max Number of 100 Gb Ports | 0 | 32 | 0 | 0 | 64 | 0 | 60 | 72 | † | 0 | 0 |
| Module type | | | | | | | | | | | |
| 1 Gb Copper Port / Transceiver | • | | • | • | | | | • | † ¹ | | |
| 1 Gb SFP Port | • | | • | | | | | • | † ¹ | | • |
| 10 Gb Copper Transceiver | • | | • | • | | | | | † ¹ | | |
| 10 Gb SFP+ Port | • | • | • | • | | | • | • | † ¹ | • | • |
| 25 Gb SFP28 Port • 100 Gb QSFP28 port can be converted into 4x10G, 4x25G, 1x40G, 2x50G and 1x100G | | • | | | • | • | • | • | † ¹ | | |
| 50 Gb QSPF28 Port • 100 Gb QSFP28 port can be converted into 4x10G, 4x25G, 1x40G, 2x50G and 1x100G | | • | | | • | • | • | • | † ¹ | | |
| 40 Gb QSFP+ Port | • | • | | | • | • | • | • | † ¹ | | • |
| Cisco BIDI | • | • | | | • | • | • | • | † ¹ | | • |
| 100 Gb CFP | | | | | • | | | • | † ¹ | | |
| 100 Gb QSFP28 • 100 Gb QSFP28 port can be converted into 4x10G, 4x25G, 1x40G, 2x50G and 1x100G | | • | | | • | • | • | • | † ¹ | | |

† Switch Dependent

1. Vision Edge OS supports Edgecore 5812 and Edgecore 7712 ONLY.

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|--|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| Inline Security | | | | | | | | | | | |
| Supports inline deployment including full feature set for HA | • | • | • | | | • | • | | | | |
| Inline configuration on web console | • | • | • | | | • | • | | | | |
| Load balancing with spare | • | • | • | | | • | • | | | | |
| Serial service chaining | • | • | • | | | • | • | | | | |
| Customizable heart beat | • | • | • | | | • | • | | | | |
| Link fault detection (LFD) | • | • | • | | | • | • | | | | |
| Negative heart beat | • | • | • | | | • | • | | | | |
| Tool mandatory vs. optional (fail-closed vs. fail-open) | • | • | • | | | • | • | | | | |
| Multiple network links tool sharing (VLAN port tag) | • | • | • | | | • | • | | | | |
| Multiple network links tool sharing (MAC address) | | | | | | | | | | | |
| VLAN Translation (VSET) for inline | • | • | • | | | • | • | | | | |
| Replacement during filtering (VSET) for out-of-band | • | • | • | | • | • | • | • | | | |
| HA active-active | • | • | • | | | • | • | | | | |
| HA active-standby | | | | | | | | | | | |
| Support inline and out-of-band simultaneously | • | • | • | | | • | • | | | | |
| Asymmetric load balancing (client/host affinity) | • | • | • | | | • | • | | | | |
| Load balance based on port speeds or weight | • | • | • | | | • | • | | | | |
| Support for Active SSL transparent proxy, including tools that are either actively inline or passively out of band | | | | | | • | • | | | | |
| MPLS inner IP manipulation for inline | • | • | • | | • | • | • | | | | |

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| Deployment Options | | | | | | | | | | | |
| Simplex (Double Your Ports) | • | | | | | • | | • | † | | • |
| Fan-In | • | | | | | • | | | † | | |
| Fan-Out | • | • | | | • | • | • | • | † ¹ | | • |
| Management | | | | | | | | | | | |
| Cluster Management through Ixia Fabric Controller (IFC) | • | • | • | | • | • | • | • | | | • |
| IFC Fabric Direct Connect | • | • | • | | • | • | • | • | | | |
| IFC Fabric GRE | | | | | | • | | • | | | |
| IFC CM (formerly Indigo Pro) for OAM&P (systems mgmt.) | • | • | • | | • | • | | • | | • | |
| RESTful API | • | • | • | | • | • | • | • | • | • | • |
| Role Based User Accounts | • | • | • | • | • | • | • | • | • | • | • |
| TACACS+, RADIUS Authentication | • | • | • | | • | • | • | • | • | • | • |
| Syslog | • | • | • | | • | • | • | • | • | • | • |
| SNMP Traps | • | • | • | | • | • | • | • | • | • | • |
| Strong Password | • | • | • | • | • | • | • | • | • | • | • |
| Event monitoring and Alarm Generation | • | • | • | | • | • | • | • | • | • | • |
| Link Status Trap | • | • | • | | • | • | • | • | • | • | • |
| Packet Counters and Statistics | • | • | • | • | • | • | • | • | • | • | • |
| WebUI (HTML5) for System Access | • | • | • | • | • | • | • | | • | | • |
| Compliance | | | | | | | | | | | |
| FIPS 140-2 validation | • | • | • | | • | • | • | • | • | | • |
| Common Criteria | | | | | | • | | • | | | |
| DoD UCAPL | | | | | | • | | • | | | |
| NEBS Certified | | | | | | • | • | 7303 | | • | |

† Switch Dependent

1. Vision Edge OS supports Edgecore 5812 and Edgecore 7712 ONLY.

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|--|----------------|-----------------|-----------------|----------------|-----------|----------------|----------|-----------------|----------------|-----------------------------|-------------|
| Netstack | | | | | | | | | | | |
| Three Stages of Filtering - Filter rules may be applied to ingress, dynamic, and/ or egress traffic | • | • | • | • | • | • | • | • | • | | • |
| • Filtering layer 2, layer 3 and layer 4 fields plus custom and pre-defined offset filters for GTP, MPLS, and VxLAN | • | • | • | • ¹ | • | • | • | • | • | • ² | • |
| • Counter Comparison - Ingress, Dynamic, Egress | • | • | • | | • | • | • | • | • | | • |
| • MPLS/GTP Dynamic Filtering | • | • | • | | • | • | • | • | • | | • |
| • VxLAN VNI/Tunnel IP Dynamic Filtering | • | • | • | | | • | • | • | • | | • |
| • Max # of General & Custom Rules | 16k | 4k | 16k | NA | 4k | 4k | 4k | 4k ³ | † | NA | 4k |
| • Max # of Source IP Rules (unicast) | 8k | 8k | 8k | NA | 8k | 8k | 8k | 1k ³ | † | NA | 8k |
| • Max # of Destination IP Rules (unicast) | 8k | 8k | 8k | NA | 8k | 8k | 8k | 1k ³ | † | NA | 8k |
| • Max # of Multicast IP Rules (No wildcard / masking capability) | 3k | 3k | 3k | NA | 3k | 3k | 3k | 3k | † | 3k | 3k |
| Dynamic Filter Compiler / Intersection mode provides patented technology that automatically resolves filter rules to provide self-maintaining visibility | • | • | • | | • | • | • | • | • | • ⁴ | • |
| Priority Based Filtering (PBF) provides ACL-like logic when filtering traffic | • ⁵ | • ⁶ | • ⁵ | | | • ⁵ | • | | | | |

† Switch Dependent

1. No custom
2. Deny By on output
3. Per blade
4. Yes (2 stage)
5. IPv4 Only or IPv6 Only
6. IPv4 Only

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-----------------|----------------|-----------------------------|-------------|
| VLAN Tagging - Track packets easily by adding VLAN IDs to packets based on the source (ingress) port and remove them as they leave a packet broker via exit (egress) ports. | • | • | • | | • | • | • | • | • | • | • |
| • VLAN Tagging per Port | • | • | • | | • | • | • | • | • | • | • |
| • VLAN Tagging per Dynamic Filter | • | • | • | | | • | • | • | • | | • |
| • VLAN Un-tagging - per Port | • | • | • | | • | • | • | • | | | • |
| • VLAN Un-tagging - Conditional | • | • | • | | • | • | • | • | | | • |
| Aggregation - Consolidate incoming traffic to optimize port usage and simplify filtering | • | • | • | • | • | • | • | • | • | | • |
| • 1 : 1 | • | • | • | • | • | • | • | • | • | | • |
| • 1 : Many | • | • | • | • | • | • | • | • | • | | • |
| • Many : 1 | • | • | • | • | • | • | • | • | • | | • |
| • Many : Many | • | • | • | • | • | • | • | • | • | | • |
| Replication - Replicate traffic to multiple dynamic filters (ingress) or to multiple tools (egress) | • | • | • | • | • | • | • | • | • | | • |
| • Load Balancing - Distributes traffic across tool ports | • | • | • | | • | • | • | • | • | | • |
| • Load balancing Standard (3 Tuple & 5 Tuple) | • | • | • | | • | • | • | • | | | • |
| • Load Balance Tunneled IP (MPLS Based) | • | • | • | | • | • | • | • | | | • |
| • Maximum Ports per Load Balancing Group | 72 | 128 | 48 | | 128 | 64 | 108 | 64 ¹ | † | 32 | 64 |

† Switch Dependent

1. Per card

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|--|----------------|-----------------|-----------------|----------------|-----------|------------|----------|----------------|----------------|-----------------------------|-------------|
| LLDP Auto Discovery – Automatically discover neighbors on network and tools ports and interconnect | • | • | • | | • | • | | • | | | |
| RBAC – Role based Access Control | | | | | | | | | | | |
| • RBAC Inline | • | • | • | | • | • | | | | | |
| • RBAC Out-of-Band / Passive | • | • | • | • | • | • | • | • | • | • | • |
| Command Line Interface Management – CLI access to NetStack and Inline features | • | • | | | • | • | • | | | | |
| Packetstack | | | | | | | | | | | |
| Deduplication - Remove repeat data to deliver a unique stream to your tools so they can operate at their peak. | | | • | • | | • | • | • | | | • |
| Header Stripping - Detect and remove headers so data can be easily analyzed by security and monitoring (IPS, IDS, NGFW, etc.) tools that do not support such protocols | | | • | • | | • | • | • | | | |
| Generic Header Stripping (GHS) | | | • | | | • | • | • ¹ | | | |
| • VLAN | | | • | • | | • | • | • | | | |
| • VxLAN - Standard UDP Port # | | | • | | | • | • | • | | | |
| • VxLAN - Cisco ACI UDP Port # | | | • | | | • | • | • | | | |
| • MPLS (L2VPN/VPLS with or without control word) | | | • | • | | • | • | • | | | |
| • Cisco Fabric Path | | | • | | • | • | • | • | | | |
| • RSPAN / ERSPAN | | | • | • | | • | • | • | | | |
| • GTP (GTP-U) | | | • | | | • | • | • | | | |

1. Via multi-speed card

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| • L2GRE/NVGRE | | | • | | | • | • | • | | | |
| • 802.1 BR | | | • | | | • | • | • | | | |
| • VNTag | | | • | | | • | • | • | | | |
| • Mac-in-Mac/PBB | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • L3GRE | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • L2TP | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • JMirror | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • GENEVE | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • PPPOE | | | • 1 | | | • 1 | • 1 | • | | | |
| • LISP | | | • 1 | | | • 1 | • | • | | | |
| • Cisco VSL (Virtual Switch Link) | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| • Cisco OTV (MPLS over GRE) | | | • 1 | | | • 1 | • 1 | • 1 | | | |
| Packet Trimming - Send only what security and monitoring tools need by cutting out the unnecessary information and reducing packet size | | | • | • | | • | • | • | | • | |
| • HTTPs/GQUIC Slicing | | | • | | | • | • | • 2 | | | |
| Timestamping - Insert high-accuracy timestamps into every packet at ingress | | | • | | | • | • | • | | • | • 3 |
| • NTP | | | • | | | • | • | • | | • | • |
| • PTP | | | | | | • | • | • | | | • |
| • GPS | | | | | | | | | | | |
| Data Masking - Hide or overwrite sensitive or personally identifiable information (PII) before providing the data to analysis tools | | | • | | | • | • | • | | | |
| GRE Tunneling - Encapsulate and de-encapsulate data. Origination and termination features | | | | | | | | | | | |

1. Via GHS.

2. Via multi-speed card.

3. Included with base license.

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|--------------------------|-------------|----------------|-----------------------------|-------------|
| • Tunnel Origination: L2GRE | | | • | • | | • | | • 1 | | • | |
| • Tunnel Origination: ERSPAN | | | | | | | | | | | |
| • Load Balancing on L2GRE Tunnel Group | | | | | | | | • | | | |
| • Tunnel Termination: L2GRE | | | • | • | | • | • | • | | | |
| • Tunnel Termination: ERSPAN | | | • | | | • | • | • | | | |
| NetFlow - generate NetFlow for tools without burdening network devices | | | • 2 | • 3 | | • 4 | • 4 | • 4 | | | |
| Burst Protection - allows monitoring tools to see everything without dropped packets when traffic exceeds tool bandwidth | | | 1G | | | 1G | 10G 25G 40G 50G | 1G | | | |
| Source Port Labeling | | | | | | • | | | | | |
| SecureStack | | | | | | | | | | | |
| Decryption (Out-of-Band) - Get greater visibility by decrypting traffic to detect such malware, prevent data loss, monitor applications and more | | | | | | • | • | • | | | • |
| Decryption (Inline) - Decrypt and encrypt traffic as an inline transparent proxy, including the use of ephemeral keys and support for TLS 1.3. Includes host categorization as an optional feature. | | | | | | • | • | | | | |
| Data Masking Plus - Mask sensitive data such as a credit cards, SSN's and email addresses using pre-defined patterns | | | | | | • | • | • | | | • |

1. AFM16 Only
2. Hardware
3. AppStack
4. Network Processor

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTPSessionController 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|------------------------------|-------------|
| Threat Intelligence – Recognize malware, botnet, exploits, hijacked IPs and phishing activity | | | | | | • | • | • | | | |
| Appstack | | | | | | | | | | | |
| Application Identification - Define traffic filters to view or forward specific traffic patterns that you want to monitor, based on application type, operating system, transport protocol, and other criteria. | | | | • | | • | • | • | | | • |
| Geolocation and tagging - Separate traffic by client or server location | | | | • | | • | • | • | | | • |
| Optional Regex | | | | | | • | • | • | | | • |
| IxFlow Generation - In addition to packet forwarding NetFlow information, optionally enhanced with application layer data (IxFlow), can be forwarded for matching traffic | | | | • | | • | • | • | | | • |
| Packet Capture - Save traffic matching any filter as a pcap-format capture file with a user defined size | | | | • | | • | • | • | | | • |
| AppStack Dashboard - Displays comprehensive network traffic information that provide real-time network traffic information. | | | | • | | • | • | • | | | • |
| Free AppStack Dashboard – discover the benefits of AppStack with access to the AppStack Dashboard without the need of a license. | | | | • | | • | • | | | | |
| ATI Subscription - Provides updates to application signature database, vital for AppStack to stay updated with emerging applications. | | | | | | • | • | • | | | • |

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTPSession Controller 7433 | TradeVision |
|---|----------------|-----------------|-----------------|----------------|-----------|------------|-------------|-------------|----------------|-------------------------------|-------------|
| Mobilestack | | | | | | | | | | | |
| SIP / RTP Correlation – Correlate data and control planes of your users VoIP traffic so probes don't have too, making them more efficient and effective | | | | | | • | | | | | |
| SIP / RTP Load-Balancing – Scale monitoring infrastructure by load- balancing VoIP traffic across multiple probes | | | | | | • | | | | | |
| GTP Correlation - Improve performance of QoS and QoE monitoring probes by offloading GTP session correlation | | | | | | | • | | | • | |
| 3GPP Support | | | | | | | • | | | • | |
| 4G LTE, 3G and 2G support | | | | | | | • | | | • | |
| Max Number of GTP Sessions | | | | | | | 512 million | | | 54 million | |
| GTP Load-balancing - Scale monitoring infrastructure by load-balancing GTP data across multiple probes | | | | | | | • | • | | • | |
| Subscriber filtering - Selectively send mobile network traffic for subscribers of interest | | | | | | • 1 | • | | | • | |
| Subscriber sampling - Reduce costs by sending only a certain percentage of the subscriber traffic to the monitoring infrastructure | | | | | | • 1 | • | | | • | |
| Subscriber whitelisting – Ensure specific customers are always included in the session sample sent to probes for monitoring. | | | | | | • 1 | • | | | • | |
| Packet core filtering- selectively sending traffic to probes based on traffic types: RAT (2G, 3G, 4G), Bearer QoS class identification (QCI), and Access Point Name (APN) | | | | | | | • | | | • | |

1. SIP / RTP

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|--|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| Tradestack | | | | | | | | | | | |
| Gap Detection - Quickly detect gaps in multicast data to recognize market feed network problems with alerts to other tools and systems. | | | | | | | | | | | • |
| Feed and Channel Health - Simplify feed troubleshooting by monitoring channel performance and alerts | | | | | | | | | | | • |
| Traffic statistics - Improve capacity planning by streaming metadata off TradeVision to analysis tools where network engineers can build up data on historical traffic patterns. | | | | | | | | | | | • |
| Microburst Detection - Detect and remedy “bursty” network traffic, where small bursts can cascade into dropped data. | | | | | | | | | | | • |
| Auto Feed Updates – automatic updates of market feeds and channels | | | | | | | | | | | • |
| Simple Feed Management – feed channel configurations are auto populated | | | | | | | | | | | • |
| One Way Latency | | | | | | | | | | | • |
| Two Point Latency | | | | | | | | | | | • |
| Synthetic Mesh Latency | | | | | | | | | | | • |
| Real Time Dashboards | | | | | | | | | | | • |
| TradeStream | | | | | | | | | | | • |
| IP Burst Detection | | | | | | | | | | | • 1 |
| Feed Channel Bandwidth Utilization | | | | | | | | | | | • 1 |

1. Requires 5.4

| | Vision Edge 40 | Vision Edge 100 | Vision Edge 10S | Vision Edge 1S | VEOS 7816 | Vision ONE | Vision X | Vision 7300 | Vision Edge OS | GTP Session Controller 7433 | TradeVision |
|--|----------------|-----------------|-----------------|----------------|-----------|------------|----------|-------------|----------------|-----------------------------|-------------|
| Active Monitoring | | | | | | | | | | | |
| Hawkeye Endpoint – Able to register as active monitoring endpoint and generate traffic | | | | • | | | | | | | |
| Node to node traffic – can generate traffic toward other Hawkeye endpoints for network heartbeats, voice, video, skype for business, throughput and speed test (TCP and UDP) | | | | • | | | | | | | |
| Real service traffic – can validate access to http/https service on premise or on cloud, validate DNS service, send ICMP, UDP and TCP to echo ports on the network | | | | • | | | | | | | |
| Path discovery – can discover and map out network topology to reach remote destination, on-net of off-net | | | | • | | | | | | | |
| 10G interface - active monitoring | | | | • | | | | | | | |
| 1G interface – active monitoring | | | | • | | | | | | | |

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

