

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 Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
Key Visibility Attributes											
Smart, drag-and-Drop, Intuitive GUI	•	•	•	• ¹	•	•	•	•	•	•	•
Line Rate forwarding, 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	1	†	2	1
AC Redundant Power Supply (Hot Swap)	•	•	•	•	•	•	•	•	•	•	•
DC Redundant Power Supply (Hot Swap)	•	•	•	•	•	•	•	•	•	•	•

† Switch Dependent

1. Centralized
2. Yes (2 stage)

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System capacity											
Max Backplane Capacity (Gbps)	720	3200	480	12	6400	640	6400	9200	†	320	640
Max Number of 1 Gb Ports	48	0	48	10	0	64	0	NA	†	0	64
Max Number of 10 Gb Ports	72	128	48	4	128	64	108	152	†	64	64
Max Number of 25 Gb Ports	0	128	0	0	128	0	108	152	†	0	0
Max Number of 40 Gb Ports	18	32	0	0	64	16	76	32	†	0	16
Max Number of 50 Gb Ports	0	64	0	0	128	0	108	152	†	0	0
Max Number of 100 Gb Ports	0	32	0	0	64	0	60	64	†	0	0
Module type											
1 Gb Copper SFP Transceiver	•		•	•				NA	† ¹	•	•
1 Gb SFP Port	•		•	•				NA	† 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		
Native 25G SFP28 Support		Via adaptor			Via adaptor		Via adaptor				
Native 50G SFP56 Support								•			
40 Gb QSFP+ Port	•	•			•	•	•	•	† ¹		•
Cisco BIDI	•	•			•	•	•	•	† 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 Edge 400S	Vision Edge OS	GTP SessionController 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 heartbeat	•	•	•		•	•	•				
Link fault detection (LFD)	•	•	•		•	•	•				
Negative heartbeat	•	•	•		•	•	•				
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 during filtering (VSET) for inline	•	•	•		•	•	•				
HA active-active	•	•	•		•	•	•				
Support inline and out-of-band simultaneously	•	•	•		•	•	•				
Asymmetric load balancing (client/host affinity)	•	•	•		•	•	•				
Inline 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 filtering for inline	•	•	•		•	•	•				

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Deployment Options											
Simplex (Double Your Ports)	•		•			•	•		†		•
Fan-In	•					•			†		
Fan-Out	•	•			•	•	•		† ¹		•
Force Link Up (Tx ignores Rx)	•	•			•		•				
Out-of-Band weight based LB		•					•	•			
Filter memory optimization vis exact match table		•			•		•				
Per LBG load balance								•			
Random load balance								•			
Tunneled IP load balance								•			
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.)	•	•	•		•	•				•	
KVO support								•			
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	•	•	•		•	•	•		•		•

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DoD UCAPL	•	•	•		•	•	•		•		•
NEBS Certified						•	•	•		•	
TAA	•	•	•		•	•	•	•	•		•

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	Vision Edge 40	Vision Edge 100	Vision Edge 10S	Vision Edge 1S	VEOS 7816	Vision ONE	Vision X	Vision Edge 400S	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	8k	†	NA	4k
• Max # of Source IP Rules (unicast)	8k	8k	8k	NA	8k	8k	8k	8k	†	NA	8k
• Max # of Destination IP Rules (unicast)	8k	8k	8k	NA	8k	8k	8k	8k	†	NA	8k
• Max # of Multicast IP Rules (No wildcard / masking capability)	3k	3k	3k	NA	3k	3k	3k	8k	†	3k	3k

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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. Usually used for Inline	• 5	• 5	• 5		• 5	• 5	• 5	•			

† Switch Dependent

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

	Vision Edge 40	Vision Edge 100	Vision Edge 10S	Vision Edge 1S	VEOS 7816	Vision ONE	Vision X	Vision Edge 400S	Vision Edge OS	GTP SessionController 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	•	•	•	•	•	•	•	•	•		•

	Vision Edge 40	Vision Edge 100	Vision Edge 10S	Vision Edge 1S	VEOS 7816	Vision ONE	Vision X	Vision Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
• 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	152	†	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 Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
LLDP Auto Discovery – Automatically discover neighbors on network and tools ports and interconnect	•	•	•		•	•	•				
OOB weight based LB		•					•	•			
RBAC – Role based Access Control											
• RBAC Inline	•	•	•		•	•					
• RBAC Out-of-Band / Passive	•	•	•	•	•	•	•	•	•	•	•
Command Line Interface Management – CLI access to NetStack and Inline features	•	•			•	•	•				
Packetstack											

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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)			•			•	•				
• VLAN			•			•	•	•			
• VxLAN - Standard UDP Port #			•			•	•	•			
• VxLAN - Cisco ACI UDP Port #			•			•	•	•			
• MPLS (L2VPN/VPLS with or without control word)			•			•	•	•			
• MPLS over GRE or UDP								•			
• 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 Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
• L2GRE/NVGRE			•			•	•	•			
• 802.1 BR			•			•	•	•			
• VNTag			•			•	•	•			
• Mac-in-Mac/PBB			• 1			• 1	• 1	•			
• L3GRE			• 1			• 1	• 1	•			
• L2TP			• 1			• 1	• 1	•			

	Vision Edge 40	Vision Edge 100	Vision Edge 10S	Vision Edge 1S	VEOS 7816	Vision ONE	Vision X	Vision Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
• JMirror			• 1			• 1	• 1	•			
• GENEVE			• 1			• 1	• 1	•			
• PPPOE			• 1			• 1	• 1	•			
• LISP			• 1			• 1	•	•			
• Cisco VSL (Virtual Switch Link)			• 1			• 1	• 1	•			
• Cisco OTV (MPLS over GRE)			• 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			•			•	•				
Timestamping - Insert high-accuracy timestamps into every packet at ingress			•			•	•	•		•	• 3
• NTP			•			•	•	•		•	•
• PTP						•	•	•			•
• 1PPS+ToD								•			
Data Masking - Hide or overwrite sensitive or personally identifiable information (PII) before providing the data to analysis tools			•			•	•	•			
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 Edge 400S	Vision Edge OS	GTP Session Controller 7433	TradeVision
• PacketStack Tunnel Origination: L2GRE			•			•	•	•		•	

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• NetStack Tunnel Origination: L2GRE and VxLAN	•	•			•		•	•			
• PacketStack Tunnel Termination: all protocols			•			•	•	•			
• NetStack Tunnel Termination: L2GRE and VxLAN (requires GRE KEY and VxLAN VNI)	•	•			•		•	•			
NetFlow - generate NetFlow for tools without burdening network devices			• 2	• 3		• 4	• 4				
Burst Protection - allows monitoring tools to see everything without dropped packets when traffic exceeds tool bandwidth			1G			1G	10G 25G 40G 50G				
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 Edge 400S	Vision Edge OS	GTP Session Controller 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.						•	•				•

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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

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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 Edge 400S	Vision Edge OS	GTP SessionController 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				•							

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