Stacking 9200 Series EndaceProbes for Unprecedented Throughput and Capacity

Create a single logical probe with multi-petabyte storage depth capable of monitoring high-speed links of 100Gbps and beyond.

With built-in compression, and patented Smart Truncation™, the 9200 Series EndaceProbe™ can record more than a petabyte of network traffic at a sustained 40Gbps in a single 4RU appliance. While this is more than enough for many deployment scenarios, in some cases greater storage depth and/or performance is needed to ensure a sufficient number of weeks or months of network history is always maintained. This solution brief describes how multiple 9200 Series EndaceProbes™ can be "stacked" to deliver increased storage and throughput.

Stacking EndaceProbes

The EndaceProbe Analytics Platform architecture is horizontally scalable. Each additional EndaceProbe adds to the total capacity of the EndaceFabric as a whole. EndaceProbes can be distributed across the network for broad visibility, as well as "stacked" at a single site to increase the storage depth or to capture from links of 100GbE and beyond. Stacking also increases the hosting capacity available for deploying analytics applications in Application Dock, the EndaceProbe's built-in VM hosting environment.

A stack of EndaceProbes becomes a single logical EndaceProbe of higher capacity with single-pane-of-glass UI. EndaceCMS™ provides centralized administration of all the EndaceProbes in the stack, and InvestigationManager™ provides centralized search, visualization, and analysis.

For maximum availability, a Network Packet Broker (NPB) is integral to the stack. The NPB receives network traffic through a TAP or SPAN port of up to 100GbE and load balances the traffic to two or more EndaceProbes, each connected to the NPB via 10GbE or 40GbE interfaces.
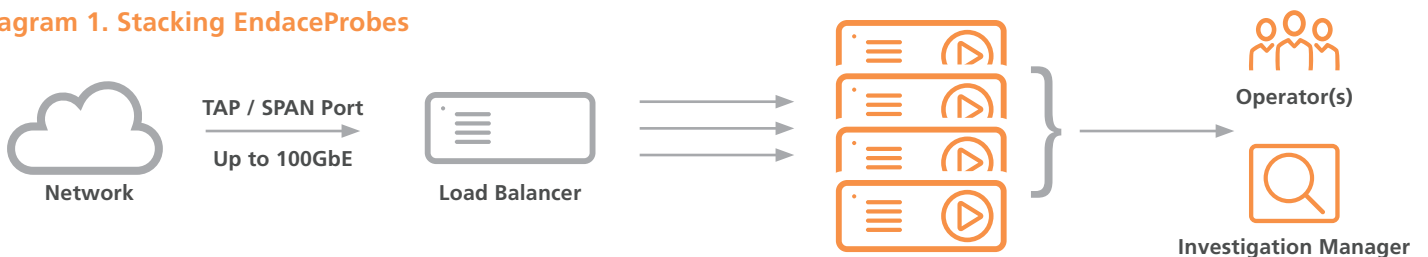
BENEFITS

- Scale to any required storage depth to store a month or more of network history
- Breakthrough density and price-per-petabyte make a month's storage more affordable than ever
- Capture every packet on a 100Gbps Ethernet link at full line rate, with 100% accuracy
- Perform investigations and searches across a stack of EndaceProbes from a single pane of glass
- Huge increases in productivity due to amazingly fast searches. Search hundreds of petabytes for that needle in the haystack in less than a minute
- Ultra-high availability, hitless software upgrades with N+1 fault tolerance.

Game-Changing Density and Performance

The EndaceProbe's horizontally scalable architecture allows for…

- **Extreme scalability.** Deploy an EndaceFabric, consisting of thousands of EndaceProbes and stacks, that provides pervasive coverage across your entire network. The scalable EndaceFabric delivers unparalleled sustained and peak capture rates with petabytes of packet storage capacity.

- **Breakthrough density and price** per petabyte, e.g. 5 PB of packet storage (2.2PB native) in 21 RU of rack space, making a month's storage more affordable than ever.

- **Ultra-high availability.** In addition to the fault tolerance designed into individual EndaceProbes, the architecture allows for deployments with N+1 redundancy across an individual stack. This allows a stack to continue to function (with reduced capacity) even if there is a problem that takes an entire EndaceProbe offline.

- **Hitless software upgrades.** Eliminate downtime during maintenance and software upgrades, due to the N+1 redundant architecture.

- **Amazingly fast search.** A single needle in a haystack search for specific packets across a petabyte of packet data on a single 9200 Series EndaceProbe takes seconds. InvestigationManager coordinates searches across many EndaceProbes simultaneously, which means the same search across hundreds of EndaceProbes and hundreds of petabytes of packet data can take less than a minute. Forget having to get 'back in the zone', after having waited hours for a search, only to find more searches are needed. Fast search is a game changer for productivity.

Diagram 1. Stacking EndaceProbes

TAP / SPAN Port
Up to 100GbE

Network

Load Balancer

Operator(s)

Investigation Manager

Example Configurations

	1 x 9200 Series	3 x 9200 Series	5 x 9200 Series
Storage size	Native: 432 TB Packets[1]: Up to 1 PB	Native: 1.3 PB Packets[1]: up to 3 PB	Native: 2.1 PB Packets[1]: up to 5 PB
Storage depth[1] at specified average throughputs	At 5 Gbps: Up to 18 days At 10 Gbps: Up to 9 days At 40 Gbps: Up to 2.2 days	At 5 Gbps: Up to 53 days At 10 Gbps: Up to 27 days At 40 Gbps: Up to 7 days At 50Gbps: Up to 5.3 days At 100Gbps: Up to 2.7 days	At 5 Gbps: Up to 89 days At 10 Gbps: Up to 45 days At 40 Gbps: Up to 11 days At 50Gbps: Up to 9 days At 100Gbps: Up to 4.4 days
Write to disk	40Gbs sustained >40Gbs compressed 80Gbps burst for >300ms	120Gbps sustained >120Gbps compressed 240Gbps burst for >300ms	200Gbps sustained >200Gbps compressed 400Gbps burst for >300ms
Maximum flow creation rate	100k flows per second	300k flows per second	500k flows per second
Maximum concurrent flows	1 million	3 million	5 million
Number of application dock instances	x 12	x 36	x 60
Search performance	Less than 1 minute to search the entire storage of one EndaceProbe [2]	Less than 1 minute to search the entire storage of multiple EndaceProbes [2]	
Example Stack Configurations			

[1] Effective packet storage accounting for RAID and metadata overheads and assuming a 4.5:1 ratio for compression and Smart Truncation of packet data.

[2] To find a single needle in the haystack across the entire time range, with 100% of the packet storage on the EndaceProbe(s) consumed.

Conclusion

Due to the horizontally scalable architecture of the EndaceProbe™ Analytics Platform, multiple EndaceProbes can be stacked to form logical EndaceProbes of almost unlimited storage depth with support for full, line-rate capture on 100GbE links and a single pane-of-glass for investigations.

With the introduction of the 9200 Series, Endace has set new industry benchmarks for storage density, performance and price per petabyte making it cost-effective to extend packet storage depth to weeks or months rather than hours or days.

For more information on the Endace portfolio of products, visit: endace.com/products

For further information, email: info@endace.com

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