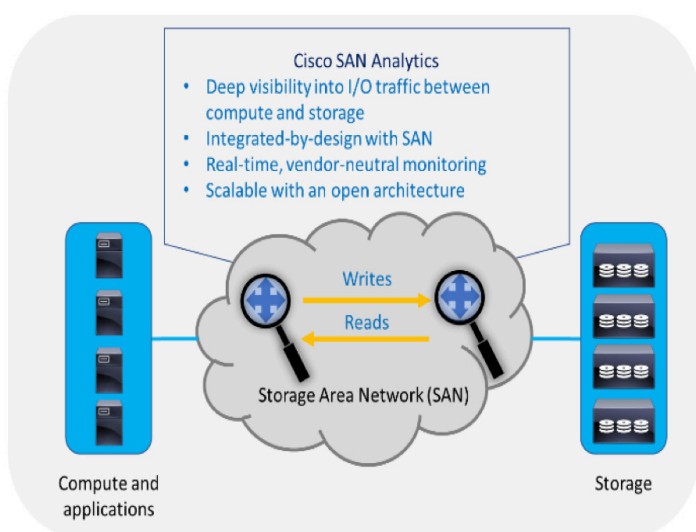


# Virtana Hybrid Observability and Cisco SAN Analytics: Better Together

Cisco and Virtana have partnered to provide unprecedented value to our joint customers by combining Virtana's years of expertise in hybrid observability with Cisco's years of expertise in storage networking. Cisco SAN Analytics integrates with Virtana's hybrid observability platform to help customers optimize infrastructure and assure application performance.

## Cisco SAN Analytics overview

Cisco SAN Analytics offers end-to-end visibility into Fibre Channel block storage traffic (SCSI and NVMe). The solution is natively available in the Cisco® MDS 9000 switch family. Due to its integrated-by-design architecture, Cisco SAN Analytics delivers deep visibility into I/O traffic between the compute and the storage infrastructure. This insight into I/O traffic adds to the visibility obtained from individual ports, switches, servers, virtual machines, and storage arrays.



## Virtana Platform overview

Virtana Platform uses an agentless approach to hybrid observability.

Proactive insights are delivered via dashboards personalized for each level of the organization. These insights are powered by Virtana's embedded analytics built to enable event intelligence from the data center to the public cloud.

The platform combines and correlates infrastructure data collected from compute, network and storage. Metrics are ingested into the hyperscale platform, empowered by AI and ML.

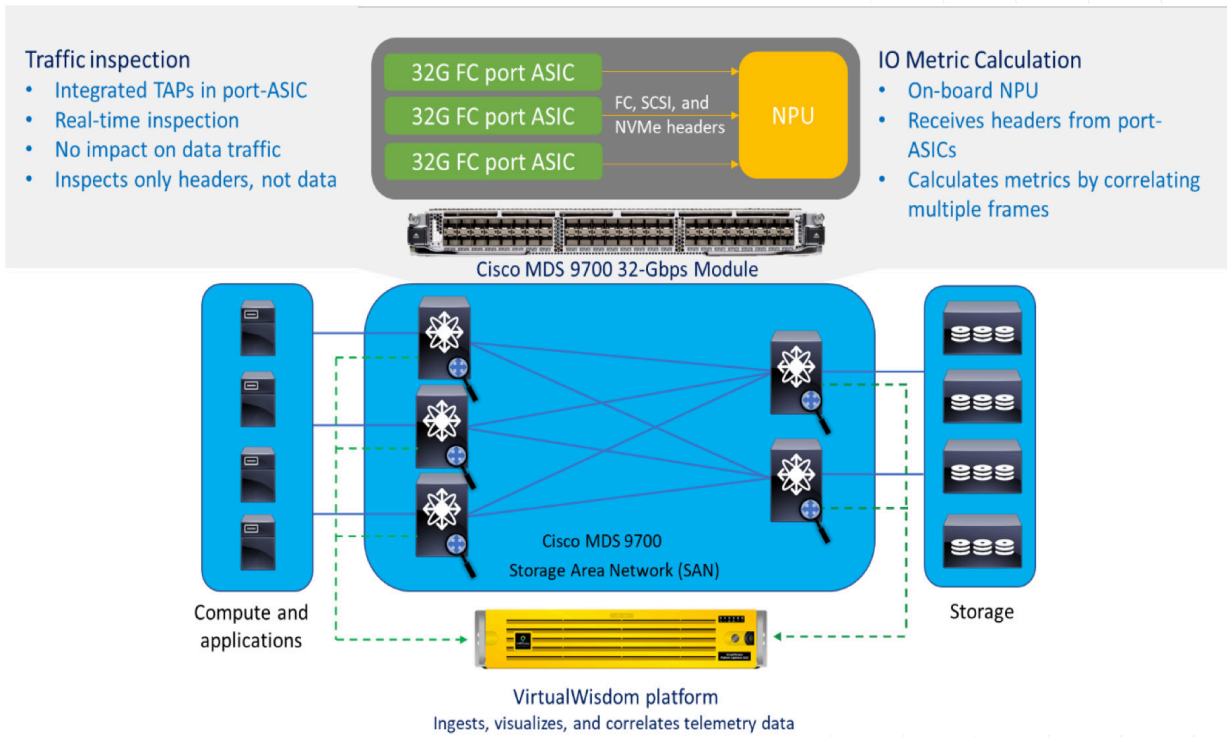
The Virtana Platform helps customers assure application service, predictively manage capacity, balance infrastructure workloads, and proactively resolve problems.

## Cisco SAN Analytics and Virtana Platform: Working together to optimize infrastructures and assure application performance

### Data Collection

Cisco SAN Analytics delivers NVMe and SCSI traffic inspection and is integrated into the latest-generation ASICs available on Cisco MDS 9000 family switches. The ASICs capture and inspect frame headers without any performance or feature penalty. No application data is inspected or persisted during this process. Metric calculations are performed internally on the switch using an on-board Network Processing Unit (NPU). Flow metrics are generated and optimized by correlating multiple frames with common attributes (frames from the same host port, for example).

The availability of a programmable NPU on the switches enables tremendous possibilities. New capabilities can be added by a non-disruptive software upgrade. For example, in the future, more metrics can be calculated, including vendor-specific extensions. As the size of the fabric grows, the resources for traffic inspection and metric calculation also grows as the NPU is integrated into the Cisco MDS 9000 product family.



## Value for joint customers

Virtana understands where the applications are deployed, their business importance, how they utilize infrastructure, and real-time service levels and changes. Cisco SAN Analytics enhances Virtana's ability to provide deep insight into the health, utilization, and performance of the storage infrastructure supporting applications without requiring agents or probes to be deployed.

### Increased Fabric Visibility

The integrated-by-design architecture of Cisco SAN Analytics provides complete visibility into your fabrics. Traffic can be inspected at storage ports, ISL ports, or host ports, delivering always-on visibility and anomaly detection in near-real time.

### Problem Resolution and Avoidance

Virtana automatically reduces noise associated with alarms, correlates and ranks potential root causes, tracks resolution status, and makes actionable recommendations on resolution.

### Scalability

Cisco SAN Analytics natively scales up with the size of your SAN. Whether it is a small SAN comprising a single pair of switches or a large SAN with thousands of ports, you gain visibility as soon as end devices are connected.

### Fabric Balancing and Capacity Management

Virtana enables customers to proactively optimize their infrastructures. The Cisco SAN Analytics integration with Virtana provides the monitoring data to forecast storage port capacity, detect multipathing issues, and provide optimal queue depth settings for hosts.

### Affordability

Data collection is integrated into the switch, which makes it extremely affordable to enable traffic inspection, resulting in significant CapEx savings for customers.

### Ease of Deployment

No hardware is required for traffic inspection or metric calculations. Metric streaming is enabled by a single command within seconds, with no downtime.