

# Virtana Infrastructure Performance Management (IPM) Cisco MDS 9700 32G Integration with SAN Telemetry Streaming

Complete Cisco SAN visibility via data acquisition across 32G Fibre Channel SAN Switch Fabrics

## Introduction

With a built-in, high performing, hardware-based network processing unit on Cisco MDS 32G Modules, designed for the Cisco MDS 9700 series, organizations gain complete visibility across SAN in real time – every exchange, every sequence, every packet at line rate.

Utilizing the on-board network processing unit (NPU), the module allows I/O-level metrics to be computed at every switch on all ports at line rate. The NPU examines every exchange passing through to capture flow metrics such as exchange completion time, maximum number of outstanding exchanges, data access latency, read and write I/O operations per second (IOPS), throughput, logical unit number (LUN) access pattern (sequential or random), and I/O block sizes.

The Virtana IPM infrastructure performance monitoring and analytics platform directly integrates with this new Cisco MDS SAN Telemetry Streaming capability and:

- Collects all switch traffic data with a dedicated ASIC inside the Cisco MDS switch
- Produces the statistical summary of observed workload and response time behavior.

The Cisco MDS switch actively streams the resulting summary via its telemetry interface to the Virtana IPM Management Appliance which stores the data, checks for best practice-based alarm conditions, performs analytics and presents the data via its application- centric user interface.

## What is SAN Telemetry Streaming?

Cisco SAN Telemetry Streaming provides advanced telemetry and diagnostics data that are key to troubleshoot and provide deep insight into SAN fabrics. The new MDS Fibre Channel switch is architected for connecting hyper-scale virtualized environments to high performance and low latency all flash arrays for FCP workloads, as well as FC-NVMe workloads soon. It offers enhanced onboard telemetry for visibility and a comprehensive set of built-in tools for end-to- end diagnostics to help proactively identify and correct conditions that affect all flash array performance.

## Improve Data Center Operations through the Cisco/Virtana Technology Integration

Virtana will offer direct technology integration to Cisco's SAN Telemetry Streaming. Both companies share a common vision around the need for an App- centric approach to the management of data center infrastructure. Virtana IPM is the SAN industry's leading infrastructure performance monitoring and analytics platform.

Cisco SAN customers can now choose to deploy Virtana IPM non-intrusively, eliminating the need for physical TAPs and Performance Probes. This brings together the best of the Virtana award winning analytics capabilities with the best of SAN infrastructure.



## Combined Solution Benefits

**High Bandwidth SAN for Flash Storage:** The New MDS 9700 48-Port 32-Gbps Fibre Channel Switching Module enables customers to seamlessly scale as demand grows.

**Investment Protection:** The Cisco MDS 9700, first introduced in 2013, can now be upgraded to support 32G Fibre Channel with Cisco's easily upgradable chassis architecture.

**Leading Performance:** Full-duplex aggregate performance of 1536 Gbps, for high-speed 32-Gbps storage connectivity for high-performance virtualized servers, all flash arrays and non-volatile memory express (NVMe) arrays.

**Deep Visibility with Integrated Analytics Engine:** With a built-in, high performing, hardware-based analytics engine on Cisco MDS 32G Modules, organizations gain complete visibility across SAN in real time.

**Increase Efficiency and Simplify Operations:** Multi-protocol flexibility: MDS switches support NVMe and SCSI simultaneously over FC and FCoE.

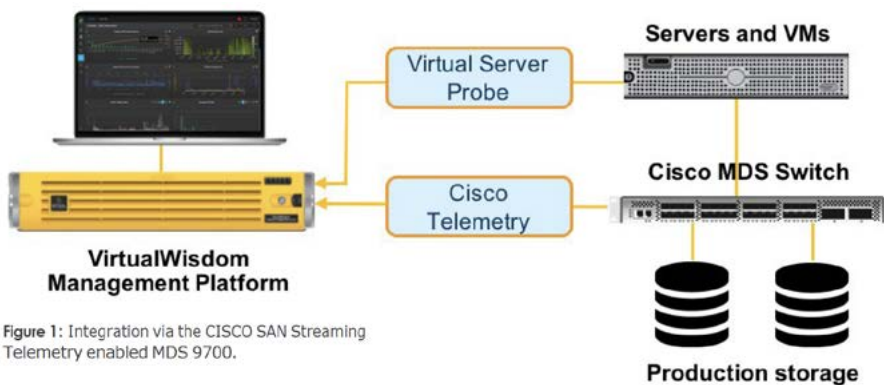


Figure 1: Integration via the CISCO SAN Streaming Telemetry enabled MDS 9700.

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## Virtana App-centric Infrastructure Performance Management

Customers can take advantage of the simple, intuitive dashboards, analytics engines and complete SAN health remediation to quickly advance user satisfaction and management awareness.

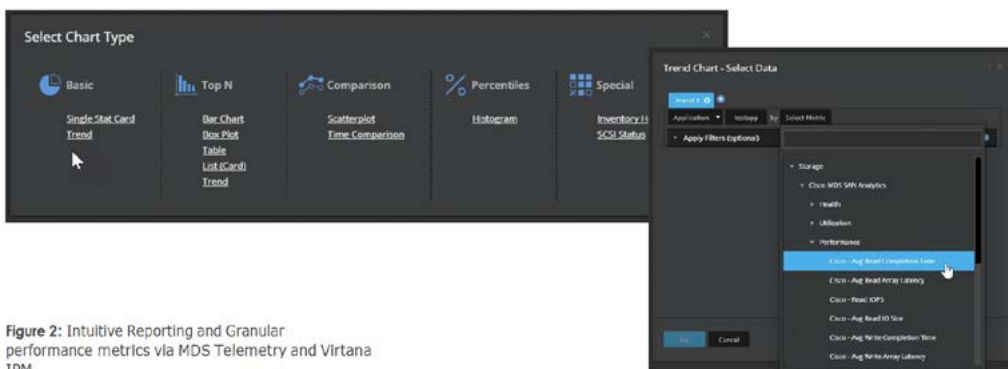


Figure 2: Intuitive Reporting and Granular performance metrics via MDS Telemetry and Virtana IPM.

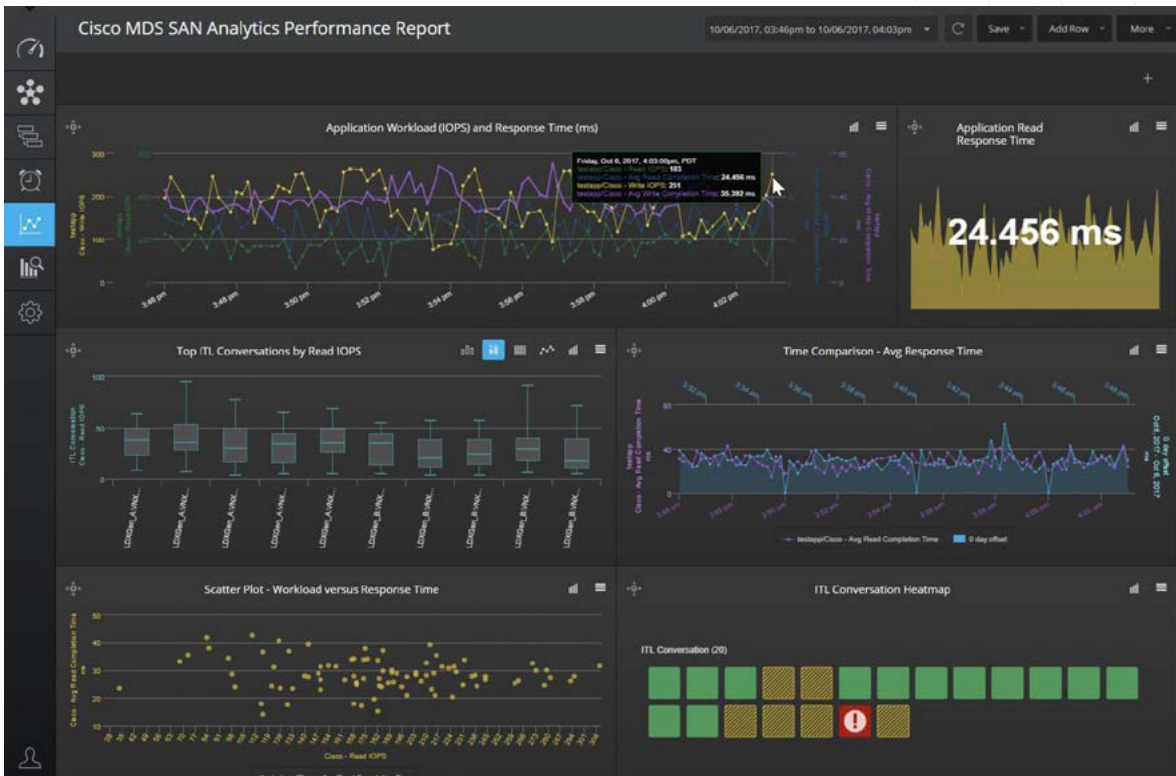


Figure 3: Example of Virtana IPM Analytics dashboard analyzing a Cisco SAN.

## Summary

The Virtana IPM App-centric Infrastructure Performance Management (IPM) platform provides real-time and historical insights into the performance, availability, health and utilization of your data center infrastructure—across physical, virtual, and cloud environments. Our Applied Analytics transforms the data into actionable insights that can be used to optimize your environment and proactively find and resolve issues before users are affected. Virtana IPM is the leading real-time, application-centric, vendor-independent, cross-domain performance monitoring and analytics solution in the industry.