

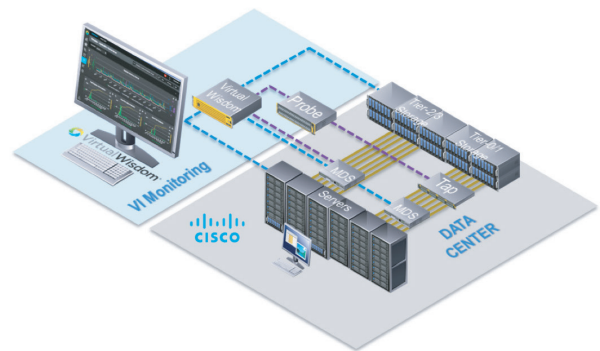
WisdomPack for Storage Wire Data

The Only Choice for Assuring Data Performance

The VirtualWisdom® WisdomPack for storage wire data is the industry's gold standard for high-fidelity data collection supporting the big data generated by the world's most critical applications.



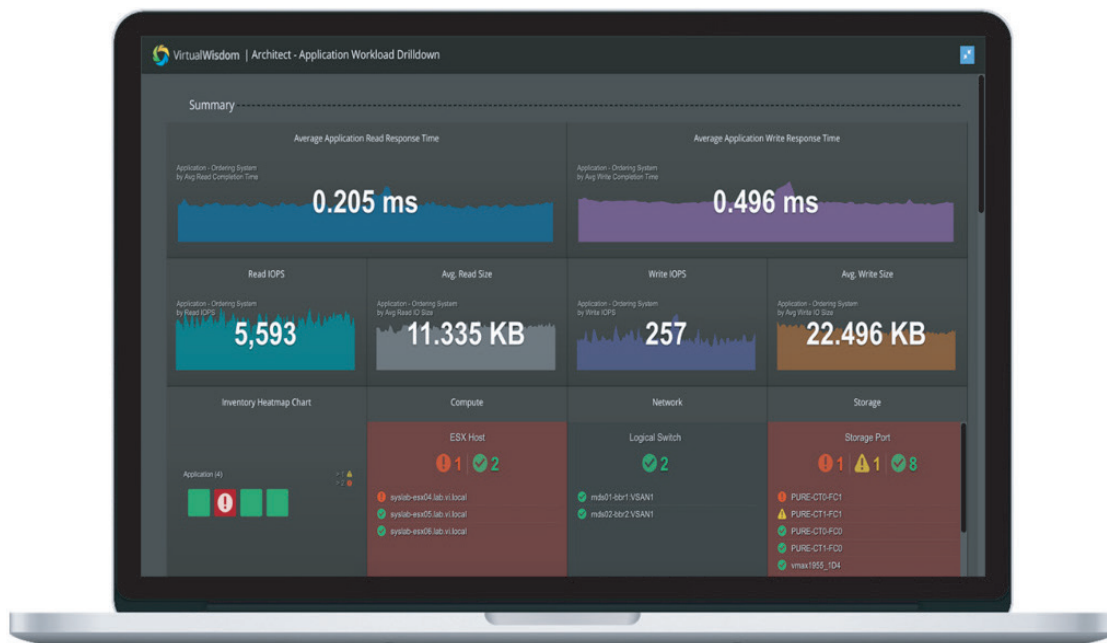
- Monitor wire-level application conversations over a Fibre Channel SAN, iSCSI SAN, or Network Attached Storage using NFS or SMB with an ultra-high-performance hardware probe
- Agentless wire-level monitoring of Cisco 32G Fibre Channel fabric



WisdomPack for Storage Wire Data

- Monitor hundreds of storage links in real-time with unparalleled dataingest capabilities

Figure 1: Actual deployment with optical TAPs and Performance Probes.



Cisco SAN Analytics integration support

Cisco chose to partner with Virtana as the leading application-centric storage wire data monitoring vendor. Cisco SAN Analytics provides software-only wire-level performance monitoring of every application conversation in a 32G Cisco MDS SAN without the need for any optical hardware TAPs.

VirtualWisdom ingests data from multiple Cisco switches to bring fabric-wide end-to-end visibility into a single pane of glass. VirtualWisdom also provides long term metric storage, trending, correlation and predictions.

VirtualWisdom Performance Probes

VirtualWisdom Performance Probes are the industry's first and only real-time, full line rate family of monitoring solutions for Fibre Channel Storage Area Networks (SANs) and Network Attached Storage (NAS). Working completely out-of-band, the Performance Probes analyze every frame on monitored ports, and report hundreds of metrics every second to provide comprehensive, accurate, and vendor agnostic monitoring at the protocol level. The Performance Probe accesses wire data using non-intrusive optical TAPs.

The Performance Probes are typically deployed on the links between storage ports and next-tier switches, or on both sides of fabric-based storage virtualizers. Connectivity to the live links is provided by traffic access points (TAPs), which use passive optical couplers to access the optical signal on both channels of the link. A TAP diverts a small amount of the optical power on each channel to a full line rate monitoring output for out-of-band access by the Performance Probes. TAPs certified for compatibility with the Performance Probes are available from both Virtana and a growing number of leading physical infrastructure providers. The Performance Probe has no data payload out of the FPGA accessible memory. The Performance Probe removes all data from the signal and processes only the frame headers themselves, so the VirtualWisdom server and its repository never see the data payload. Only traffic metrics are communicated from the Performance Probe to the VirtualWisdom Server.

Monitoring Cisco or Brocade SAN fabrics using the VirtualWisdom FC Performance Probe

- For the most mission critical application monitoring, the FC Performance Probes monitor application conversations in real time using 24 ports of 4/8/16G Fibre Channel

- Over 400 Fibre Channel and SCSI metrics covering light loss, synchronization, flow control, IOPS, throughput, queue depth, logins/logouts, read/write latency, SCSI status messages, events, failures/ aborts and more at the highest fidelity available in the industry

Monitoring NAS or iSCSI using the VirtualWisdom NAS Performance Probe

- Purpose-built NAS Performance Probes capable of supporting 16 ports of 10GbE at line rate
- Over 300 Ethernet, TCP/IP v4, NFSv3, SMB, iSCSI and RPC metrics covering pause frames/flow control, IOPS, throughput, logins/logouts, read/write/ other command latency, events, failures and more at the highest fidelity available in the industry

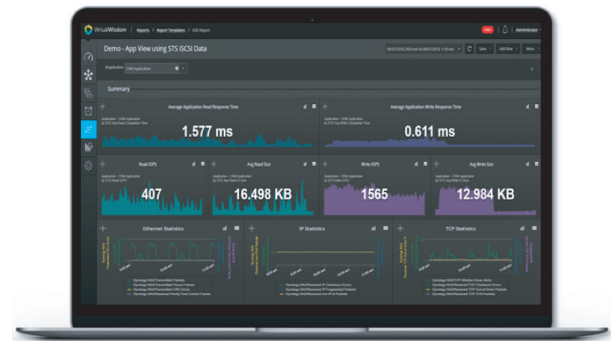


Figure 2: 10GbE NAS Performance Probe monitoring iSCSI & Ethernet performance.

WisdomPack for Storage Wire Data

WisdomPack for Storage Wire Data includes discovery, monitoring, visualization (dashboards and reporting), alarming and guided investigation workflows to provide a run-book style of automation.

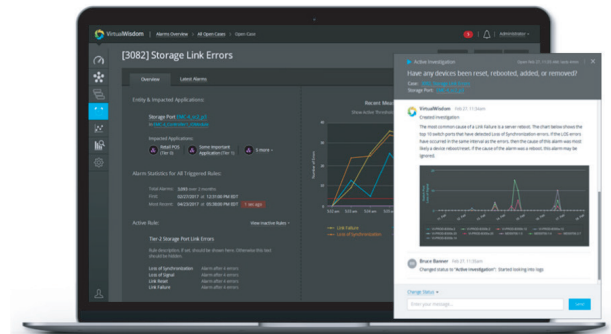


Figure 3: Investigations enable any user to quickly triage, diagnose and resolve issues to avoid outages

WisdomPack for Enterprise Storage: Key Features

	AIOps Driven Analytics			
	Application Service Assurance	Predictive Capacity Management	Workload Infrastructure Balancing	Problem Resolution and Avoidance
Cisco SAN Analytics	✓	✓	✓	✓
VirtualWisdom FC Performance Probe	✓	✓	✓	✓
VirtualWisdom NAS Performance Probe	✓	✓	✓	✓

WisdomPack for Storage Wire Data: Key Features

	Brocade SAN Integration	Cisco SAN Integration	
TAP	No	Yes (80/20 split ratio TAP)	Yes (70/30 split ratio TAP)
Purpose-built Hardware	No	✓	✓
Discovery and Application Mapping	32G Fibre channel	16G Fibre channel	10Gb Ethernet
Physical Network Layer	✓	✓	✓
Performance Metrics	✓	✓	✓
Health Metrics	✓	✓	✓
Capacity Metrics	✓	✓	✓
Alerting	✓	✓	✓
Intelligent Problem Resolution	Guided Investigations	Guided Investigations	Guided Investigations



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