

VirtualWisdom[®] SAN Availability Probe

Model ProbeSW

Virtual Instruments products provide an unprecedented scope of diagnosis and prevention capabilities for complex, heterogeneous Fibre Channel Storage Area Networks (SANs)

- Dramatically reduces the time to identify and resolve SAN-related problems, reducing downtime and improving IT staff productivity
- By highlighting over-utilized resources, helps to prevent outages and performance problems
- Historical trending analysis enables proactive fault identification, reducing the number of trouble tickets and reducing downtime by up to 75%
- Enables greater data availability by proactively finding multi-path failures before they affect end users.
- Enables greater throughput by finding opportunities to tune the use of multi-path links, ISLs, and storage virtualizers
- Reduces overall SAN-related capital and operating costs by identifying over-provisioned links, helping avoid unnecessary future expenses.

As a component of the Virtual Instruments' VirtualWisdom solutions, the SAN Availability Probe is a non-agent based software probe that utilizes the MIB (management information block) from Fibre Channel switches via SNMP to gather switch performance and link error statistics in a non-intrusive manner. These critical switch statistics are collected by VirtualWisdom's Server software and presented to the user in an easy to use configurable, graphical user interface.

Use of VirtualWisdom's SAN Availability Probe results in significantly higher infrastructure utilization and helps administrators substantially improve data availability and application performance through correlation techniques that help quickly troubleshoot, or even avoid problems .

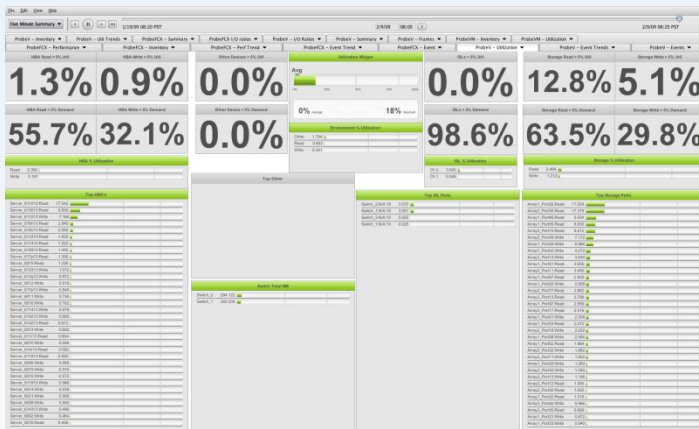
The SAN Availability Probe supports all Fibre Channel switch manufacturers, creating a vendor-agnostic view of switch port performance. VirtualWisdom utilizes the data collected by the SAN Availability Probe to track switch performance, identify oversubscribed resources, conduct historical trending analysis, and quickly alert administrators of link error problems or performance bottlenecks.

The SAN Availability Probe runs on the VirtualWisdom Server. The Server collects real-time data and correlates server, network, and I/O metrics from the Probe, and optionally, The SAN Virtual Server Probe and the SAN Performance Probe, into a complete view of the data path between hosts and/or virtual machines and SAN storage. Performance deviations, link errors, and improperly configured multi-pathing are quickly diagnosed utilizing real-time and historical trends and reports. The number of problems and time spent on resolving performance issues or network faults are systematically and dramatically reduced.

If more detailed performance analysis is needed, the SAN Availability Probe can be used with the hardware based Virtual Instruments SAN Performance Probe. The Performance Probe is inserted into the network using Traffic Access Points (TAPs), so it does not affect the network it's monitoring. This full line rate hardware probe can calculate real-time performance metrics from the SAN, providing the most accurate SAN performance statistics by tracking all individual end device conversations.

Features

- Provides a dedicated, real-time SAN monitoring solution with flexible thresholds and alerts
- Gathers Switched Fabric Performance Statistics with a non-agent based software probe
- Provides overall view of fabric health through centralized switch event monitoring
- Offers vendor-agnostic view of Fibre Channel switch statistics with no impact on switch performance
- Identifies highly utilized and underutilized ports and links
- Detects failed multi-pathing and sub-optimized links (passive vs. active multi-pathing)
- Support for monitoring and measuring virtual fabrics from Cisco: VSAN, NPV, FlexAttach and from Brocade: Virtual Fabric, Access Gateway
- Records & plays back metrics to pinpoint Intermittent Issues
- Measures exhaustion of Buffer to Buffer Credit to help identify and avoid potential bottlenecks
- Provides historical performance trending over time
- Detects degraded Inter-Switch Links



The VirtualWisdom Dashboard is a real-time summary display that provides an overview of SAN infrastructure, based on the metrics available from probes. It provides a simple, customizable view of I/O from the application on the host to the LUNs on the storage arrays. Metrics, fault warnings and policy deviations are continually updated with quick drill-down reports. Reports are user-definable and can easily be exported for use in other management solutions to ensure maximum performance on mission-critical applications.

SAN Availability Probe Compared

Compared to the most common switch fabric management tools, the SAN Availability Probe provides more complete trend analysis for capacity planning, a virtually unlimited record & playback of metrics to pinpoint intermittent issues, and supports a wider range of vendor devices. And significantly, it provides for a seamless upgrade path to more robust instrumentation, monitoring, measurement, and infrastructure optimization available through VirtualWisdom's SAN Performance Probe and Virtual Server Probe.

Technical Specifications

The Metrics collected or generated by the SAN Availability Probe include:

- **Switch Port Information:** Worldwide names of attached devices, manufacturers of attached devices, link rate, port type, nickname, FCID
- **Switch Metrics:** received/transmitted bytes and frames, CRC errors, link resets, link failures, loss of signal, loss of sync, Class3 Discards
- **Switch LED:** Error state, signal state
- **Exhaustion of Buffer to Buffer Credit**

Standards: ProbeV supports SNMP versions 1, 2c, and 3.



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