

VirtualWisdom® Storage Probe Model: ProbeNTAP

Introducing Virtual Instruments' First NAS Storage Array Probe

Software-Based Storage Probe

ProbeNTAP leverages an agentless software API to capture health and utilization statistics for Network Appliance Storage Arrays (ONTAP 9, Clustered NFS). VirtualWisdom uses these statistics in conjunction with advanced discovery and reporting to provide users with additional context for understanding system-wide health, utilization and performance.

Many users are moving mission-critical workloads to NAS storage arrays. However, the existing NAS monitoring and troubleshooting solutions are not designed to support mission-critical applications. Many of the existing monitoring tools lack the flexibility and scalability to provide useful and actionable insights. When coupled with other VirtualWisdom metrics, ProbeNTAP helps customers get a full end-to-end view of their NAS-attached physical and virtual infrastructure.

Product Benefits

- Adds additional context in managing the health and utilization of Network Appliance-attached physical and virtual environments
- Advanced trending and reporting capability for Network Appliance NFSv3 metrics for planning and trouble-shooting
- ProbeNTAP complements the other VirtualWisdom Probes—providing a full end-to-end, system-wide view
- Automated Network Appliance entity discovery

The Metrics Generated and Correlated

Storage Node & Vserver Metrics — Raw Metrics

- **Counters for each NFSv3 command (READ, WRITE, CREATE, etc.)**

- The number resulting in an error
- The number successful
- The total number of commands
- Combined NFSv3 command counters
- Total NFSv3 procedure requests
- Total NFSv3 data transfers
- Totals for NFSv3 read/write operations
- Totals NFSv3 read/write data transfers

Storage Node & Vserver Metrics — Calculated

- **Based on raw counters for each NFSv3 command**

- Percentage of command errors from total
- Percentage of total of a command from all total operations
- Percentage COMMIT to WRITE commands
- Percentage “Do work” : Total reads + writes + creates + removes + mkdirs + rmdirs + renames as a percentage of all total operations

- **Based on combined NFSv3 command counters**

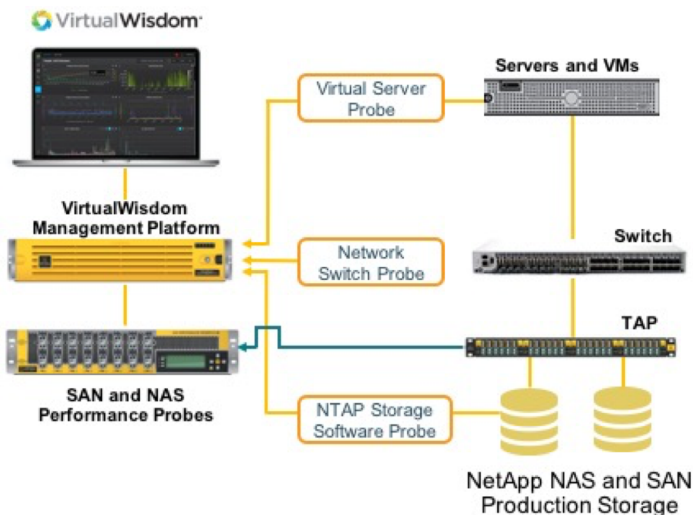
- Rate of total operations / sec
- Rate of data transfers / sec
- Rates of read and write operations / sec
- Rate of read and write data transfers / sec
- Percentages of read/write operations of total
- Percentages of read/write data transfers of total

LIF Metrics — Raw

- Received/sent bytes
- Received/sent packet count
- Received/sent errors
- Uptime in milliseconds

LIF Metrics — Calculated

- Rates of received/sent bytes / sec (presented in other units)
- Rates of received/sent packets / sec



Entity Discovery

NetApp® storage array is a clustered data architecture, emphasizing a separation of physical resources and virtualized volume access. VirtualWisdom discovers the following NetApp Resources:

- **NetApp Cluster (aggregate of Storage Nodes, Vservers and Logical Interfaces (LIFs)):** One or more HA pairs of storage nodes
- **NetApp Storage Nodes:** A physical instance of NetApp storage controllers and disk storage. Each node provides data services and has redundant cabled paths to the other node's disk storage.
- **Vservers:** A logical instance of NetApp storage volume—a “storage virtual machine” hosted on the cluster (aggregate of LIFs).
- **Virtual Ethernet Port or Logical Interfaces (LIF) hosted on the Vservers:** A logical interface (port) through which client devices access NAS resources.



Sales
sales@virtualinstruments.com
1.888.522.2557

Training
training@virtualinstruments.com

Website
virtualinstruments.com