BROCADE ADVANCED PERFORMANCE MONITORING

STORAGE AREA NETWORK

The Growing Need for Performance Monitoring

HIGHLIGHTS

- Increases end-to-end visibility into the fabric for more effective design and capacity planning
- Improves performance tuning and resource optimization through comprehensive real-time and historical statistics
- Identifies Virtual Machine (VM) performance issues and fabric congestion, accelerating troubleshooting
- Ranks top bandwidth-consuming data flows and enables effective resource provisioning
- Automates alerts through Brocade Fabric Watch based on user-defined performance thresholds, reducing operational tasks and delivering maximum value
- Increases productivity with preformatted and customizable screens and reports
- Enables more accurate reporting for Service Level Agreements (SLAs) and charged-access applications

The Brocade One™ strategy helps simplify networking infrastructures through innovative technologies and solutions. Brocade Advanced Performance Monitoring supports this strategy by providing administrators the insight and tools needed to ensure an optimized SAN infrastructure.

Getting the most out of IT resources and effective capacity planning are key requirements for today's virtualized and cloud-optimized data center infrastructures. Administrators require tools that allow them to quickly identify potential points of congestion, provision and reallocate resources, and optimize fabric performance.

Brocade® Advanced Performance Monitoring—based on Brocade Frame Filtering technology and a unique performance counter engine—is a comprehensive tool for monitoring the performance of networked storage resources. This ASIC-based monitoring tool helps reduce the total cost of ownership and over-provisioning while enabling Storage Area Network (SAN) performance tuning, reporting of Service Level Agreements (SLAs), and greater administrator productivity.

Advanced Performance Monitoring helps optimize fabric performance and resource utilization by:

- Monitoring every port in the fabric, continuously and non-intrusively
- Monitoring transaction performance from source to destination, including physical and virtual devices
- Monitoring Inter-Switch Link (ISL) performance and utilization
- Measuring device performance at each port
- Measuring ISL trunking performance and resource usage
- Identifying potential fabric congestion and providing insight into application bandwidth consumption
- Utilizing Top Talker reports that rank the highest-bandwidth data flows in the fabric for F_Ports and E_Ports (ISL)
- Monitoring frame type at each port, including SCSI reservations and ABTS

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END-TO-END MONITORING FOR SWITCHED FABRICS

Advanced Performance Monitoring enables administrators to monitor both "transmit" and "receive" traffic from physical or virtual source devices all the way to destination devices. Applications such as Web serving, databases, or e-mail can be analyzed as complete systems with near-real-time performance information about the data traffic between the servers and storage devices. This end-to-end visibility into the fabric provides valuable insight into ISL and resource utilization, and enables effective provisioning to avoid congestion and optimize fabric resources.

ISL MONITORING

ISL monitoring helps administrators determine the sources of traffic on ISLs and identify potential points of congestion within the SAN fabric. The Top Talker E_Port fabric report ranks the highest-bandwidth data flows (source address, destination address) across the end-to-end fabric. Top Talkers can also rank the top application flows on individual E_Ports (available on Brocade 16 Gbps platforms and 8 Gbps blades based on the Brocade next-generation Condor3 ASIC).

DEVICE MONITORING

The Top Talker F_Port report ranks the highest-bandwidth data flows (source address, destination address) for any F_Port connection on an 8 Gbps or 16 Gbps switch. It can rank data flows that are entering the port (ingress) or leaving the port (egress), identifying opportunities to eliminate congestion in the fabric.

FRAME MONITORING

Advanced Performance Monitoring also provides the unique ability to filter on a specific Fibre Channel frame type, such as excessive SCSI reservations that can impact Virtual Machine (VM) performance, or ABTS frames that can indicate fabric congestion. A counter engine works with Brocade Frame Filtering to collect and compile raw data from the filters and translate it into meaningful information. The counter is incremented each time a specific frame type is filtered through the corresponding port, generating an alert via Brocade Fabric Watch when the defined threshold is crossed. Frame types can be either standard or user-defined, giving administrators maximum flexibility. Predefined frame monitor templates include SCSI, SCSI_Read, SCSI_Write, SCSI_Reserve, ABTS, and more. These templates simplify frame monitor configuration and enable critical statistics gathering for monitoring SAN fabrics.

AN EASY-TO-USE GUI

Advanced Performance Monitoring makes powerful capabilities simple and easy to use. A GUI launched from the Brocade Web Tools utility gives administrators "at-a-glance" information needed to anticipate and resolve problems. Administrators can display up to eight performance graphs on a single management "canvas." Different canvases can address different users, scenarios, or host applications. In addition, saved canvas configurations enable administrators to change views quickly and easily.

Because there is no need to identify a single management console, administrators can access and run the tool from any Brocade SAN switch or director using the Web Tools browser. Moreover, setting up end-to-end monitoring is straightforward, even for large SAN configurations. To further improve productivity, administrators can use powerful sort, search, and selection features to identify source-to-destination device pairs, dragging and dropping them from the topology "tree."

ENHANCED REPORTING CAPABILITIES

Predefined graphs are available for the most common tasks. In addition, administrators can customize performance graphs on virtually any parameter and add them to canvas configurations (see Figure 1). They can also generate printouts or reports in minutes by using previously saved or customized layouts, along with easy-to-use drag-and-drop screens.

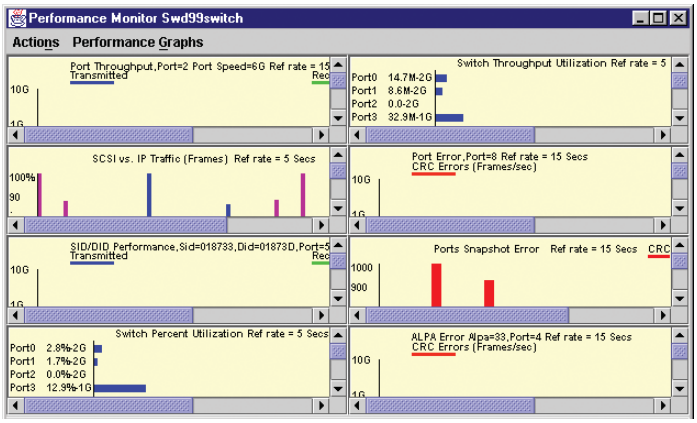

Figure 1. Predefined and customized graphs simplify end-to-end performance monitoring.

To support performance analysis and capacity planning activities, administrators can utilize the real-time and historical end-to-end performance data collected through Brocade Network Advisor. They can quickly identify the most demanding traffic flows in the fabric, get a current snapshot of Top Talkers, or trend Top Talkers over time. Administrators can view end-to-end performance and Top Talker information directly in Brocade Network Advisor or export it to other applications (such as Microsoft Excel and Crystal Reports).

SUPERIOR INVESTMENT PROTECTION

To utilize Advanced Performance Monitoring, the data path of the target must flow through a Brocade SAN switch or director with Frame Filtering capabilities. Existing Brocade devices do not need to be replaced or modified.

BROCADE GLOBAL SERVICES

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 15 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, network monitoring services, and education, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

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