

BROCADE NETWORK ADVISOR

NETWORK MANAGEMENT

HIGHLIGHTS

- Simplifies operations by providing centralized, end-to-end network management of SAN (including 16 Gbps Fibre Channel), IP, and wireless environments
- Provides critical flexibility, seamlessly scaling from small environments to large-scale and highly distributed geographic locations
- Provides comprehensive support for Fibre Channel SAN management with configuration, zoning, and visualization capabilities, including end-to-end HBA/CNA, storage, SAN fabric, and Layer 2 switch topology views
- Integrates seamlessly with leading hypervisors from Microsoft and VMWare, and industry-leading third-party management solutions from EMC, HP, and IBM

The Brocade One™ strategy helps simplify networking infrastructures through innovative technologies and solutions. Brocade Network Advisor supports this strategy by providing a single, unified, and easy-to-use network management platform for complete control of SAN and IP environments.

Unified Network Management for Data, Storage, and Converged Networks

Although every network type has unique management requirements, most organizations face the same challenges managing their network environments—such as minimizing network downtime, reducing operational expenses, managing application Service Level Agreements (SLAs), and providing robust security. Several tools exist to handle these requirements for different types of networks, yet no single tool provides cohesive management across all of them.

To address this issue, Brocade® Network Advisor provides the industry's first unified network management solution for data, storage, and converged networks. It supports Fibre Channel Storage Area Networks (SANs) (including 16 Gbps Fibre Channel platforms), Fibre Channel over Ethernet (FCoE) networks, Layer 2/3 IP switching and routing networks, wireless networks, application delivery networks, and Multiprotocol Label Switching (MPLS) networks. As a result, it provides end-to-end visibility across different network types within a single application. In addition, it supports comprehensive lifecycle management capabilities across different networks through a seamless and unified user experience.

SIMPLIFIED NETWORK MANAGEMENT

Organizations can use Brocade Network Advisor to manage their storage and data networks separately, or through a single instance of the product. By providing greater flexibility and visibility across environments, Brocade Network Advisor can significantly simplify network management.

Brocade Network Advisor provides a unified management experience that enables better coordination between storage and data networking administrators for provisioning, troubleshooting, and reporting. Similarly, organizations can manage wired and wireless networks within a single management application—propagating security and access policies across the entire enterprise and quarantining any malicious activity immediately.

Brocade Network Advisor provides key capabilities, including:

- **Intelligent dashboard:** Presents an at-a-glance summary of all discovered Brocade devices and third-party IP devices, including inventory and event summary information used to identify problem areas and help prevent network downtime (see Figure 1).

BROCADE

- **User management:** Allows flexible definitions of administrator roles and responsibilities with RBAC for both SAN and IP management.
- **Security management:** Offers robust security administration by integrating with leading Authentication, Authorization, and Accounting (AAA) solutions such as RADIUS, Active Directory, and TACACS+.
- **Configuration management:** Utilizes an easy-to-use Device Configuration wizard to configure and manage dynamically updated groups of devices. Using this feature, network administrators can manage software images and perform multi-switch management, including Power over Ethernet (PoE) management and Virtual LAN (VLAN) configuration, among other tasks.

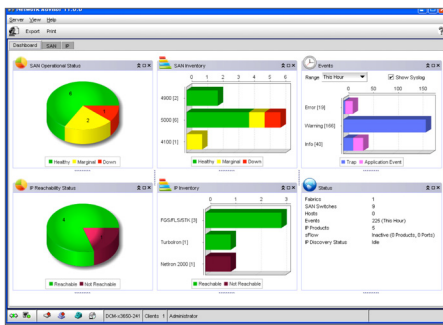


Figure 1. Brocade Network Advisor provides a unified dashboard view of storage and IP networks.

- **Command Line Interface (CLI):** Provides an interface to configure and deploy CLI-based configuration templates across one or more IP devices.
- **Application delivery management:** Manages Brocade application delivery switches and provides easy-to-use Virtual IP (VIP), SSL certificate, and GSLB management—including the display of physical and VIP addresses, port bindings, and status tools—to help optimize application performance.
- **MPLS management:** Provides comprehensive management of MPLS services through the MPLS Manager, supporting MPLS Virtual Private LAN Services (VPLS), Label Switched Path (LSP), Local VPLS, MPLS Virtual Leased Line (VLL), and Local VLL services with an intuitive interface.
- **Flexible reporting:** Features a powerful and flexible reporting framework, along with predefined asset reports.

In addition, Brocade Network Advisor provides the following features:

- Simplified firmware downloads and backup/restore of switch configurations across dynamic groups of switches to automate time-consuming activities and enable rapid provisioning
- An integrated Topology Manager with discovery and network mapping capabilities that provide Layer 2, VLAN, IP subnet, FCIP tunnels, FCR links, STP/RSTP, and MPLS views of managed devices
- A powerful search tool that enables fast location of devices based on multiple search criteria

DESIGNED TO ENABLE NON-STOP NETWORKING

Brocade Network Advisor helps organizations reduce network downtime through capabilities such as real-time and historical performance monitoring, traffic analysis, fault isolation, change management, and policy-driven remedial actions. Proactive alerts with real-time logging, diagnostic, and fault isolation capabilities help resolve issues before they impact SLAs.

Brocade Network Advisor offers key capabilities for:

- **Event management:** This feature helps in troubleshooting network-related issues and can receive SNMP traps, Syslog events, and messages for monitoring, analysis, correlation, remediation, and reporting. The trap forwarding feature allows Brocade Network Advisor to filter SNMP traps and send them to third-party applications.
- **Change management:** Organizations can track device configuration changes through the integrated Change Manager, which enables viewing, retrieval, and restoration of configuration files and monitoring of configuration drift for troubleshooting purposes. Configuration backups can be performed manually or scheduled to run automatically.
- **Automated Call Home:** The Call Home feature automatically collects diagnostic information in response to predefined and user-defined events, and sends notifications to technical support organizations for faster fault diagnosis, isolation, and remote support operations.

OPTIMIZED APPLICATION PERFORMANCE

Brocade Network Advisor can seamlessly manage multiple network infrastructures to help optimize application performance, manage SLAs, and maximize the availability of data and networked resources. Organizations can utilize leading-edge capabilities to:

- Proactively monitor, troubleshoot, diagnose, and provide event notification regarding critical health information at varying levels of detail
- Configure Quality of Service (QoS) priorities to optimize the performance of applications running on physical and virtual servers
- Collect and display performance statistics in real time and utilize historical views for proactive problem determination

Performance Monitoring

Brocade Network Advisor leverages the hardware-based sFlow technology available on all Brocade IP switches and routers to provide real-time network monitoring and accounting capabilities without any significant impact on network performance (see Figure 2). Unlike other flow technologies, the hardware-based sFlow technology provides real-time wire-speed switching and routing performance without significantly impacting network resources, allowing “always-on” fault and performance management, capacity planning, intrusion detection, security policing, and network traffic accounting.

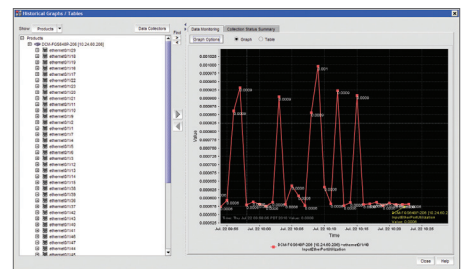


Figure 2. The Brocade Network Advisor Performance Monitoring feature provides real-time and historical performance information for managed devices.

For all Brocade SAN switches (including 16 Gbps Fibre Channel platforms), Brocade Network Advisor provides detailed monitoring of port and link utilization against predefined and user-configurable thresholds to optimize network performance

and maximize application availability—while also defining application QoS prioritization.

Traffic Analysis

The Traffic Analyzer feature provides trend analysis, management, and monitoring tools for sFlow reporting, accounting, and presentation for all IP devices (see Figure 3). The Brocade Network Advisor sFlow collection capability is ideal for performing network-wide troubleshooting, generating traffic reports, and gaining visibility into network activity from the edge to the core.

FLEXIBLE NETWORK MANAGEMENT PLATFORM

Built on a standards-based architecture, Brocade Network Advisor can scale from small network islands to large, geographically dispersed networks. Organizations can reduce operational expenditures by leveraging the same management solution across different environments, including data center, enterprise campus, and service provider networks.



Figure 3. The Brocade Network Advisor Traffic Analyzer feature provides an efficient way to view, retrieve, and report sFlow monitoring data.

Data Center Networks

Brocade Network Advisor provides comprehensive management of data center fabrics, including configuration, monitoring, and management of Brocade DCX® and Brocade DCX 8510 Backbones as well as Brocade directors, routers, switches, Host Bus Adapters (HBAs), and Converged Network Adapters (CNAs). It also helps organizations discover, monitor, and manage converged FCoE network environments as well as IP switching and routing networks.

Brocade Network Advisor provides comprehensive Layer 2 configuration, with easy-to-use Data Center Bridging (DCB) interface administration, FCoE

port and trunk configurations, FCoE login management, and QoS. In addition, it provides:

- Comprehensive support for Fibre Channel SANs (including Brocade 16 Gbps Fibre Channel platforms), with configuration, including SAN port diagnostics and bottleneck detection; zoning; and visualization, including end-to-end HBA/CNA, storage, SAN fabric, and Layer 2 switch topology views
- Proactive best-practices validation of SAN configurations— including on-demand or scheduled operation, customization, and “red flag” reporting—using the Policy Monitor tool
- Configuration, monitoring, and optimization of Fibre Channel over IP (FCIP) tunnels across WAN links, including support for managing multiple FCIP circuits, configuration of FCIP failover circuits, automated setting of compression parameters, configurable assignment of FCIP tunnel bandwidth to QoS classes, and support of multi-gigabit FCIP circuits
- An intuitive interface to help manage virtualized network environments
- The ability to edit zone information and preview its impact without affecting production fabrics
- FICON® and cascaded FICON environment configuration and management along with powerful analysis and diagnostic facilities

Enterprise Campus Networks

The complexity of managing enterprise campus networks is increasing due to significant growth in services—such as Internet, e-mail, voice, video conferencing, real-time collaboration, and distance learning—that rely on highly available wired and wireless networks.

Brocade Network Advisor is an easy-to-use management solution for discovering, managing, and deploying configurations to dynamically updated groups of devices. Using the Brocade Network Advisor Device Configuration Manager tool, organizations can configure VLANs within the network, manage wireless access point realms, group wireless LAN switches into domains for Layer 3 mobility support, or execute CLI commands on specific devices or groups of devices. Brocade Network Advisor centralizes management of the entire family of Brocade Mobility wireless

products, including access points and wireless controllers.

Metro and Carrier Ethernet Networks

Today’s exponential traffic growth in video, voice, data, and mobile broadband usage poses a challenge to administrators of regional service providers as well as large Telcos. All are seeking ways to simplify management, reduce operational costs, prevent bandwidth over-provisioning, and improve user service provisioning.

Brocade Network Advisor is a simplified yet powerful solution for discovering, monitoring, deploying, configuring, and managing Metro and Carrier Ethernet networks. It provides comprehensive management of MPLS services through the MPLS Manager and supports MPLS Virtual Private LAN Services (VPLS), Label Switched Path (LSP), Local VPLS, MPLS Virtual Leased Line (VLL), and Local VLL services with an intuitive interface. Brocade Network Advisor also includes full support for the IEEE 802.1ag Connectivity Fault Management (CFM) set of standards for end-to-end detection, isolation, and reporting of Ethernet faults across service provider networks.

PROTECTING INVESTMENTS

Brocade Network Advisor offers open, standards-based interfaces and provides deep integration with a wide range of third-party network monitoring, virtualization, wireless, and security solutions.

For data center environments, it integrates with leading server and storage automation solutions to bridge operational gaps across server, network, and storage administrators—providing end-to-end network visibility through frameworks such as the Storage Management Initiative-Specification (SMI-S) or through Brocade Partner solutions. These integrated solutions help:

- Obtain Virtual Machine (VM) information from VMware ESX servers and correlate with fabric device information to simplify the management of virtualized environments
- Provide end-to-end network visibility from VMs to storage ports through integration with VMware vCenter
- Offer seamless integration with Microsoft System Center Operations Manager (SCOM) to provide end-to-end network visibility to server administrators

Brocade Network Advisor also provides out-of-the-box support for leading data center orchestration frameworks, including IBM TotalStorage Productivity Center and Systems Director, HP VirtualConnect Enterprise Manager and Storage Provisioning Manager, and EMC Next-Generation Resource Management Suite.

In addition, Brocade Network Advisor provides a non-disruptive path and functional continuity for organizations that are upgrading from Brocade IronView® Network Manager (INM) or Brocade Data Center Fabric Manager (DCFM®).

UNIQUE OFFERINGS FOR BROCADE NETWORK ADVISOR

Brocade provides a wide range of offerings and services for Brocade Network Advisor.

SUPPORTED OPERATING SYSTEMS FOR BROCADE NETWORK ADVISOR PACKAGE OPTIONS

Operating System	Package Options
<ul style="list-style-type: none"> Windows Server 2003 Std SP2 (x86 32-bit) Windows Server 2008 Std (x86 32-bit) Windows XP Pro SP3 (x86 32-bit) Windows 7 Professional (x86 32-bit) VMware ESX 4.0 or 4.1 with Guest VMs of: Windows Server 2003 Std SP2 (x86 32-bit) 	SAN+IP (small, medium), SAN-only, and IP-only
<ul style="list-style-type: none"> Windows Server 2008 R2 (x86 64-bit) Standard, Data Center, and Enterprise Editions Red Hat AS 4.8 (x86 32-bit) Red Hat Enterprise Linux 5.4 Adv (x86 32-bit) SUSE Linux Enterprise Server 10 SP1, 11 (x86 32-bit) Oracle Enterprise Linux 5.x (x86 32-bit) VMware ESX 4.0 or 4.1 with Guest VMs of: <ul style="list-style-type: none"> Windows Server 2008 R2 (x86 64-bit) Standard, Data Center, and Enterprise Editions Red Hat Enterprise Linux 5.4 Adv (x86 32-bit) SUSE Linux Enterprise Server 10 SP1, 11 (x86 32-bit) Oracle Enterprise Linux 5.x (x86 32-bit) 	SAN+IP, SAN-only, and IP-only

Corporate Headquarters

San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters

Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters

Singapore
T: +65-6538-4700
apac-info@brocade.com

Software Options

Brocade Network Advisor is available with flexible package and licensing options for a wide range of network deployments and for future network expansion.

Training and Education

Brocade Educational Services offers Web-based training and instructor-led courses to share product information, tips, and best practices—and to provide hands-on experience with the product.

BROCADE GLOBAL SERVICES

Brocade Global Services delivers world-class professional services and technical support to help organizations maximize their investments in Brocade Network Advisor. Brocade Professional Services offers assessment, design, and implementation services to help organizations optimize their management environments. Brocade

Technical Support helps organizations maximize availability of mission-critical data in SAN and IP environments through software support, including 24×7 technical assistance via the telephone and Web, software fixes, and access to product updates.

MAXIMIZING INVESTMENTS

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

SYSTEM REQUIREMENTS

Brocade Network Advisor software and documentation are shipped on a DVD or available via download. The following table includes the supported operating systems. For details on the recommended system specifications, refer to the Brocade Network Advisor *Installation Guide*.

BROCADE NETWORK ADVISOR SERVER REQUIREMENTS FOR 32-/64-BIT WINDOWS AND LINUX SYSTEMS

Small Network

Intel Core 2 Duo, 2 GHz or equivalent, 4 GB RAM, 20 GB disk

Medium Network

Intel Core 2 Duo Dual-CPU, 2.4 GHz or equivalent, 4-6* GB RAM, 60 GB disk

Large Network

Intel Core 2 Duo Dual-CPU, 2.4 GHz or equivalent, 4-6* GB RAM, 80 GB disk

* 64-bit Windows systems require 6 GB RAM.

© 2011 Brocade Communications Systems, Inc. All Rights Reserved. 03/11 GA-DS-1514-02

Brocade, the B-wing symbol, BigIron, DCFM, DCX, Fabric OS, FastIron, IronView, NetIron, SAN Health, ServerIron, Turbolron, and Wingspan are registered trademarks, and Brocade Assurance, Brocade NET Health, Brocade One, Extraordinary Networks, MyBrocade, VCS, and VDX are trademarks of Brocade Communications Systems, Inc., in the United States and/or in other countries. Other brands, products, or service names mentioned are or may be trademarks or service marks of their respective owners.

Notice: This document is for informational purposes only and does not set forth any warranty, expressed or implied, concerning any equipment, equipment feature, or service offered or to be offered by Brocade. Brocade reserves the right to make changes to this document at any time, without notice, and assumes no responsibility for its use. This informational document describes features that may not be currently available. Contact a Brocade sales office for information on feature and product availability. Export of technical data contained in this document may require an export license from the United States government.



BROCADE