In today’s globally connected world, the enterprise network is a strategic platform, a platform that demands deep and instantaneous integration between people, information, and ideas. The network is only able to support your business when services, products, and people are aligned with the needs and opportunities of your organization.

Brocade Monitoring Services provide a set of tools and technologies designed to automate the delivery of both proactive and reactive intelligence and support for Brocade high-performance switching and routing platforms. Brocade offers these performance-enabling products and services to increase your network availability while simultaneously lowering operational expenses. By integrating support intelligence, automating support activities, and providing proactive insight into your infrastructure investment, your business gains a competitive edge in the network economy. With Brocade Monitoring Services, your network operations become simpler, more reliable, and more cost-effective.
Introduction

Brocade Monitoring Services are delivered via a secure, high-speed remote network infrastructure dedicated to Brocade support and management tools. Using an AES 256 encryption connection to customer locations through a Business-to-Business Internet VPN or a private MPLS circuit, the Brocade Monitoring Services network provides the necessary infrastructure for Brocade Support and its customers to perform a variety of maintenance and management operations. These include, but are not limited to: Automated Fault Management, Proactive Device Monitoring, Remote Diagnostics and data collection, End-to-End Network Performance Monitoring, and secure web portal-based Advanced Analytics.

Value Proposition

When network problems occur, quickly isolating and resolving the problem is paramount to keeping your business on track. However, to effectively diagnose data network problems, a variety of data must first be collected, synthesized, and analyzed to provide actionable intelligence. Historically, this level of analysis required an on-site expert, with raw data collection often falling on the shoulders of the already overworked IT operations team. Due to the high volume of data collected, getting these files into the hands of qualified Brocade Support personnel could be time-consuming—further hindering the diagnostic process and, more importantly, your business.

What this means is that over the lifetime of any given product, the ongoing operational expenses can add up to five or more times the cost of capital expenditures. Troubleshooting, planning, monitoring, and upgrading or adding infrastructure all contribute to this operational expenditure overhead.

Brocade Monitoring Services reduce this burden by:

- Automating the reaction process to problems, reducing exposure from downtime
- Increasing self-sufficiency by integrating Brocade expertise in the form of software and services
- Decreasing and simplifying maintenance efforts
- Decreasing the number of incident escalations by proactively eliminating outages through expert recommendations
- Monitoring system health and alerting when critical levels are reached
- Pinpointing exposure down to chassis, platform, and operating system details so that immediate preventative steps can be taken

Brocade Monitoring Services provide comprehensive monitoring of your infrastructure 24 hours a day, 365 days a year, allowing you to:

- Keep IT resources focused on supporting the core business strategy
• Increase availability and minimize the financial and resource impact of unplanned downtime

• Reduce operational costs and avoid the budget and technical challenges of an expanded dedicated management team

• Dramatically reduce the burden of hiring, training, and retention, as well as tools and process development for your technical staff

For over a decade, Brocade Monitoring Services have been supporting Brocade and third-party networking products for many of the top financial institutions and their most demanding enterprise networks. This is a secure solution that is customizable to meet customers' unique specifications and security policy guidelines, while keeping your business running amid growing pressure from regulators and customers alike.

**Service Description**

Improving network availability while reducing operational costs continues to be the key challenge for IT management. Brocade Monitoring Services augment your existing operations with a "second set of eyes," using a secure network infrastructure to enable increased availability and efficiency through the acceleration of problem identification and resolution, both reactively and proactively.

**Connectivity**

Understanding that every business is different in its connectivity capabilities and requirements, Brocade Monitoring Services are engineered to support multiple options by utilizing either an Internet Virtual Private Network (VPN) or private MPLS circuit, depending on either the service level purchased or customer preference.

Connectivity options include:

• **B2B Internet VPN:** A secure IP Security (IPsec) tunnel over the public Internet. This offers the lowest-cost option, while maintaining appropriate security controls.

• **Internet VPN with Brocade Router:** Uses the same customer-provided connectivity to the public Internet as above, except that it now terminates in a Brocade-provided router at the customer's data center. Brocade routers enhance security by including encryption and security matches and protocol that are compatible with the infrastructure at our data collection site. This also provides Brocade with visibility to both ends of the VPN tunnel.

• **MPLS VPN:** Utilizing Brocade Global Support's worldwide Multiprotocol Label Switching (MPLS) Network, dedicated T-1/E-1 connections are made to the customer data center. These terminate in Brocade-provided routers. Use of MPLS connectivity can provide improved throughput via dedicated bandwidth, underlying vendor service level agreements (SLAs) and our ability to administer quality of service (QoS) rules for data transmission and priority. Coupled with the Brocade-provided router, this solution provides the best connectivity between the customer and Brocade data centers.
Regardless of the connection method, each and every Brocade Monitoring Service implementation includes the following key elements:

- Brocade Technical Support team connectivity to the customer environment using Secure Sockets Layer (SSL)-VPN
- Authentication, authorization, and accounting (AAA) through the widely adopted Radius protocol, using industry-leading multifactor authentication

![Diagram](image_url)

**Figure 1.** Brocade monitoring services network.

**Automated Fault Management**

The Automated Fault Management service offering is ideal for accelerating problem resolution through automatic identification, notification, and Service Request creation for issues that need immediate attention. Typical Automated Fault Management alerts are actual hardware (HW) failures or red-light conditions like CPU power supplies, fans, and so forth.
Brocade monitors for predefined event conditions via Simple Network Monitoring Protocol (SNMP) using User Datagram Protocol (UDP) on port 162.

**Proactive Device Monitoring**

Proactive Device Monitoring is designed for identifying potentially disruptive situations before they become critical. SNMP polling, coupled with advanced filtering capabilities, allow for low-impact device telemetry. As an additional safety measure, Brocade Monitoring Services will not issue any SNMPset commands on any devices.

This low-impact telemetry is gathered by issuing SNMPget commands on port 161 at 60-second intervals, yielding a total round-trip network load of less than 100 bytes each, sent and received.

*Figure 2. Automated fault management.*
Remote Troubleshooting is an optional capability that can be deployed in response to automated fault management alerts, proactive device monitoring alerts, or by customer request and in accordance to specific rules created in concert with the customer's requirements. Remote Troubleshooting accelerates data collection (for example, support saves) and real-time diagnosis by enabling Brocade technicians to quickly and securely access the target device and commence problem diagnosis and analysis as soon as an alert is received.

Remote Troubleshooting uses J-SAM (the Java version of the Secure Application Manager for data encapsulation), along with industry leading multifactor authentication via the Secure Shell (SSH-2) protocol on port 22. This ensures utmost protection of this direct connection into the core of your enterprise, while enabling the highly skilled Brocade staff to perform their duties.

Figure 3. Proactive device monitoring.
While Brocade Remote Troubleshooting offers a standardized approach to providing secure remote access and maintenance capabilities, it is not a one-size-fits-all solution. Brocade recognizes that every customer environment presents unique challenges and opportunities, including business and regulatory requirements and their associated compliance policies and procedures. The access solutions chosen are based upon the customer’s decision as to which options best meet their operational and security requirements, including any need for (and availability of) customer on-site personnel to manage connections and provide information during both troubleshooting and routine maintenance monitoring and support.

Working with the customer’s security, operational, and technical teams, the Brocade solution is configured to address any accessibility, connectivity, privacy, and security concerns.
Depending upon customer-specific requirements, Brocade can include:

- Connection via a customer’s:
  - Terminal server or security gateway, utilizing multifactor authentication
  - Router and Firewall Access Control—with only select ports needing to be opened
- View-only/read-only non-administrative logins to customer devices
- Access via a segmented and secure customer device management LAN
- A combination of any or all of the above

Of course, Brocade recommends that all of their customers follow leading industry security practices, such as creating separate security zones separated by firewalls with ingress/egress filtering.

Additionally, Brocade strongly supports and advocates the customer’s own Change Management process as a critical element to ensuring high availability and proper documentation of network maintenance and remediation activity.

With a focus on testing and structured promotion of network changes, Brocade is confident that the Change Management program will ensure that specific compliance requirements are considered throughout the support process.

**Conclusion**

Brocade Monitoring Services help you maximize network availability, reduce downtime, and increase operational efficiencies. These services help IT managers do more with less, offloading some of the routine network monitoring and management tasks to Brocade networking experts, which allows you to stay focused on your core business.

Brocade Monitoring Services provide a comprehensive set of tools and technologies designed to enable Brocade Technical Services to automate the delivery of support activities. Brocade offers these services for increasing network availability while simultaneously lowering operations costs. For more information about Brocade solutions, visit [www.brocade.com](http://www.brocade.com).