

# Simple and Secure: Brocade<sup>®</sup> Gen 7 Makes Managing Your Environment Easy



## Enjoy best-in-class performance, uptime and security, without the need for active management.

You probably find yourself dealing with the impact of new business processes, increased digital adoption and more security vulnerabilities every day. Managing data growth, combined with the need for rock-solid reliability, and the requirement to maintain high levels of security can be cumbersome. Now is the time to make investments in your data center that will pay dividends for years to come.

Brocade Gen 7 delivers far more than just speed and latency improvements. It can take the pain out of protecting and managing your data center altogether. Integrated security and autonomous SAN technology enables a cyber-resilient network that safeguards your SAN against cyber attacks, IT disruptions, and disasters, while learning, optimizing, and healing on its own. These capabilities automate processes to ensure optimal performance and enable non-stop operations. At the same time, they strengthen the level of security in your network to protect against security threats around the clock. Read on to see what you could gain by upgrading.



### **Bulletproof reliability for always-on operations**

Brocade Gen 7 raises the bar for network availability and performance through its autonomous SAN capabilities. First, the Gen 7 SAN uses built-in telemetry to track, “learn”, and baseline traffic patterns. This allows the SAN to make smarter decisions about traffic and congestion management and deliver high availability with consistent performance and reliability.

If an event occurs that may risk application performance, the Gen 7 SAN works intelligently with end devices to pinpoint and resolve issues, in many cases, without human intervention and much faster than a human could respond. For example, if a credit-stall results in slowed traffic between devices, the Gen 7 SAN can autonomously take immediate action to identify and quarantine the misbehaving device while redirecting traffic flows to resume normal operation.



## Integrated security protects operations

Fibre Channel fabrics are secure by design, based on controlled access between servers and storage, and isolation within the data center. Brocade Gen 7 technology provides integrated security that further reduces vulnerabilities from malware and hijacking attacks by automatically validating the integrity of the switch operating system, security settings, and hardware.

Brocade Fabric OS (FOS) automatically provides the added level of security that's needed to ensure your operations are protected and additional security enhancements to validate the integrity and security of your Brocade hardware and software. These features are integrated and turned on automatically. Features include Secure Boot, Brocade Trusted FOS (TruFOS) Certificates, FOS hardening with removal of root access, and automated distribution of SSL certificates via Brocade SANnav Management Portal. Brocade TruFOS Certificates ensure that enterprises running Brocade directors and switches are currently covered by support, validated, and securely enabled to perform critical operations without having to worry about whether the operating system has been tampered with.



## Easy management and control

Brocade Gen 7 doesn't require active management to maintain optimal conditions in the SAN. Autonomous SAN technology equips your infrastructure with the tools and insight to solve many common issues on its own, and self-optimize to maximize performance.

If an issue occurs that the SAN can't resolve autonomously, it will first mitigate the impact then provide clear guidance about the cause and the remediation required, enabling you to fix it as soon as practically possible with minimal impact to business applications.

Brocade also provides easy-to-use tools to help you manage a single switch or your whole fabric at once, from deployment to configuration and ad hoc management.

- **Brocade® Webtools** is a product that is embedded into the Fabric OS® firmware. Ideal for small environments, it provides a new and improved Java-free GUI for fast, and easy management of individual switches or small fabrics. It can be launched directly from a web browser or accessed via the Brocade® SANnav™ Management Portal mentioned below.
- **Brocade® SANnav Management Portal** is the preferred option for medium or larger environments as it provides a complete view of the network including traffic flows and health conditions across the SAN. Its intuitive, drill down interface leverages Brocade Autonomous SAN technology and presents data in clear dashboards enabling a faster, more comprehensive SAN management experience. It also streamlines management workflows to accelerate the deployment of new applications, switches, hosts, and targets.

In addition, security features are built into Brocade SANnav Management Portal to help administrators protect their network. With Brocade SANnav, administrators can set up monitoring and alerting for security configuration changes, customize security thresholds, give proper access control to individual admins, view switch security events, and automatically distributing SSL certificates across the SAN to ensure authenticity and encryption settings.



## Flexibility for true investment protection

With Gen 7, you can get the most out of the infrastructure you have now while easing your migration to new storage technologies. Delivering 64G speeds and ultra-low latency, Gen 7 technology provides an instant performance boost for data-intensive applications and can handle anything you want to throw at it—Storage Class Memory (SCM), All Flash Arrays (AFAs), or NVMe.

Not yet ready to modernize your entire network? Brocade Gen 7 allows you to run multiple generations of SAN technology without sacrificing performance. It's backwards compatible with 8G, 16G and 32G Fibre Channel solutions. You can also seamlessly run NVMe and SCSI concurrently on the same network for migration at your pace, or as your business demands. To support this, Brocade® Traffic Optimizer, a key feature of Gen 7, automates the segregation of traffic by characteristics such as speed or protocol, like NVMe or SCSI. This optimizes the performance of the network. It also eliminates the risk of oversubscription or congestion issues caused by mismatched speeds while allowing you to upgrade your infrastructure as your time and budget allows. Only with Gen 7 can you achieve performance and efficiency gains that could never be achieved manually.



## Gain much deeper insight into your SAN

Take advantage of built-in Gen 7 tools for faster, in-depth analysis of the health and performance of your SAN. Providing comprehensive data collection and advanced analytics, these tools speed the identification of issues and recognize patterns that require attention—they're the foundation of a self-learning, self-optimizing, and self-healing autonomous SAN.

- **Monitoring and Alerting Policy Suite (MAPS)**

Using prebuilt, pre-validated rule and policy-based templates, MAPS takes the guesswork out of defining appropriate rules and actions, simplifying threshold configuration, monitoring, and alerting.

- **Fabric Performance Impact (FPI) Monitoring**

Takes predefined MAPS policies and automatically detects which devices are causing congestion or are impacted by the congested port, and quarantines those devices that are misbehaving.

- **IO Insight**

Proactively monitors I/O performance and behavior data points through integrated network sensors to set baseline application performance and ensure operational stability.

- **VM Insight**

An integrated tool that is an extension of IO Insight, VM Insight enables the same visibility of IO statistics with granularity all the way down to the virtual machine (VM) level. Storage admins will have visibility into performance issues of individual VMs. With VMID+ in FOS 9.1, VM Insight is available end-to-end across the fabric regardless of the array type involved.

# Upgrade to a resilient, autonomous SAN

Legacy infrastructure can limit performance gains from next-generation technologies and leave you exposed to cybersecurity vulnerabilities. Addressing technology obsolescence by simply adding faster switching technology is not enough. Your SAN needs to be able to act autonomously to quickly and efficiently maintain optimal conditions, maximize the performance of your storage resources, and ensure the highest levels of resiliency.

Brocade Gen 7 Fibre Channel does just this. It transforms your current storage network into an autonomous SAN. Gen 7 also hardens your SAN against cybersecurity and other business-continuity challenges that threaten to disrupt data center operations. Thanks to its built-in autonomous SAN capabilities, Gen 7 not only monitors application and network performance, it can also take action to resolve issues and optimize application performance for the highest availability and reliability.

## Make the smart choice for your data center

Talk to your local representative about upgrading today.

**To learn more about Gen 7, visit:**  
**[broadcom.com/modernize-your-san](https://broadcom.com/modernize-your-san)**