

Powerful. Intelligent. Quantum-Safe.

Modernize your infrastructure with Brocade Gen 8,
the cyber-resilient, autonomous foundation engineered
to power your most critical and enterprise AI workloads.

INTERACTIVE GUIDE



Introduction

Brocade Gen 8: Enabling an Intelligent, Quantum-Safe SAN

Technology is evolving fast, and system admins are feeling the pressure. AI-driven workloads, explosive data growth, and always-on applications are pushing your infrastructure harder than ever, demanding more speed, reliability, and efficiency. At the same time, pressure to ensure security compliance and resilience is climbing. As AI and the era of quantum computing open new possibilities, they also introduce sophisticated risks. That's why your storage network can't just be high-performance.

It must be hardened, resilient, and ready for what's coming.

By hardening the SAN against sophisticated threats and integrating AI-powered autonomy, Brocade Gen 8 delivers the industry's most secure, intelligent storage network. It doesn't just transport data; it learns, adapts, and responds in real-time, accelerating decision-making, streamlining operations, and ensuring the highest level of resiliency for your most critical workloads.

In this interactive guide, explore the emerging risks, performance pressures, and operational challenges facing modern data centers, and see how Brocade Gen 8 Fibre Channel is engineered to deliver the power and protection your environment requires.

Click through this guide to learn how Brocade Gen 8 delivers the powerful, intelligent, and quantum-safe SAN your data center demands.

Contents

IT Challenges are Constant

Why Brocade Gen 8?

In today's landscape, organizations face a constant non-stop cycle, balancing 24/7 application availability with the urgent need for infrastructure evolution. The core challenge is a high-stakes trade-off: modernizing to deploy performance at scale for revenue-generating data while simultaneously mitigating new risks and managing overextended personnel.

These internal tensions are amplified by external market pressures, specifically the rapid adoption of AI applications and emerging security threats like quantum computing. AI necessitates a shift toward massive processing power and effective data usage, while quantum advancements require a transition to Quantum Safe architectures. Together with tightening global regulations and compliance, these forces make modernization an operational necessity.

To thrive, enterprises must adopt a strategy to modernize, secure, and automate. By leveraging intelligent, resilient infrastructure, organizations ensure they “keep running no matter what” against evolving cyber threats. Automation is the final critical piece, simplifying IT complexity to reduce personnel workload and shifting the team's focus from manual maintenance to strategic innovation.

You need Brocade Gen 8 Fibre Channel.



Brocade Gen 8: The Evolution of the Fibre Channel

See how Brocade Gen 8 Fibre Channel Defends Your Datacenter in the Quantum Era

[Watch Video](#)

Inside Brocade Gen 8 Feature Overview

Click the icons

Learn more about how Brocade Gen 8 enables the most reliable and efficient way to protect and deliver critical information.

Adaptive Traffic Optimizer

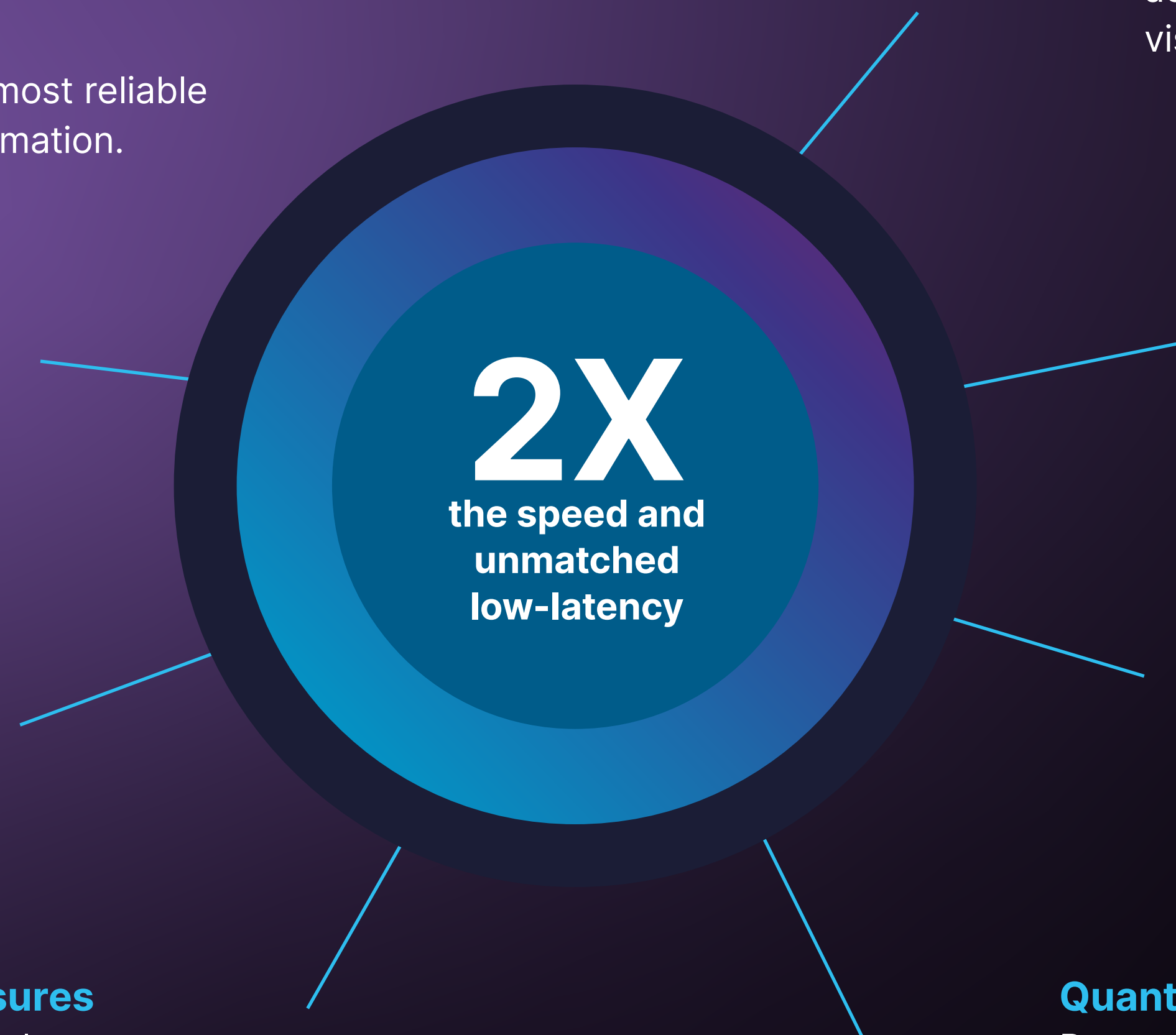
Dynamically load balance traffic across the network to adapt to changing application demands

Principle of Least Privilege Architecture

Harden Fabric OS® software to minimize attack surface with embedded mandatory access controls

Advanced Security Measures

Enhanced anti-tampering technology to reduce the risk of hijacking and the installation of malicious software



SAN Fabric Intelligence

Eliminate time consuming correlation tasks and accelerate troubleshooting with fabric-wide visibility and root cause analysis

Cryptographic Algorithms

Protect SAN fabrics against attacks from quantum computers with post-quantum cryptography

Unified Storage Fabric

Leverages Fibre Channel SAN to transport both Fibre Channel and IP storage traffic

Quantum-Safe In-flight Encryption

Protect your data at all times with end-to-end in-flight encryption

Fortress-Level Security Meets AI-Powered Autonomy

Watch Video

Watch this video to hear Brocade experts AJ Casamento and Marcus Thordal dive into the details, explaining how this security-first foundation gives you total control and protection against escalating cyber threats.

Emerging Security Requirements

Security at the Core

Built-In Protection, Constantly Evolving

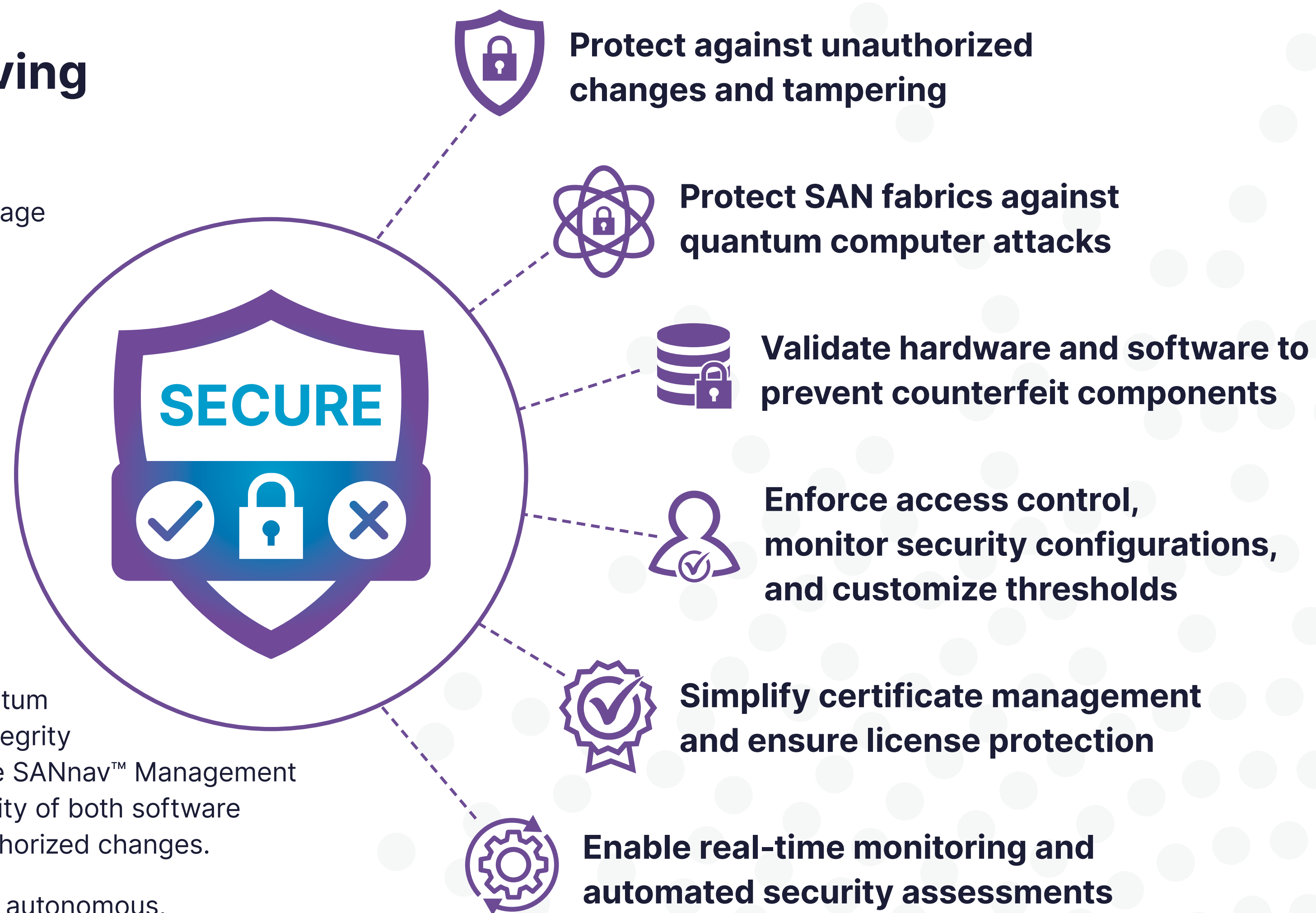
Brocade Gen 8 Fibre Channel represents a fundamental shift in storage networking, delivering a self-defending fabric where security is not a bolt-on feature, it is built-in.

Designed to protect the most mission-critical data, Gen 8 places cyber resiliency at its center.

Its physically secure, point-to-point architecture inherently neutralizes threats by isolating traffic and eliminating the lateral pathways that attackers rely on.

By integrating Post-Quantum Cryptography (PQC) into its secure-by-design foundation, Brocade Gen 8 provides the cryptographic algorithms necessary to neutralize quantum threats, ensuring the fabric evolves to maintain data sovereignty in the quantum era. Gen 8 drives platform-level security by automating software integrity checks (TruFOS) and centralizing security orchestration via Brocade SANnav™ Management Portal. This creates a network that continuously validates the integrity of both software and hardware, shielding the environment from tampering and unauthorized changes.

By removing the guesswork from SAN protection, Gen 8 enables an autonomous, cyber-resilient environment that balances peak performance with a comprehensive defense. The combination of future-proof encryption, hardened hardware, and intelligent automation makes Brocade Gen 8 the premier choice for enterprises that refuse to compromise on the security of their most critical assets.



Additional Integrated Security



Brocade Gen 8 is designed with security in mind and implements many security measures to protect an organization against evolving vulnerabilities, making it the top network choice for mission-critical storage.

Architected with AI-Powered Autonomy

Today's enterprise environments face mounting pressures from massive data growth, escalating performance requirements, and operational complexity that renders manual intervention non-viable. Humans simply cannot respond fast enough to the microsecond demands of modern workloads. Consequently, IT teams using outdated SAN technologies struggle with siloed management, manual provisioning, and limited visibility, alongside performance gaps between technology generations.

To solve this, Brocade Gen 8 creates an intelligent SAN that manages and protects itself, shifting the burden from manual administration to AI-powered autonomy. By integrating embedded SAN AI technology directly into the fabric, Gen 8 translates decades of best practices into automated logic. This shifts operations from manual intervention to a self-sufficient fabric that works independently to:

Learn

**Continuously monitor
and baseline
application behavior**

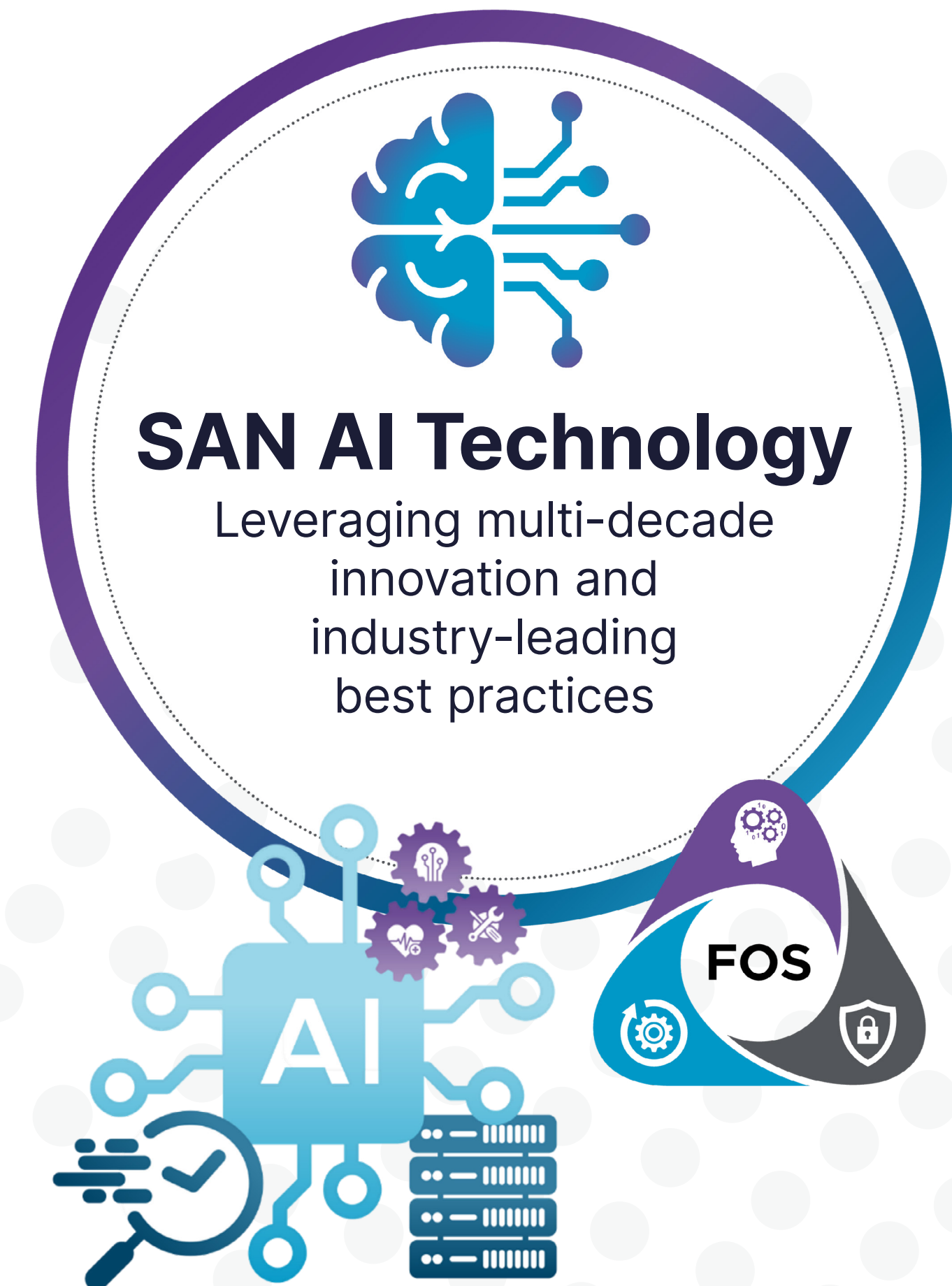
Adapt

**Dynamically rebalance
loads to meet
changing demands**

Respond

**Detect and mitigate
anomalies autonomously to
maintain peak performance**

Brocade Gen 8 doesn't just monitor your network; it modernizes SAN management with a self-optimizing architecture that ensures nonstop operations and superior reliability. With new **SAN Fabric Intelligence (SAN FI)** and **Adaptive Traffic Optimizer** features, Gen 8 simplifies management and provides actionable insights to improve performance, reduce downtime, and streamline operations.



Innovative Capabilities

Use Case: SAN FI Provides Instant Fabric Wide Analysis

Accelerate troubleshooting and drive smarter management decisions

Critical business application is not performing as expected



All IT infrastructure teams are troubleshooting in parallel ad hoc often depending on collaboration to locate the application in the infrastructure



Using SAN FI you can instantly locate the application in the SAN

Determine if the application performance degradation is storage related

Metrics are readily available to pinpoint (and document) either

No: The application performance is not storage related

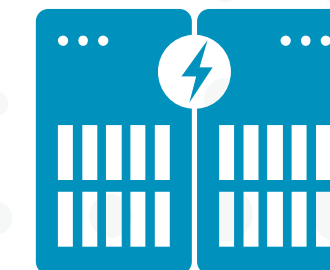
Yes: The application performance is storage related, including root cause analysis and impact



Report back to the application owner:



The application performance is not storage related



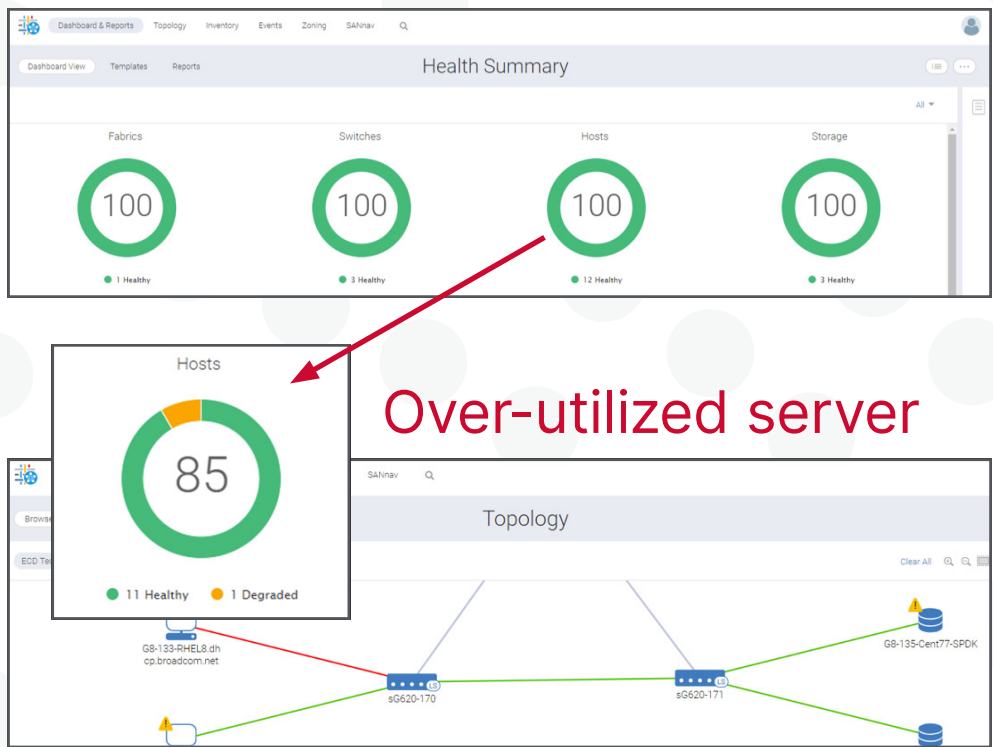
The application performance is storage related, and you can take action to resolve based on the root cause analysis



Use Case: Avoid Performance Degradation

Instantly notify end devices of congestion

Brocade monitors millions of performance and health characteristics



Over time workloads grow and VMs are added per server



Brocade sends notification of congestion to end devices



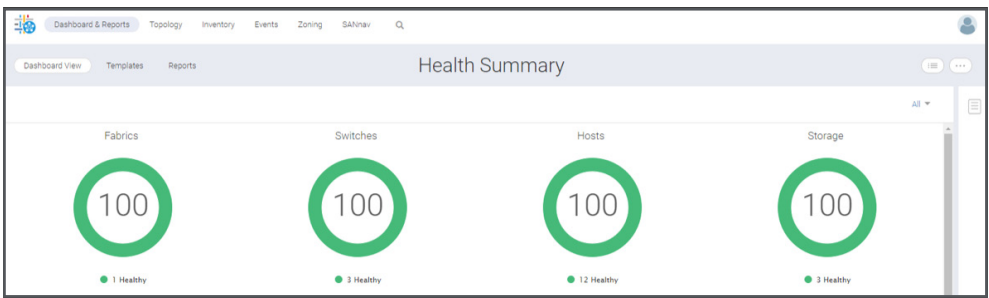
End device (HBA) automatically takes action to address congestion



Server causing the issue is paced to optimize resource utilization



Everything is back to normal



Use Case: Ensure Data Delivery and Failover Faster

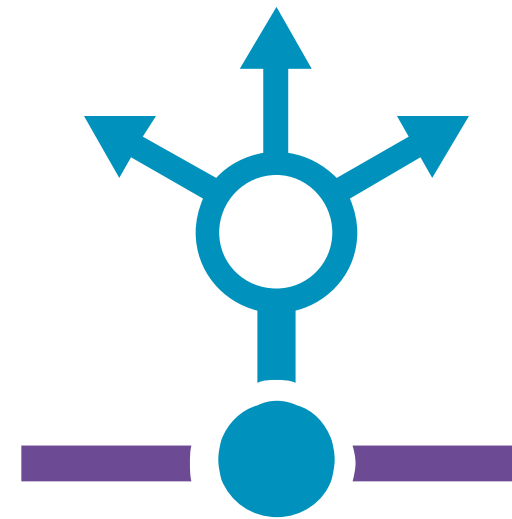
Fail over from physical issues



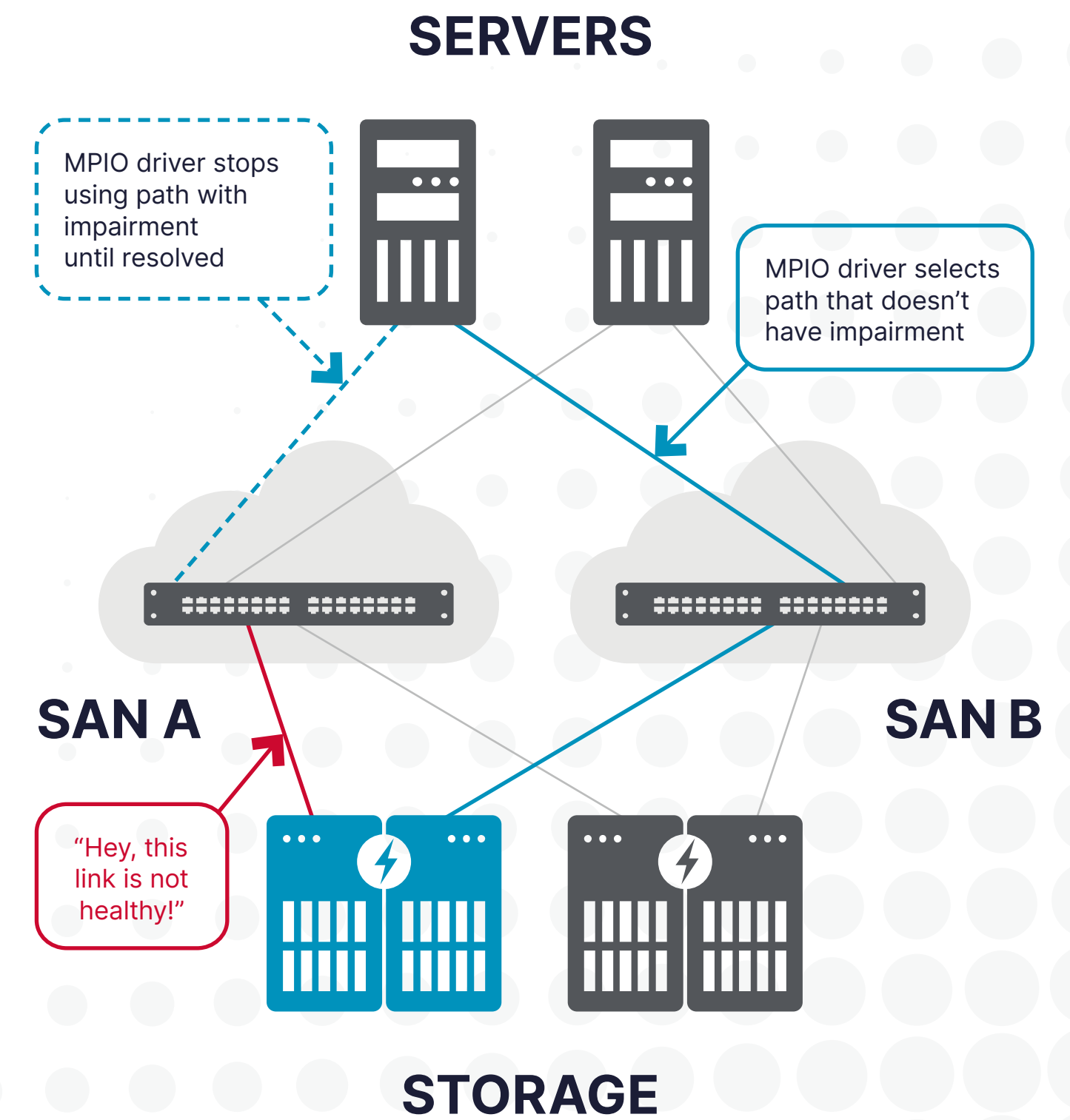
**Continuously monitor
fabric paths**



**Brocade SAN instantly sends
notifications of impairment**



**Automatically fail over
to avoid impaired path
with MPIO**



Use Case: Eliminate Performance Impacts

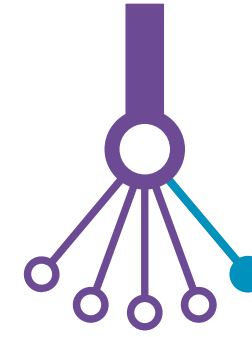
Automatically take corrective action on misbehaving devices



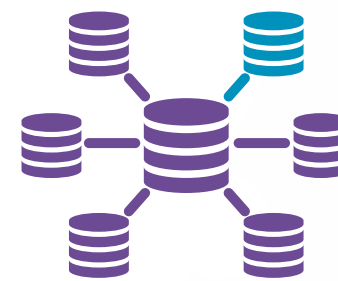
Monitoring detects the slow-drain device



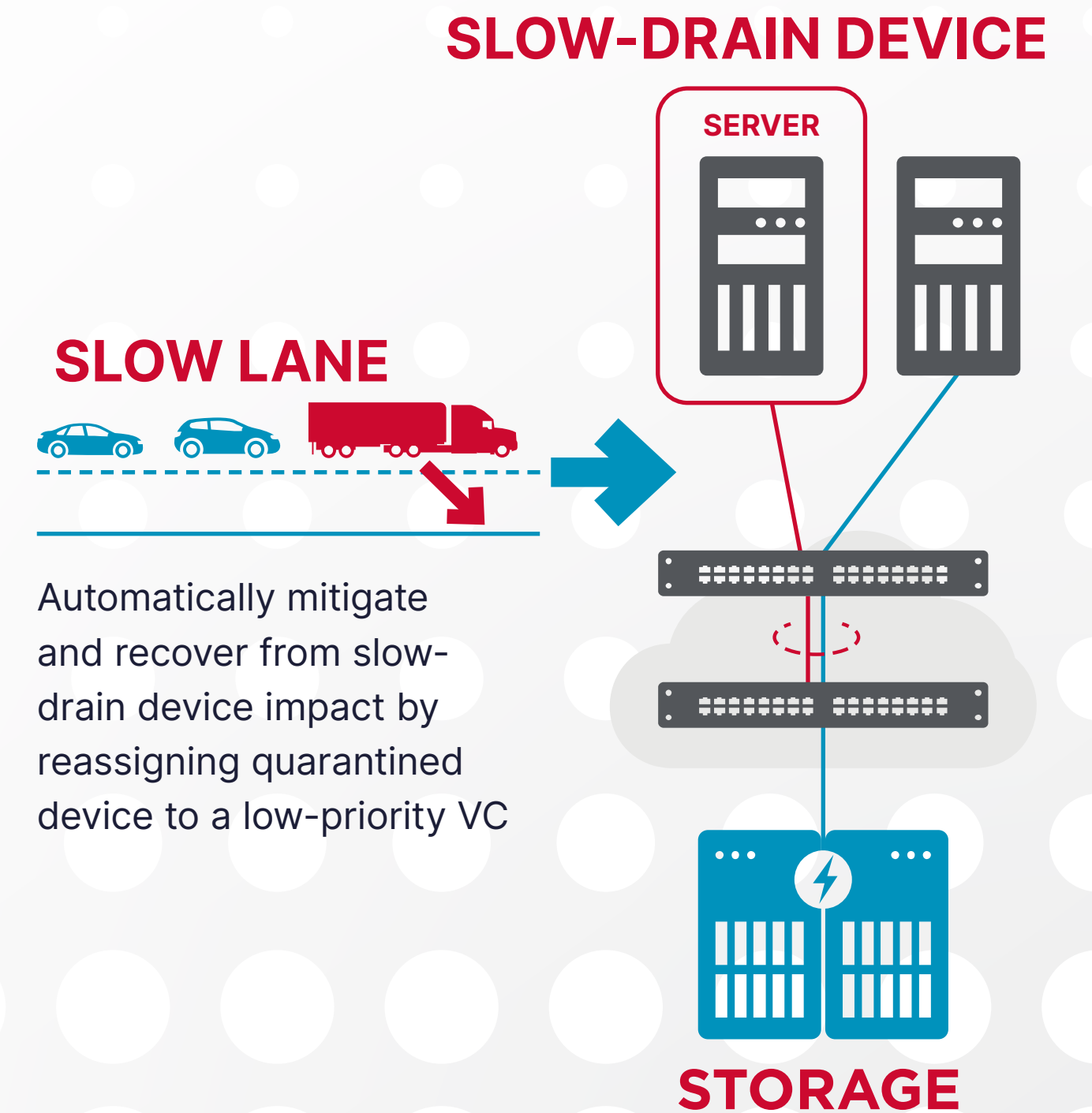
All switches in a fabric informed of the slow-drain device



Flows designated to the slow-drain device reassigned to low-priority VCs



Buffer credits free up for regular flows sharing the same path



Brocade X8 Director

Powerful Foundation for Building Scalable Fabrics with Uncompromising Security

The Brocade X8 Director is a modular platform design to deliver the capacity, throughput, and resiliency, purpose-built to power and secure large-scale storage environments. This director provides a stable, scalable, and high-performance foundation that supports growth, workload consolidation, and reliable operations, making it ideal for fueling and scaling mission-critical and enterprise AI workloads.

With up to 384 × 128G ports, the Brocade X8 Director delivers exceptional bandwidth and throughput required to support growing numbers of devices, applications, and workloads without compromising performance. High bandwidth and ultra-low latency eliminate I/O bottlenecks, delivering maximum performance for high-transaction workloads and next-generation storage. This performance headroom enables organizations to consolidate workloads onto fewer systems.

To further maximize utilization, up to 128 UltraScale ICL links allow the director to scale efficiently with fewer chassis by preserving device ports for device connectivity. The Brocade X8 Director offers flexible deployment options



and multiprotocol support, enabling organizations to adapt their infrastructure and optimize resources to meet the evolving requirements of next-generation storage and servers. For investment protection, Brocade X8 Directors support three generations of backward-compatibility speeds for connectivity to 16, 32 and 64G Fibre Channel devices.

The Brocade X8 Director is built upon years of innovation and leverages the core technology to consistently deliver five-nines availability in the world's most demanding data centers. Delivering nondisruptive software upgrades, hot-pluggable components, and a no-single-point-of-failure design, the Brocade X8 Director offers a highly resilient solution for today's enterprise-class storage environments.

The Brocade X8 Director is engineered to meet continuous data growth and demanding application requirements in large-scale Fibre Channel and IP storage environments. With AnyIO ports, the X8 Director enables a Brocade Unified Storage Fabric (USF) to consolidate IP storage and Fibre Channel onto the same storage network, extending SAN services, centralized management, and dual-fabric resiliency to IP storage workloads.

Brocade®
GEN8
FIBRE CHANNEL

Massive Scalability

Scale up to 384 x 128G ports (X8-8) or 192 ports (X8-4) to support more devices and applications

2x Performance

Double the performance and scale of previous generations

Ultra-Low Latency

Enable faster response time and enhance workload performance

Maximized Density

Maximize VM and application density using industry-leading 128G bandwidth to boost resource utilization

Unified Fabric

Transport both FC and IP storage traffic on the same fabric using AnyIO ports

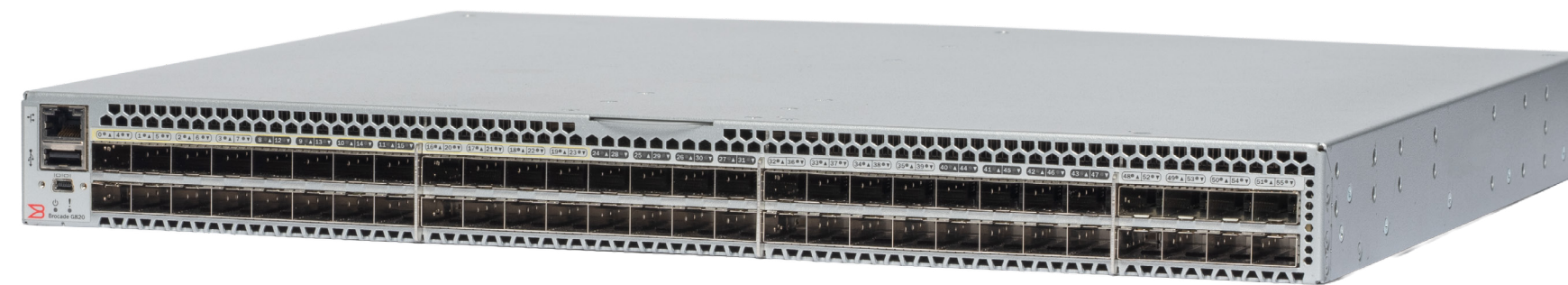
Brocade G820 Switch

Designed to Unleash Performance with Uncompromising Security

Build high-performance fabrics with powerful building blocks

The Brocade G820 Switch is a fixed-port, 1U building block, designed to scale-out fabrics and unleash performance. With 56 ports at 128G and unmatched low latency, in a compact switch design, organizations can accelerate workloads and achieve greater workload density in less space. Offering pay-as-you-grow scalability with Ports on Demand (POD) enables organizations to quickly and easily scale from 24 to 56 ports in 8-port increments on demand.

The Brocade pay-as-you-grow architecture enables flexible, cost-effective scalability by allowing organizations to activate only the ports they need and easily expand as requirements grow, reducing upfront costs, eliminating overprovisioning, and providing seamless, non-disruptive capacity growth. This switch provides convenient access to all software features, unlocking greater value and efficiency. Organizations can immediately utilize essential functionality without having to purchase and manage licenses or install any software.



To simplify SAN operations, the Brocade G820 Switch offers easy-to-use management tools that improve efficiency and provide organizations with greater visibility and control. Brocade Web Tools features a built-in simplified user interface, making it easier to manage everyday tasks. To streamline management workflows, organizations can leverage Brocade SANnav™ Management Portal that features modern dashboards, faster troubleshooting, and accelerated deployment of applications, servers, switches, and storage.

Brocade®
GEN8
FIBRE CHANNEL

Flexible Scalability

Scale from 24 up to 56 x 128G ports to support future data

Maximized Density

Maximize VM and application density within less physical space using a compact 1U switch design

Accelerated Workloads

Accelerate critical application performance with industry-leading 128G bandwidth and unmatched low-latency

All-Inclusive Licensing

Unlock greater value and efficiency with access to all software features in a bundled solution

Brocade Gen 8 Optical Transceivers

The industry's first 128G optical transceiver and Gen 8 OSFP transceivers

Brocade Gen 8 provides the industry's first 128G optical transceivers, optimized and certified for high-performance data center network connectivity. With guaranteed compatibility with Brocade switches and directors, compliance with industry standards, and Brocade support, Brocade transceivers satisfy a wide range of speed, form-factor, and distance requirements.

Brocade 128G SWL SFP+ optical transceiver

Accelerate data access with 128G links to unleash the full performance of next generation storage networks.

- Backward-compatibility support for connectivity to 32/64G Fibre Channel devices
- OM3/OM4/OM4+/OM5 operating distances across 32/64/128G
- Supported in Gen 8 products only
- Supports 25/50/100GbE when plugged into an AnyIO port on a Brocade 48-port blade



Brocade Gen 8 100m OSFP transceiver

Provides extended connectivity for Brocade X8 chassis-to-chassis interconnect.

- Supports up to 100m link length over OM4 multimode fiber
- Operates over 8-channel parallel multimode fiber (MMF) and is OSFP MSA compliant
- Uses industry-standard MPO-16 angled physical contact (APC) connector



Brocade Gen 8 2 km OSFP transceiver

Provides extended connectivity for Brocade X8 chassis-to-chassis interconnect.

- Supports up to 2km link length over single-mode fiber
- Operates over 8-lane parallel duplex single-mode fiber and is OSFP MSA compliant
- Uses industry-standard duplex LC receptacle optical connector



Conclusion

The business always wants faster, more reliable, and more secure data access. To meet those ever-increasing demands, you need a modernized infrastructure that maximizes performance, simplifies management, ensures continuous availability, and strengthens the level of security. The solution you need is Brocade Gen 8 Fibre Channel.

Brocade Gen 8 brings all these capabilities together. Gen 8 hardware platforms, combined with software and integrated security features, will maximize the performance, efficiency, and resiliency of your storage investments and resources. By hardening the SAN against evolving security risks and enabling AI-powered autonomy to learn, adapt, and respond to changing environments, Gen 8 enables faster decision-making, improves operational efficiency, and maintains high levels of security and resiliency.

Brocade Gen 8 is the most secure, intelligent, and scalable foundation you need to create an infrastructure ready to deliver your modern, on-demand data center.





Speak to one of our specialists
about how you can benefit
from Brocade Gen 8 today.

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viewing experience.

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