

# How to Protect Application Performance with Data Storage Fabrics

## HIGHLIGHTS

- Understand why building the right storage network is critical to enabling digital transformation
- Reduce the complexity of multiprotocol data storage systems to improve application performance and reduce costs
- Discover how future-proofing the storage network is key to accessing a new range of ultra-performance solutions
- Learn why Gen 6 Fibre Channel fabrics provide the best platform for an intelligent and future-proof storage infrastructure

## Farewell Single-Protocol Storage Network; Hello Intelligent Storage Infrastructure

IT departments worldwide are seeking new ways to improve the business impact of their storage networks—such as by adopting cloud or hyper-converged architectures—to better support their organizational requirements. Some industry watchers believe that this new focus marks the end of dedicated storage networks and existing network protocols and technologies—namely Fibre Channel—commonly used in storage environments.

Not so. This is not a short-term revolution. Rather, it is a welcome evolution in storage networking, fueled by growing application workloads generated by the digital economy. This trend will see multiple storage protocols traversing on a single fabric. To efficiently support the organization now and in the future, these fabrics must embrace old and new storage approaches and technologies. And they must be able to manage this combination of protocols to optimize application performance without increasing complexity or cost, while providing a reliable, secure, agile, and intelligent infrastructure.

## Digital Adoption Creates Divergent Demands

The accelerated uptake of digital technologies has seen new, digitally enabled business models emerge, along with new routes to market. IT is under increased pressure to deliver and support new digital services for external and internal customers, creating demands on the network that legacy technologies are not engineered to support.

Although IP compute networks can support some level of convergence on the corporate-shared LAN, they are not the ideal choice for handling critical storage traffic. Such shared networks often become congested, and managing them can be extremely complicated. Ensuring the right levels of protection and prioritization is often challenging, especially during unexpected peaks in demand. This means a dedicated data

storage network—Fibre Channel or IP—still offers the best option for performance, network visibility, automation, and scale.

At the same time, the surge in new applications to enable digital services has made it difficult to discern between mission-critical and business-critical applications. Today, some non-critical applications have become central to customer satisfaction—for both internal and external customers. In an environment where an event as minor as a slow loading Web page can create a meaningful barrier to new customers and revenue streams, organizations are having to reconsider the systems and support required by business-critical applications.

In an effort to create the right storage network to address this challenge, many organizations have embraced offsite cloud services and hyper-convergence offerings, and are using a mix of storage network protocols. But this approach can increase complexity, make network management and monitoring more time-consuming, and lead to a higher IT spend—the complete opposite of the situation desired.

A short-term approach may prove risky given the rate of change and the need to embrace new innovations quickly, so it is critical that organizations embrace this reality and keep all of their options open, while securing the immediate improvements required today.

## It Is about Application Workloads, Not Protocols

Debates on how to build an improved storage network often focus on which protocols are best for storage. But as anyone working in the storage environment knows, this is the wrong starting point. Every protocol has specific strengths and weaknesses that make it the best choice for an application based on the specific need of that application. This is why IT has to consider how they can deploy and support a variety of protocols, while providing the agility, availability, security, and speed demanded by digital operations.

Before settling on a specific approach, or creating new storage systems that may be quickly superseded by the demands of new applications or storage innovations, organizations need to first adopt a modern storage infrastructure.

## The Right Dedicated Storage Network

The right storage network makes the running of multiprotocol, complex, and data-intensive systems simpler, faster, and less costly, and provides a future-proof solution. Network resilience means more than the elimination of downtime, it also means preventing any kind of performance slowdown before it occurs. Network security also needs to evolve to have security built in, while increasing the level of protection. And to deliver this, the infrastructure must be highly instrumented, more automated, adaptive, and intelligent.

It is not about either or—Fibre Channel or IP. The new business-critical plus mission-critical paradigm requires both. So the storage infrastructure selected must fully support both, and make management, monitoring, and maintenance (regardless of which is being managed, monitored, or maintained at any given moment) simple and seamless.

The only architecture and solution that can support this range of requirements is a storage fabric, a purpose-built network for storage traffic. Fabrics are:

- Intelligent and automated for fast, simple agility and scale
- More efficient than three-tier topologies, requiring fewer devices to deliver better performance
- Highly interoperable and device-aware for almost autonomous integration
- Secure, offering hardware-based encryption within and between data centers
- Application-aware and self-healing to optimize application and services access, availability, and performance
- Software-enabled for better utilization, ease of management, and lower cost of ownership

Fabrics can be implemented as any combination of Fibre Channel or IP, so they can support both mission-critical and business-critical application requirements. With their low-latency resilience and easy inter-connectivity, they also provide the underlay infrastructure required for

end-to-end network visibility and for supporting analytics, monitoring, and resolution tools. And fabrics further provide such tools predictive and proactive management capabilities, ensuring service performance is protected and optimized in balance with other tasks and processes.

## Future-Ready with Gen 6 Fibre Channel Fabrics

To adopt fabrics and evolve the storage network into an intelligent storage infrastructure, organizations should consider:

- Upgrading now to Gen 6 Fibre Channel for a flash-friendly, performance-rich network with management features for agility and visibility, and the robust reliability demanded by mission-critical systems.
- Adopting a storage networking platform that is engineered for the future. New storage networking solutions should provide Gen 7 compatibility, and must be designed to support the upcoming NVMe over Fabrics protocol currently in development.

Gen 6 Fibre Channel offers industry-leading access to data and application

performance. Latency can be reduced by up to 20 percent, with speeds of up to 128 Gbps to ensure flash-based storage workloads are fully supported. Gen 6 Fibre Channel fabrics also deliver both the performance and managerial capabilities that organizations need today.

While performance is very important, it is not the entire story. The new Brocade® X6 Director family is a Gen 6 solution offering unique features that provide end-to-end visibility and advanced network analytics for unrivalled services, availability, and automated network discovery and recovery. And the challenges presented by dynamic VM workloads can be addressed with advanced VM monitoring and diagnostics, making complex environments much more manageable. These functionality enhancements reduce operational effort and expense, allowing IT resources to focus on other strategic initiatives supporting the organization. And Brocade Gen 6 technologies also provide a future-proof platform, enabling a seamless upgrade to the next generation of Fibre Channel technologies, or the new NVMe over Fabrics, the lowest latency protocol for large storage environments.

## Begin the Evolution to a More Intelligent Infrastructure

Organizations are facing a plethora of options as they look to increase the levels of agility and scale in their networks. But they also need to mitigate the risk of adopting solutions that may be made quickly redundant as new technologies come to market.

Success in the digital economy will challenge everyone, and reward the lucky few who get it right. A modern storage fabric provides the automation, integration, and resiliency organizations need to more easily manage complex, multiprotocol, data-intensive storage networks, while still allowing the adoption of new technologies down the road. By building a modern storage network now, organizations will be able to scale well into the future.

## Brocade Storage Networking

As the leading provider of storage networking solutions worldwide for more than 20 years, supporting the mission-critical systems and business-critical applications of most of the FTSE 500, Brocade offers a range of storage solutions for every organization.

Learn more at [www.brocade.com](http://www.brocade.com).

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