

**Figure 1.** Alternatives for Brocade blade server SAN connectivity.

This unique solution protects investments in existing Brocade 4Gb SAN switches for HP BladeSystem p-Class and c-Class by enabling IT organizations to use them as traditional Brocade SAN switches or operate them in Brocade Access Gateway mode selectable via Brocade Web Tools or the Brocade command line interface. As a result, the Brocade Access Gateway provides a reliable way to integrate HP's state-of-the-art server blades into heterogeneous Fibre Channel SAN environments (see **Figure 1**).

## SAN connectivity for HP BladeSystem

Facilitating broad connectivity for highly scalable, reliable, and manageable SAN environments, the Brocade Access Gateway provides a wide range of features including:

- More flexible fabric interoperability
- Improved scalability
- Simplified management
- Automatic failover and failback
- Adaptable port capabilities

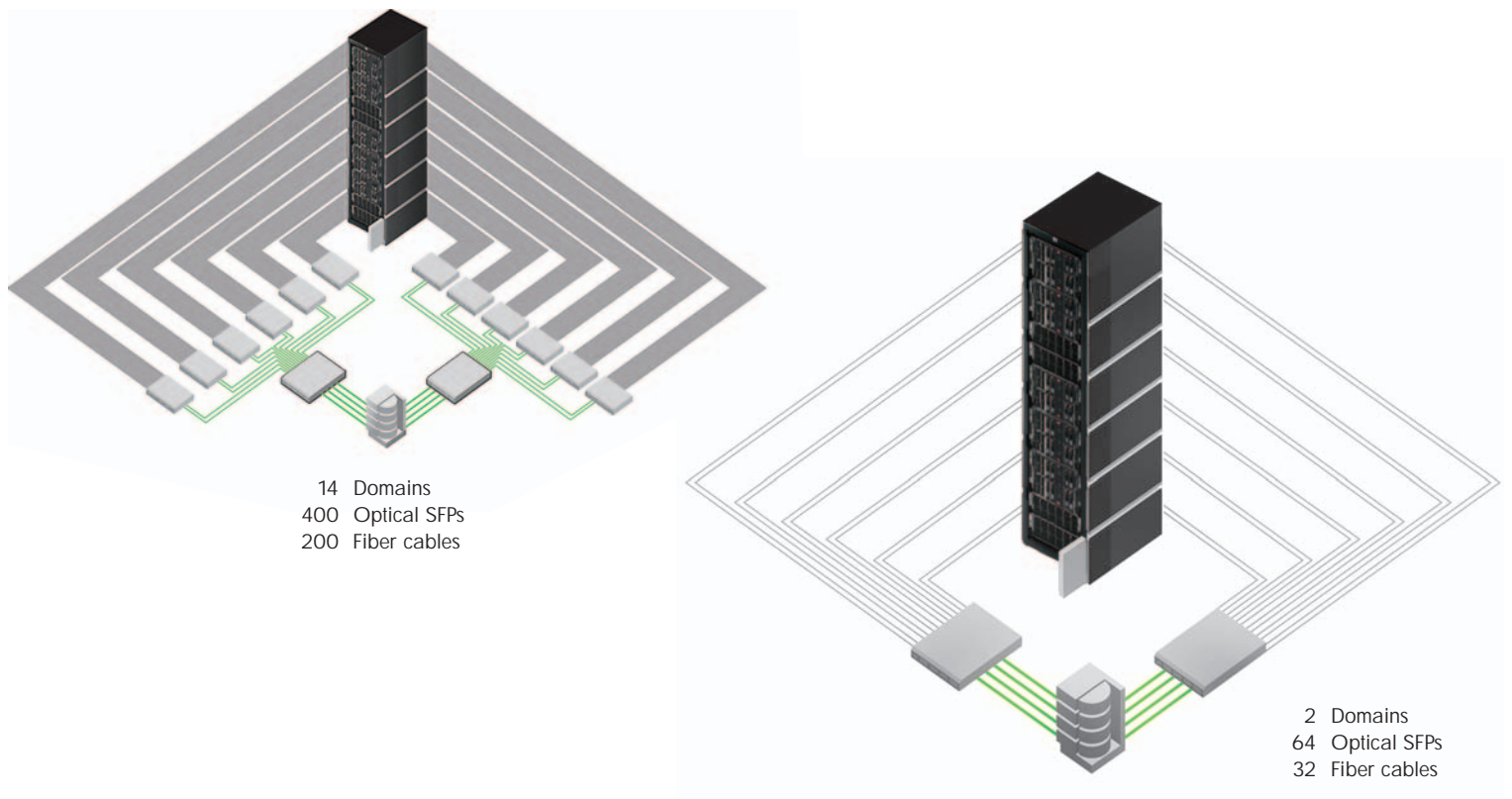
## More flexible fabric interoperability

The Brocade Access Gateway mode eliminates traditional heterogeneous switch-to-switch interoperability challenges. It utilizes N\_Port ID Virtualization (NPIV) switch standards to present server blade Fibre Channel connections as logical devices to SAN fabrics. Attaching through NPIV-enabled switches and directors, the Brocade Access Gateway connects server blades to supported Brocade, McDATA, and Cisco SAN fabrics.

## Improved scalability

Server blades traditionally have connected to SANs one enclosure (chassis) at a time, each time adding two or more switch domains to the fabric. Increasing the number of enclosures also has meant additional switch domains to manage. These additional domains create complexity and can sometimes disrupt fabric operations during the deployment process. To address that challenge, the Brocade Access Gateway simplifies the deployment of HP BladeSystem enclosures into SAN fabrics by presenting server blade Fibre Channel connections (rather than switch domains) to the SAN fabric.

By increasing the number of device ports that can be connected to a single fabric port, the Brocade Access Gateway can also support a much larger fabric. Unlike Fibre Channel pass-through solutions, it can do so without substantially increasing the number of switches (see **Figure 2**).



**Figure 2.** The advantages of the Brocade Access Gateway compared to Fibre Channel pass-through solutions.

## Simplified management

Using the Brocade Access Gateway to connect HP BladeSystem server blades to SAN fabrics eliminates certain management tasks associated with traditional embedded SAN switches. In addition, the Brocade Access Gateway eliminates the potential for fabric disruptions that can result from incremental switches or domains joining an existing fabric. Together, these capabilities significantly reduce management workload and administrative complexity.

### Automatic failover and fallback

To enhance availability, the Brocade Access Gateway automatically and dynamically can fail over the preferred I/O connectivity path in case one or more fabric connections fails. This approach helps ensure that I/O operations finish to completion, even during link failures. Moreover, the Brocade Access Gateway can automatically fail back to the preferred fabric link after the connection is restored, helping to maximize bandwidth utilization.

### Adaptable port capabilities

The Brocade 4Gb SAN switch for HP c-Class BladeSystem includes the Ports on Demand feature, which enables pay-as-you-grow scalability. After the required ports are enabled, the Brocade 4Gb SAN Switches can leverage the flexible Dynamic Ports on Demand feature, so organizations can utilize ports wherever they want regardless of the physical location of the server blade inside the HP BladeSystem c-Class enclosure.

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  - Critical Service
  - Proactive 24 service
  - Support Plus 24 service
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# Brocade Access Gateway specifications

<b>Fabric Operating System</b>	Brocade Fabric OS 5.2.1b or higher
<b>SAN switch support:</b>	Brocade 4Gb SAN Switch for HP c-Class BladeSystem and Brocade 4Gb SAN Switch for HP p-Class BladeSystem*
<b>NPIV switch/director support</b>	See the latest HP StorageWorks B-Series Fabric OS Release Notes for supported fabric information
<b>NPIV limits</b>	Up to 255 NPIV IDs per Brocade Access Gateway external port
<b>Scalability</b>	Up to 30 Brocade Access Gateways connected to a single external switch, depending on the switch's processing capability
<b>Management capabilities</b>	<ul style="list-style-type: none"><li>• Management through Brocade Web Tools</li><li>• Configurable through the Brocade command line interface</li><li>• Management Information Block (MIB) support</li><li>• Simple Network Management Protocol (SNMP)-based services</li><li>• Fabric Device Management Interface (FDMI) for managing attached Fibre Channel HBAs</li><li>• RASLOG for event recording and auditing</li><li>• Secure Shell (SSH) for encrypted telnet sessions</li><li>• RADIUS for enhanced user authentication</li><li>• Registered State Change Notification (RSCN) filtering</li></ul>

## Usage Note

Certain Brocade switch features are not applicable in Brocade Access Gateway mode including: Admin Domains, Brocade Advanced Performance Monitoring, Brocade Advanced Zoning, direct connection to SAN target devices, Brocade Fabric Manager, Fibre Channel Arbitrated Loop support, FICON®, IP over Fibre Channel, Brocade Inter-Switch Link (ISL) Trunking, Brocade Extended Fabrics, Management Services, Name Services (SNS), port mirroring, Brocade Secure Fabric OS®, and SMI-S.

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\* BL30p and BL35p server blades, which use FCAL technology, are not supported in Access Gateway mode of operation.

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