Data Sheet
Fujitsu PRIMERGY BX Fibre Channel Switch 8 Gbit/s 18/8 (Brocade 5450)

High performance SAN access

PRIMERGY BX Fibre Channel Switch 8 Gbit/s 18/8 (Brocade 5450)

Blade Server and Fibre Channel SANs form an ideal infrastructure for maximizing consolidation and server virtualization benefits. By connecting blade servers and SAN switch platforms of the highest density Fujitsu and Brocade offer extraordinary performance, reliability and flexibility. PRIMERGY BX Blade Servers can benefit from the technology used in the Brocade DCX Backbone via the Brocade switches. The advantages: more end-to-end performance, higher service quality (QoS) and availability management. These extended fabric services simplify SAN management and automate administrative tasks, thus maximizing performance and availability.

As a result of the low number of SAN components and without any additional fans or power supply units, the Brocade 5450 reduces SAN complexity and avoids many of the usual HW failures. Extended SAN management, redundant I/O paths and the hot-plug design mean that the PRIMERGY BX blade servers have the highest availability and failsafe levels.

Up to 18 internal server blade ports are consolidated to a maximum of 8 shared SAN ports. This greatly reduces the number of cables, SFPs and core fabric ports. Only half the number of ports and Inter-Switch Links (ISLs) are required for the same workload with enough reserve for growth and expansion. Using the doubled bandwidth of 4 Gb networks, each server blade can host more virtual machines, thus guaranteeing greater performance and availability.
# Features & Benefits

## Features & Benefits

<table>
<thead>
<tr>
<th>Main Features</th>
<th>Benefits</th>
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<tr>
<td><strong>Four times in the system for high overall throughput</strong></td>
<td>- Maximizes bandwidth and performance in order to support the most demanding use of server blades and virtual servers</td>
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<td>- 8 Gbit/s Fibre Channel technology, installation in connection bays 2 to 4 of BX400 S1, and in connection bays 3 to 6 of BX900 S1 system unit</td>
<td>- Reduces costs and complexity by consolidating bandwidth, ports and cables</td>
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<td><strong>Optimal consolidation</strong></td>
<td>- Low-priced scaling for growing environments; enables a flexible configuration of the server or the SAN ports with on-demand extension to 26 ports</td>
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<td>- Housing with up to 26 ports (18 internal server ports and 8 external SAN ports)</td>
<td>- Secures investments in existing storage and SAN devices</td>
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<td><strong>Variable for every requirement</strong></td>
<td>- Increases the availability via automatic failover to the next available or assigned port</td>
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<td>- Models with 26 and 14 ports, with dynamic ports and ports on-demand extension for models with 14 ports</td>
<td>- Centralization and automation of Brocade fabric administration; solves the challenges arising from interoperability and scaling domains and also simultaneously simplifies fabric administration.</td>
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<td><strong>For all the current network rates</strong></td>
<td>- Centralizes and automates management of Brocade fabrics; solves interoperability and domain scalability challenges while simplifying fabric management</td>
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<td>- Autosensing and speed matching connections for 8/4/2 Gb FC devices</td>
<td>- Improves visibility into the fabric for more effective design, planning, tuning and optimization</td>
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<td><strong>Always secured</strong></td>
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<td>- Automatic failover of I/O paths and fallback</td>
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<tr>
<td>- Extended port group management; Access Gateway (NPIV) connection.</td>
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<tr>
<td>- Enhanced Group Management; Access Gateway (NPIV) connectivity</td>
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<tr>
<td>- Advanced Performance Monitoring: Visualize end-to-end performance of the fabric (optional)</td>
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Technical details

PRIMERGY BX Fibre Channel Switch 8 Gbit/s 18/8 (Brocade 5450)

Connection type
SAN Connection Blade
8 Gb Fibre Channel Switch with 4x 8Gb SWL SFP+ modules included

The following licenses are included in the 14 port and 26 port basic unit:
Access Gateway
Brocade Full Fabric
Brocade Enhanced Group Management

Supported system units
PRIMERGY BX400 S1, PRIMERGY BX900 S1, PRIMERGY BX900 S2

Max. number per BX unit
3 in PRIMERGY BX400 S1, 4 in PRIMERGY BX900 S1/S2

Supported Server Blades
all PRIMERGY BX9xx and BX25xx Server Blades

Supported Mezzanine Cards
PRIMERGY BX FC Mezz Card 8 Gbit/s 2 port (MC-FCB2E)

Upgrade options
Port License upgrade from 14 to 26 ports (only for 14 port unit)
Brocade ISL Trunking
Brocade Fabric Watch
Brocade Extended Fabric
Brocade Enterprise Bundle (includes ISL Trunking, Advanced Perf. Monitoring, Extended Fabric, Fabric Watch)

Interfaces

Down-link ports
18 x 8 Gbit/s FC

Up-link ports
8 x Universal (SFP, SFP+)
Port types: 8 Gb, 4 Gb, 2 Gb or 1 Gb full duplex, auto-sensing
FL_Port, F_Port, M_Port and E_Port self-discovery based on switch type

Optional port type control in Brocade Access Gateway mode:
F-Port and NPIV-enabled N_Port

Management ports
External: 1x 10/100 Mb Ethernet (RJ45)
Internal: 1x serial port (RS-232 via mid plane)
2x 10/100 Mb Ethernet (via mid plane)

Note: Only one 10/100 Mb Ethernet port active as the same time

Supported Interface Modules / Cables

Order code Application Type / mode Connector / cable Length

Interface Module notes
Only Fujitsu certified modules are supported
Max. distance varies according to FC speed and cable type

Technical specifications

Link aggregation
ISL trunking with up to eight 8 Gb ports per ISL trunk for up to 64 Gb with optional license

Fibre Channel features
Scalability: Max. 239 switches
Certified: 56 domains, 19 hops, larger fabrics on request
ISL trunking: Up to eight 8 Gb ports per ISL trunk for up to 64 Gb (optional)
Full bandwidth: 208 Gb: 26 ports x 8 Gb (data rate)
Fabric delay: 700ns without contention, cut-through routing at 8Gb/s
Frame size: Max. 2112 bytes
FC service classes: Class 2, 3, class F (inter-switch frames)

Fibre Channel notes
Brocade provides links to a number of Fibre Channel standards organizations.
These organizations provide a variety of Fibre Channel documents that you can view and download.
Access the links to these organizations at:

Interoperability
Brocade 2xxx, 3xxx, 4xxx, 5xxx and Director family switches
Access Gateway Mode supports Brocade, McDATA and Cisco fabrics
## Technical Specifications

### Management
- Telnet, HTTP, SNMP v1/v3 (FE MIB, FC Management MIB);
- Auditing, Syslog, Change Management tracking;
- Brocade Advanced Web Tools;
- Brocade DCFM Professional/Enterprise;
- SMI-S compliant, SMI-S scripting toolkit, Administrative Domains

### Dimensions / Weight
- **Dimensions (W x D x H)**: 192.6 x 267.9 x 27.9 mm
- **Weight**: ca. 1.5 kg

### Environment
- **Temperature note**: See corresponding PRIMERGY BX System Unit

### Electrical values
- **Active power (max. configuration)**: 55 W
- **Heat emission (max. configuration)**: 198.0 kJ/h (187.7 BTU/h)
- **Electrical value notes**: Without SFP/SFP+ modules

### Compliance
- **Germany**: GS
- **Europe**: CE Class A *
- **USA/Canada**: ULc/us, FCC Class A
- **Global**: CB
- **RoHS**: WEEE
- **Japan**: VCCI:V3 Class A + JIS 61000-3-2
- **Australia/New Zealand**: C-Tick
- **Taiwan**: BSMI

### Compliance notes
In combination with corresponding PRIMERGY BX system unit
- There is general compliance with the safety requirements of all European countries and North America. National approvals required in order to satisfy statutory regulations or for other reasons can be applied for on request.
- **Warning**: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### Compliance link
- [https://sp.ts.fujitsu.com/sites/certificates](https://sp.ts.fujitsu.com/sites/certificates)
Fujitsu platform solutions
In addition to Fujitsu PRIMERGY BX Fibre Channel Switch 8 Gbit/s 18/8 (Brocade 5450), Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing Products
www.fujitsu.com/global/products/computing/

Software
www.fujitsu.com/software/

More information
Learn more about Fujitsu PRIMERGY BX Fibre Channel Switch 8 Gbit/s 18/8 (Brocade 5450), please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.

Fujitsu green policy innovation

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