

Datasheet

Brocade 6505

Fibre Channel switch

FLEXIBLE, EASY-TO-USE ENTERPRISE-CLASS SAN SWITCH FOR PRIVATE CLOUD STORAGE

To keep pace with growing business demands, data centers are transitioning to highly virtualized, private cloud storage environments. This approach enables organizations to consolidate and simplify their IT resources, resulting in increased business agility and lower capital and operating expenses. But virtualization is not without its challenges. Data centers must keep up with the explosive data growth and dynamic changes driven by virtualized workloads. Selecting the right network is key to realizing the full benefits of these cloud-based architectures.

The Brocade® 6505 Switch provides exceptional price/performance value, combining flexibility, simplicity, and enterprise-class functionality in an entry-level switch. Designed to enable maximum flexibility and reliability, the Brocade 6505 is configurable in 12 or 24 ports and supports 2, 4, 8, or 16 Gbps speeds in an efficiently designed 1U package. It comes standard with a single power supply with integrated fans. A second, optional power supply provides additional redundancy for increased resiliency. A simplified deployment process and a point-and-click user interface make the Brocade 6505 both powerful and easy to use. Moreover, the Brocade 6505 offers low-cost access to industry-leading Storage Area Network (SAN) technology while providing "pay-as-you-grow" scalability to meet the needs of an evolving storage environment.

EXCEPTIONAL PRICE/PERFORMANCE FOR GROWING SAN WORKLOAD

The Brocade 6505 combines market-leading throughput with an affordable switch form factor, making it ideal for growing SAN workloads. The 24 ports produce an aggregate 384 Gbps full-duplex throughput; any eight ports can be trunked for 128 Gbps Inter-Switch Links (ISLs). Exchange-based Dynamic Path Selection (DPS) optimizes fabric-wide performance and load balancing by automatically routing data to the most efficient and available path in the fabric. It augments Brocade ISL Trunking to provide more effective load balancing in certain configurations.

In addition, the Brocade 6505 provides a low Total Cost of Ownership (TCO) thanks to a 12-port base configuration, easy administration, 1U footprint, and low-energy consumption—0.22 watts per Gbps and 3.3 watts per port. Enterprise-class capabilities combined with a low TCO yield 40 percent higher performance compared to 10 Gigabit Ethernet (GbE) alternatives at a similar cost.

INDUSTRY-LEADING TECHNOLOGY THAT IS FLEXIBLE, SIMPLE, AND EASY TO USE

The Brocade 6505 delivers industry-leading SAN technology within a flexible, simple, and easy-to-use solution. The base configuration includes 12 ports, with up to 24 ports on demand. In addition to providing best-in-class scalability, the Brocade 6505 is easy to deploy with the Brocade EZSwitchSetup wizard and the new "D_Port" feature, which simplifies setup.

A BUILDING BLOCK FOR VIRTUALIZED, PRIVATE CLOUD STORAGE

The Brocade 6505 provides a critical building block for today's highly virtualized, private cloud storage environments. It simplifies server virtualization and Virtual Desktop Infrastructure (VDI) management while meeting the high-throughput demands of Solid State Disks (SSDs). The Brocade 6505 also supports multi-tenancy in cloud environments through Quality of Service (QoS) and fabric-based zoning features.



Green Policy Innovation

Green Product

This product cleared our company's original evaluation standard which followed global environmental measures.

Features and benefits

Main features	Benefits
Price/performance value within a flexible, cost-effective, and easy-to-use 1U form factor	<ul style="list-style-type: none">■ Supports 2, 4, 8, or 16 Gbps speeds■ The 24 ports produce an aggregate 384 Gbps full-duplex throughput■ Enterprise-class functionality in an entry-level switch
Flexible ports on demand	<ul style="list-style-type: none">■ Capabilities of highly virtualized, private cloud storage environments■ "Pay-as-you-grow" scalability■ The delivered 12 ports can easily upgrade to 24 by activating the port license
Maximizes resiliency with an optional redundant power supply	<ul style="list-style-type: none">■ It comes standard with a single power supply with integrated fans. A second, optional power supply provides additional redundancy for increased resiliency

Technical details

Systems Architecture

Fibre Channel ports	Switch mode (default): 12- and 24-port configurations (12-port increment through Ports on Demand [PoD] license); universal (E, F, M, D, EX) ports Brocade Access Gateway default port mapping: 16 F_Ports, 8 N_Ports
Scalability	Full fabric architecture with a maximum of 239 switches
Certified maximum	6000 active nodes; 56 switches, 19 hops in Brocade Fabric OS® fabrics; 31 switches, three hops in Brocade M-EOS fabrics; larger fabrics certified as required
Performance	Auto-sensing of 2, 4, 8, and 16 Gbps port speeds
ISL Trunking	Frame-based trunking with up to eight 16 Gbps ports per ISL trunk; up to 128 Gbps per ISL trunk. Exchange-based load balancing across ISLs with DPS included in Fabric OS. There is no limit to how many trunk groups can be configured in the switch.
Aggregate bandwidth	384 Gbps end-to-end full duplex
Fabric latency	Latency for locally switched ports is 700 ns; Forward Error Correction (FEC) adds 400 ns between E_Ports (enabled by default).
Maximum frame size	2112 byte payload
Frame buffers	8192 dynamically allocated
Classes of service	Class 2, Class 3, Class F (inter-switch frames)
Port types	D_Port (Diagnostic Port), E_Port, EX_Port, F_Port, M_Port (Mirror Port); self-discovery based on switch type (U_Port); optional port type control Brocade Access Gateway mode: F_Port and NPIV-enabled N_Port
Data traffic types	Fabric switches supporting unicast
Media types	Hot-pluggable, industry-standard Small Form-Factor Pluggable (SFP+), LC connector; Short-Wavelength (SWL), Long-Wavelength (LWL); Extended Long-Wavelength (ELWL); distance depends on fiber optic cable and port speed. Supports SFP+ (8 and 16 Gbps) optical transceivers.
Fabric services	Brocade Advanced Performance Monitoring (including Top Talkers for E_Ports, F_Ports, and Fabric mode); Brocade Adaptive Networking (Ingress Rate Limiting, Traffic Isolation, QoS); Bottleneck Detection; Brocade Advanced Zoning (default zoning, port/MWN zoning, broadcast zoning); Dynamic Fabric Provisioning (DFP); Dynamic Path Selection (DPS); Brocade Extended Fabrics; Enhanced BB credit recovery; Brocade Fabric Watch; FDMI; Frame Redirection; Frame-based Trunking; FSPF; IPoFC; Brocade ISL Trunking; Management Server; NPIV; NTP v3; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Server Application Optimization (SAO); Simple Name Server (SNS)

Note: Some fabric services do not apply or are unavailable in Brocade Access Gateway mode.

Management

Supported management software	HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; Brocade Advanced Web Tools, Advanced Performance Monitoring, Brocade Fabric Watch; Brocade Network Advisor SAN Enterprise or Brocade Network Advisor SAN Professional/Professional Plus; Command Line Interface (CLI); SMI-S compliant; Administrative Domains; trial licenses for add-on capabilities; Fujitsu ETERNUS SF Storage Cruiser
Security	DH-CHAP (between switches and end devices),FCAP switch authentication; FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP with IPv6, Port Binding, RADIUS, User-defined Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SFTP, SSH v2, SSL, Switch Binding, Trusted Switch

Management(Continued)

Management access	10/100 Mbps Ethernet (RJ-45), in-band over Fibre Channel, serial port (RJ-45), and one USB port
Diagnostics	D_Port offline diagnostics, including electrical/optical loopback, link traffic/latency/distance; POST and embedded online/offline diagnostics, including environmental monitoring, FCping and Pathinfo (FC traceroute), frame viewer, non-disruptive daemon restart port mirroring (SPAN port), optics health monitoring, power monitoring, RAStrace logging, and Rolling Reboot Detection (RRD)

Mechanicals

Enclosure	Back-to-front airflow; power from back, 1U
Size	Width: 437.64 mm (17.23 in.) Height: 43.18 mm (1.7 in.) Depth: 443.23 mm (17.45 in.)
System weight	7.82 kg (17.25 lb) with one power supply, without transceivers 9.16 kg (20.19 lb) with two power supply FRUs,without transceivers

Environments

Temperature	Operating: 0°C to 40°C Non-operating: -25°C to 70°C
Humidity	Operating: 10% to 85% (non-condensing) Non-operating: 10% to 90% (non-condensing)
Altitude	Operating: up to 3000 meters Storage: up to 12 km
Shock	Operating: 20G, 6 ms half-sine Non-operating: 33G, 11 ms, Half sine
Vibration	Operating: 0.5 g sine, 0.4 grms random, 5 to 500 Hz Non-operating: 2.0 g sine, 1.1 grms random, 5 to 500 Hz
Heat dissipation	24 ports at 338 BTU/hr

Power

Power supply	Base switch includes a single, hot-swappable power supply with integrated system cooling fans. Optional dual redundant hot-swappable power supply.
AC input	85 V to 264 V ~5 A to 2.5 A
Input line frequency	47 to 63 Hz
Power consumption	80 watts with all 24 ports populated with 16 Gbps SWL optics 60 watts for empty chassis with no optics

Safety

The 6505 complies with the following safety certifications:	Bi-Nat UL/CSA 60950-1 2nd Ed or latest EN60950-1: 2006+A11:2009 IEC60950-1: 2005 or latest GB4943-2001 and GB9254-1998 or latest(DCX 8510 Power supplies) CNS 14336(94) or latest
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More information

Fujitsu platform solutions

In addition to Brocade 6505 Fibre Channels switch, 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/services/computing/
- PRIMERGY: Industry standard server
- SPARC Enterprise: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system

Software

www.fujitsu.com/software/
- Interstage: Application infrastructure software
- Systemwalker: System management software

More information

Learn more about Brocade 6505 Fibre Channels switch, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
www.fujitsu.com/eternus/

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:
www.fujitsu.com/global/about/environment/



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