

Designed for cost-effective business continuity and infrastructure simplification solutions



IBM TotalStorage SAN04M-R multiprotocol SAN router



Two Fibre Channel ports and two Gigabit Ethernet ports in 1U of rack space

Highlights

- **Extends SAN infrastructure over IP networks for cost-effective metro and global business continuity solutions**
- **Offers iSCSI server SAN connectivity for cost-effective infrastructure simplification solutions**
- **Designed for high throughput with 1 Gigabit per second (Gbps) Fibre Channel and Gigabit Ethernet (GbE) with Fast Write and compression to help improve performance over long distances**
- **Interoperability with IBM TotalStorage® SAN m-type (McDATA®) family helps provide switch investment protection**
- **Includes SANvergence Manager for router and network management**

Cost-effective IBM TotalStorage solutions

Simplify storage infrastructure and protect business continuity with the IBM TotalStorage SAN04M-R multiprotocol SAN router. Cost-effective business continuity solutions over metropolitan and global IP networks include remote IBM TotalStorage tape libraries with IBM Tivoli® Storage Manager data protection software and remote mirroring with IBM TotalStorage Resiliency Family. Infrastructure simplification solutions for IBM @server® xSeries®, iSeries™ and pSeries® include iSCSI server integration with IBM TotalStorage disk storage arrays.

Business continuity solutions

Midrange and large enterprises with remote site business continuity requirements require cost-effective, simple and secure SAN extension capability. SAN routing provides connectivity between local sites and remote sites over existing IP infrastructures to help enhance data protection and disaster tolerance.

The IBM TotalStorage SAN04M-R provides distance independent SAN routing for cost-effective, high performance metro and global business continuity solutions. The router is also designed to provide SAN routing between SAN sites while preserving separate fabric fault isolation, security and management. This connectivity helps create consolidated remote tape library data protection and metro mirror and global mirror disaster tolerant solutions.

Infrastructure simplification solutions

Growing availability of iSCSI server capabilities has created the opportunity for low cost iSCSI server integration and storage consolidation. The IBM TotalStorage SAN04M-R provides iSCSI attachment for iSCSI servers using existing IP networks. This can help integrate “stranded” servers spread across a distributed enterprise into the midrange and enterprise SAN infrastructure, thus extending the benefits and centralized management processes to remote sites. With SAN routing, comprehensive, flexible IBM TotalStorage Open Software Family storage software solutions can be extended to the edge of the enterprise and beyond.

High performance

The IBM TotalStorage SAN04M-R router is designed to deliver 1 Gbps, full-duplex throughput across two Fibre Channel ports. Gigabit Ethernet ports are designed to operate at full wire-rate.

Fast Write technology helps provide improved performance over global distance. Data compression can help improve effective throughput.

High-availability features

Enterprise SAN users require high-availability switch fabric solutions. The IBM TotalStorage SAN04M-R multi-protocol SAN router uses advanced application-specific integrated circuits (ASICs) to help minimize the number of internal components and improve reliability. The SAN04M-R router is offers hot-swappable, load-sharing dual power supplies that allow the router to remain online if one power supply fails. Dual power cords allow attachment to separate power sources to help further improve availability. Hot-swappable power supplies and redundant cooling fans help reduce or eliminate downtime for service when replacing a failed component and help reduce or eliminate the risk of erroneously cabling a replacement router because of a simple component failure. Hot-pluggable optical transceivers are designed to be replaced without taking the router offline.

Configuration flexibility

The router includes two Fibre Channel ports for SAN fabric attachment; two multi-service intelligent ports for Internet Fibre Channel Protocol (iFCP) and Internet SCSI (iSCSI) connections; and four shortwave SFP transceivers. Base

router firmware provides iSCSI services. **Standard iFCP** feature is designed to provide iFCP for the SAN extension over distance. **Enterprise iFCP** feature is designed to provide iFCP with Fast Write and Compression for SAN extension over distance. iFCP technology provides isolation between the local and remote SAN fabrics.

For large enterprises with remote site requirements, IBM SAN04M-R routers located in remote sites may be connected over IP networks to IBM SAN16M-R routers in the data center to provide increased flexibility and help reduce total cost of ownership.

Switch investment protection

IBM TotalStorage SAN04M-R router is fully interoperable with IBM TotalStorage SAN m-type (McDATA) switches and directors. SANvergence Manager (standard feature) provides router configuration management for metro and global SAN extension solutions. The optional SANvergence Manager Enterprise feature provides additional capabilities for multiple router configurations such as management of multiple sites from a single instance of SANvergence, expanded zone management and LUN mapping to help simplify management of more complex enterprise SANs. McDATA Enterprise Fabric Connectivity Manager (EFCM) can launch SANvergence Manager simplifying installation and administration.

IBM TotalStorage SAN04M-R at a glance

Product characteristics

Product Number	2027-R04
Base router	Two Fibre Channel ports, two IP ports, four tri-mode shortwave transceivers, iSCSI services, SANvergence Manager, rack mount kit
IP interface	Gigabit Ethernet (1,000 Mbps), Fast Ethernet (100 Mbps)
Fibre Channel interface	E_Port, F_Port, FL_Port,
Fans and power supplies	Dual replaceable power supplies and power cords
Hot-swap components	SFP transceivers, power supplies and cooling fans
Rack support	19-inch, industry standard rack
Management software	SANvergence Manager, Element Manager
Servers supported*	IBM @server xSeries, BladeCenter™, pSeries and iSeries; selected Sun and HP
Storage supported*	IBM TotalStorage DS4000; DS6000 disk; DS8000; 3590, 3592 and 3594 tape; 3581, 3582, 3583 and 3584 and 3588 tape; SAN Volume Controller
Fibre Channel Switch supported*	IBM TotalStorage SAN m-type and McDATA switches and directors
Warranty (standard)	12 month on-site 24x7 same day with 4 hour response

Optional features

Standard iFCP
Enterprise iFCP with Fast Write and compression
Enterprise SANvergence Manager
Multimode and singlemode cables and couplers

Physical characteristics

Height	44 mm/1.7 in (1RU)
Width	436.4 mm/17.2 in
Depth	440.7 mm/17.4 in
Weight	6.35 kg/14.0 lbs

Operating environment

Temperature	5° C to 40° C/41° F to 104° F
Relative humidity	20% to 85%

Electrical requirements

Power	100/120 and 220/ 240 VAC, 50 to 60 Hz
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* For most current and complete details, refer to ibm.com/totalstorage/SAN/m-type

For more information

Contact your IBM representative or
IBM Business Partner or visit

ibm.com/totalstorage/san/m-type



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July 2005
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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated.

Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.

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