

Designed for data center infrastructure simplification and global business continuity solutions



## IBM TotalStorage SAN16M-R multiprotocol SAN router



Twelve Fibre Channel ports and four Gigabit Ethernet ports in 1U height

### Highlights

- **Designed to enable SAN island consolidation for secure data center infrastructure simplification solutions**
- **Offers iSCSI server SAN connectivity for low cost infrastructure simplification solutions**
- **Helps provide SAN routing over distance for metro and global business continuity solutions**
- **Designed for high throughput with 1 and 2 Gigabit per second (Gbps) Fibre Channel and Gigabit Ethernet (GbE) with Fast Write and compression**
- **Interoperability with IBM TotalStorage® SAN m-type (McDATA®) family helps provide switch investment protection**
- **Includes SANvergence Manager for router and network management**

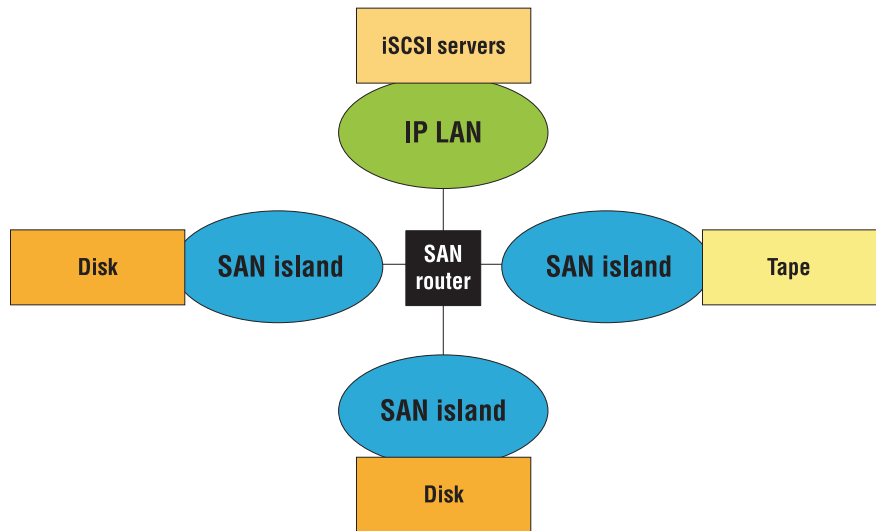
### IBM TotalStorage enterprise solutions

A wide range of IBM TotalStorage® enterprise storage area network (SAN) infrastructure simplification and business continuity and information life-cycle management solutions can be created with the IBM TotalStorage SAN16M-R multiprotocol SAN router. Infrastructure simplification solutions for IBM @server® xSeries®, iSeries™ and pSeries® include iSCSI server integration and SAN island consolidation with IBM TotalStorage disk storage arrays. Business continuity solutions include disaster tolerance over metropolitan and global IP networks with IBM TotalStorage tape libraries and IBM Tivoli® Storage Manager data protection software and IBM TotalStorage Resiliency Family. Information lifecycle management solutions include tiered storage with IBM TotalStorage SAN Volume Controller.

### Infrastructure simplification solutions

Customers have deployed multiple SAN islands for different applications with different fabric switch solutions. This limits deployment of integrated enterprise information lifecycle management solutions with IBM TotalStorage SAN Volume Controller, infrastructure simplification solutions with IBM SAN File Systems and business continuity systems with IBM TotalStorage tape libraries and IBM Resiliency Suite disk storage solutions. Growing availability of iSCSI server capabilities has created the opportunity for low cost iSCSI server integration and storage consolidation.

The IBM TotalStorage SAN16M-R multi-protocol SAN router provides IP LAN connectivity to existing data center SAN infrastructures. It also is designed to provide SAN routing between multiple SAN islands while preserving separate fabric fault isolation, security and management. This can help create a tiered data center SAN infrastructure with improved network stability, simplified network management and extended scalability.



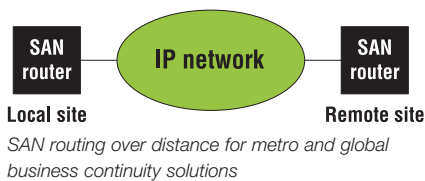
*SAN routing for data center SAN island consolidation and iSCSI server integration*

### Business continuity solutions

Local site infrastructure simplification solutions may extend to multiple remote sites to help enhance data protection and disaster tolerance. The IBM TotalStorage SAN16M-R provides distance independent SAN routing for use in cost effective, high performance metro and global business continuity solutions. This connectivity helps create consolidated remote tape library data protection and metro mirror and global mirror disaster tolerant solutions.

### High performance

The IBM TotalStorage SAN16M-R switch is designed to deliver 1 and 2 Gbps full-duplex throughput across all Fibre Channel ports. Each switch port auto-negotiates to either 1 or 2 Gbps depending upon the device attachment. Gigabit Ethernet ports are designed to operate at full wire-rate Fast Write technology which 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 SAN16M-R multi-protocol SAN router uses advanced application-specific integrated circuits (ASICs) to help minimize the number of components and improve reliability. The SAN16M-R switch is designed to provide hot-swappable, load-sharing dual power supplies that allow the switch to remain online if one power supply fails. Dual power cords allow attachment to separate power sources to help 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 switch because of a simple component failure. Hot-pluggable optical transceivers are designed to be replaced without taking the router offline.

High availability solutions require clustered servers, dual fabrics and disk array storage with dual adapters. Dual IBM TotalStorage SAN16M-R SAN routers may be attached to the same fabric as long as each are interconnected by one or more inter-switch link, ISL connections. Each router may be used for dual SAN routing over IP connections for resiliency.

### Configuration flexibility

The base router configuration includes twelve 1 and 2 Gbps Fibre Channel ports for data center SAN fabric attachment and SAN routing; four multi-service intelligent ports for Internet Fibre Channel Protocol (iFCP) or Internet SCSI (iSCSI) connections and sixteen shortwave SFP transceivers. Base firmware provides iSCSI initiator support and support for two Fibre Channel router ports (R\_Ports). Internet Fibre Channel Protocol, **iFCP Enterprise** feature is designed to provide iFCP with Fast Write and Compression for the four SAN routing over distance ports. iFCP technology provides isolation between the local and remote SAN fabrics. **SAN Routing** feature provides SAN routing on up to twelve Fibre Channel ports. **Comprehensive Enterprise Bundle** feature provides iFCP Enterprise and SAN Router feature in an affordable package.

Up to four copper GbE transceivers features provide connectivity to IP network. Up to sixteen 2 Gbps longwave 10 km and/or 35 km SFP transceivers may be used to replace shortwave transceivers.

### Switch investment protection

IBM TotalStorage SAN16M-R router is fully interoperable with IBM TotalStorage SAN m-type (McDATA) switches and directors. **SANvergence Manager** (standard feature) is designed to provide single router configuration management for metro and global SAN extension solutions. **SANvergence Manager Enterprise** feature is designed to provide additional capabilities for multiple router configurations such as management of multiple SAN islands 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 may be used to launch SANvergence Manager which helps simplify installation and administration.

### **Flexible Fibre Channel connectivity**

The TotalStorage SAN16M-R router is designed to provide Fibre Channel connectivity to:

- *IBM @server xSeries and selected Netfinity® servers*
- *IBM BladeCenter™ servers*
- *Other Intel® processor-based servers running Microsoft® Windows NT®, Windows® 2000, Windows Server 2003, Red Hat Enterprise Linux® 3, SUSE LINUX or Novell NetWare*
- *IBM @server pSeries and selected RS/6000® servers*
- *IBM @server iSeries servers*
- *Selected Sun and HP servers*
- *IBM TotalStorage Enterprise Storage Server® systems*
- *IBM TotalStorage DS4000 series (formerly FASiT Storage Servers)*
- *IBM TotalStorage 3590\* and 3592 Tape Drives and IBM TotalStorage 3494 Tape Library*
- *IBM TotalStorage 3582\*, 3583\* and 3584\* Tape Libraries*
- *IBM TotalStorage SAN Volume Controller*
- *IBM TotalStorage SAN m-type and selected McDATA switches and directors*

For the most current and complete information, refer to

**ibm.com**/SAN/totalstorage/m-type.

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## IBM TotalStorage SAN16M-R multi-protocol SAN router at a glance

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### Physical characteristics

Height (rack mount)	42 mm/1.66 in (1U)
Width	429 mm/16.9 in
Depth	646 mm/25.4 in
Weight	11.4 kg/25.0 lbs

### Operating environment

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

### Electrical requirements

Power	90 to 230 VAC, 50 to 60 Hz
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### Product numbers

2027 Model R16—IBM TotalStorage SAN16M-R multi-protocol SAN router with 16 ports: twelve 2 Gbps Fibre Channel ports and four Gigabit Ethernet ports each with shortwave SFP transceivers. Includes zoning, iSCSI services, two routing ports and SANvergence Manager software. Dual replaceable power supplies and power cords, redundant fans and rack mount kit.

FC 1607—Copper Gigabit Ethernet SFP transceiver

FC 2603—iFCP Enterprise with Fast Write and compression

FC 2604—SAN Routing with twelve routing ports

FC 2606—Comprehensive enterprise bundle with iFCP Enterprise and SAN Routing

FC 3235—2 Gbps 35 km longwave SFP transceiver

FC 4630—2 Gbps longwave SFP transceiver

FC 8052—SANvergence Manager Enterprise

### Fiber optic cables:

Multimode and singlemode cables and couplers are available in various lengths

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## For more information

Contact your IBM representative,  
IBM Business Partner or visit  
[ibm.com/totalstorage/san/m-type](http://ibm.com/totalstorage/san/m-type)



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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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