



## Storageflex™ FC16 UltraNet Edge Storage Router

Storageflex™ FC16 UltraNet® Edge SAN Extension Storage Router interconnects SCSI, iSCSI, Fibre Channel or FICON SAN islands over an IP, ATM or SONET infrastructure to improve information access, streamline storage management and drive business efficiency. In addition, it enables many of the most cost-effective, enterprise-strength data replication solutions available, including both disk mirroring and remote tape backup/restore to maximize data availability and business continuity. Its any-to-any connectivity and multi-point SAN routing capability provide a flexible storage infrastructure for remote storage applications.



*Storageflex™ FC16 UltraNet® Edge's Unique Capability to extend SAN Connectivity for SCSI, iSCSI, Fibre Channel and FICON Servers and Devices over IP, ATM and Sonet.*

### Features

- Routes Fibre Channel protocol over IP over a Wide Area Network
- Supports all servers attached via SCSI, iSCSI, Fibre Channel and FICON
- Supports all Fibre Channel Attached Disks using Fibre Channel, SCSI, SATA Disks
- Optional support for AES 256bit Encryption of Windows Servers
- Make SAN LUNs visible across the Wide Area Network, transparent to the OS.
- All routing are multi path with multiple WAN connections and storage routers
- Routing includes Dynamic load leveling with deployment of two or more storage routers
- Hardware compression across the WAN performed internally by Storage Router
- Guaranteed packet delivery with Embedded CRC Check
- Facilitate Remote Tape using Pipelining Technology over the WAN as an embedded feature within the Storage Router
- Supports Disk Replication between all applications, servers and disks
- Supports Synchronous or asynchronous Disk Mirroring between all applications, servers and disks
- Supports data flow with all operating systems using Microsoft Windows, HP OpenVMS, HP TRU64, SUN Solaris, LINUX, HP HP/UX
- Automatic Fail over of servers and alternate pathing with deployment of two or more storage routers
- Native support for IP (10/100/1,000bit Ethernet), ATM and Sonet for WAN Connectivity
- WAN Ports upgradeable to OC3 and/or OC12
- Expandable to two Fibre Channel and two WAN Ports per Storage Router
- Optional Centralized Network Management Service 7 X 24 X 365 with Remote Monitoring by Manufacturer
- Buffered Store and Forward architecture
- Hot swappable power supplies and fans
- Supports Redundant load sharing power supplies
- Redundant cooling fans
- Supports software tunable ports such as adjustable buffering and block size
- Network packet loss and failed routes are handled transparent of application
- Fibre Channel Disk Streaming/Fast Write/Acceleration
- Fibre Channel Tape Read Streaming/Pipelining/Acceleration
- Supports FICON port emulation
- Supports FICON port application auto-detection
- Supports channel session level intelligence
- Supports hardware compression on the WAN side and compresses large data blocks for maximum efficiency
- Supports full error recovery to maximize WAN efficiency
- Supports network load sharing/balancing, multiple link aggregation

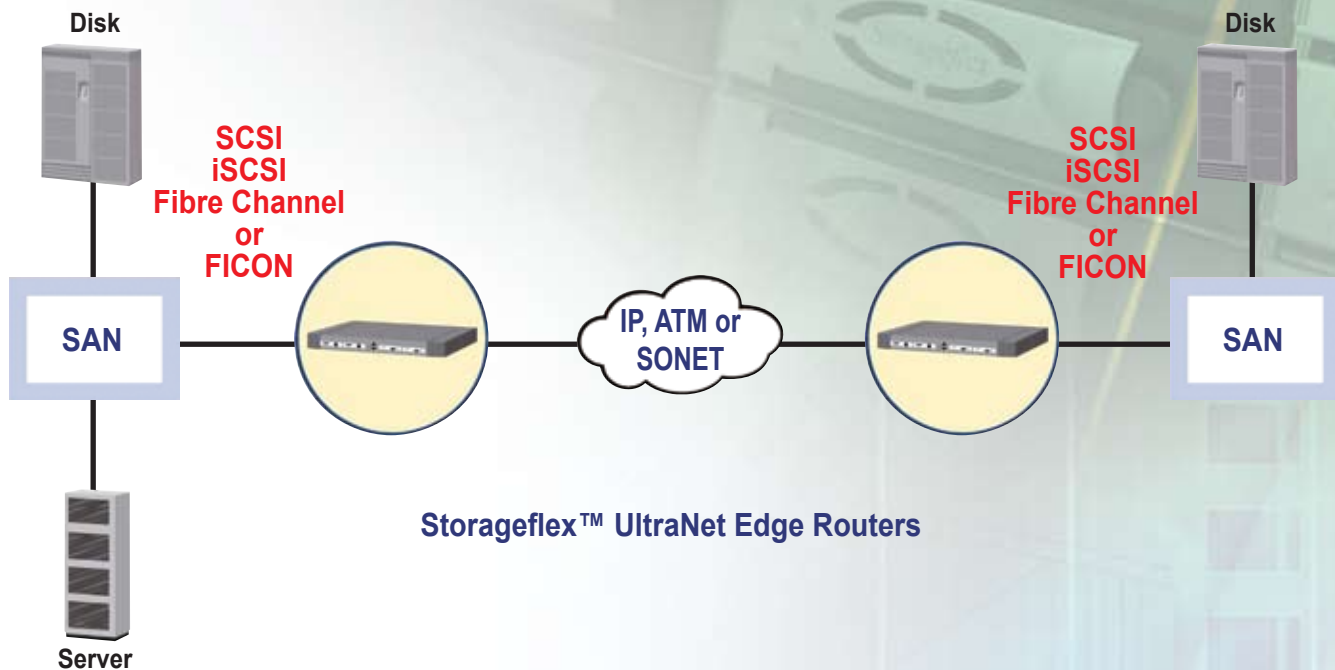


## Saves money by making efficient use of bandwidth capacity

The unique compression capabilities of the Storageflex™ FC16 UltraNet Edge Storage Router can significantly reduce the amount of money you'll need to spend on telecom lines. Depending upon the compressibility of the data, UltraNet technology can compress your data anywhere from 2:1 to 20:1, dramatically reducing bandwidth costs. For example, with compression, you can achieve gigabit per second performance using your existing 100 Mb Ethernet infrastructure at a fraction of the cost. In addition, the same infrastructure can be used for synchronous disk mirroring by day and asynchronous tape backup by night when the bandwidth is underutilized. Using the UltraNet Edge Storage Router's WAN segmentation capabilities ensures quality of service even in a shared network environment. Combining disk and tape in this way is a significant savings for your bottom line.

### Benefits

The IP Storage Architecture of the Storageflex™ FC16 UltraNet Edge does much more than simply move data across the network. It provides the tools and intelligence necessary to ensure predictable throughput, efficient bandwidth utilization, and data integrity— across any distance. It also provides configuration flexibility, enabling a routed storage infrastructure that can easily adapt to changing connectivity requirements.



Storageflex™ FC16 UltraNet® Edge's Unique Capability to extend SAN Connectivity for SCSI, iSCSI, Fibre Channel and FICON Servers and Devices over IP, ATM and Sonet.



### **Delivers your data dependably over any distance**

The unique compression capabilities of the Storageflex™ FC16 UltraNet Edge Storage Router can significantly reduce the amount of money you'll need to spend on telecom lines. Depending upon the compressibility of the data, UltraNet technology can compress your data anywhere from 2:1 to 20:1, dramatically reducing bandwidth costs. For example, with compression, you can achieve gigabit per second performance using your existing 100 Mb Ethernet infrastructure at a fraction of the cost. In addition, the same infrastructure can be used for synchronous disk mirroring by day and asynchronous tape backup by night when the bandwidth is underutilized. Using the UltraNet Edge Storage Router's WAN segmentation capabilities ensures quality of service even in a shared network environment. Combining disk and tape in this way is a significant savings for your bottom line.

### **Tape Pipelining**

Storageflex™ FC16 UltraNet Edge's unique tape pipelining capability virtually eliminates the impact of latency on the sustainable throughput of tape backup over distance. The Storageflex™ FC16 UltraNet Edge emulates a buffered device controller and queues up operations remotely to ensure that the next operation is available to send to the device controller as soon as the previous operation completes. Operations and data in the pipeline are retained in the Storageflex™ FC16 UltraNet Edge buffer until successful completion. Thus the remote tape backup system appears local to the server and is able to sustain performance over thousands of miles.

### **Automatic failover**

In the event of a link failure in the primary storage network, the Storageflex™ FC16 UltraNet Edge Storage Router automatically and seamlessly reroutes traffic to an alternate route, such as your production IP network. This is significant in business environments where minutes of downtime can translate into thousands or even millions of dollars in fines or lost revenue.

### **Dynamic load leveling**

In a redundant configuration, the Storageflex™ FC16 UltraNet Edge Storage Router can split the data load to increase the amount of data moving across the network. For instance, during third shift when your production network is underutilized, the Storageflex™ FC16 UltraNet Edge can route a percentage of the data across that link and increase storage application performance. Another advantage of splitting the load is that you may be able to avoid investing in a dedicated link altogether, saving thousands of dollars every month.

### **Provides Configuration Flexibility to Adapt to Changing Requirements**

The Storageflex™ FC16 UltraNet Edge Storage Router allows customers to define, on a port-by-port basis, the personality characteristics that perfectly match their specific storage networking requirements. Its configuration flexibility allows connectivity to 1 or 2 Gbps devices, FICON or Fibre Channel protocols (LVD/HVD SCSI and iSCSI Optional), IP, ATM or SONET network services, connection to a SAN fabric or directly to servers and storage, as well as point-to-point or multi-destination SAN routing configurations. The flexibility of the Storageflex™ FC16 UltraNet Edge Storage Router enables a storage networking infrastructure that can easily adapt to changing connectivity requirements; providing investment protection today while preparing for the future.

### **Standards and Interoperability**

The Storageflex™ FC16 UltraNet Edge Storage Router is designed to conform with existing and emerging industry standards, such as FCIP, FC and FC-2 for maximum interoperability with existing equipment resources. The Storageflex™ FC16 UltraNet Edge is certified for storage networking solutions by all of the major storage vendors, including IBM, EMC, Dell, Hitachi Data Systems, StorageTek, and HP, as well as SAN infrastructure providers like Brocade and McData.

### **System and Network Management**

The Storageflex™ FC16 UltraNet Edge software tools include ConfigManager, an easy-to-use graphical configuration tool that provides a point and click interface for designing and configuring Storageflex™ FC16 UltraNet Edge storage networks, and the web-based UltraNet WebView, an SNMP management tool that lets network managers monitor and control UltraNet nodes from any PC with an internet connection.



## Storageflex™ FC16 UltraNet Edge™ Specifications

<b>Internal Ports</b>	Up to 4 Any-to-any configuration flexibility
<b>Interoperability</b>	Any E_port capable Fibre Channel switch
<b>Host Protocols Supported</b>	Any Fibre Channel or FICON device via F port. LVD/HVD SCSI and iSCSI optional
<b>Device Protocols Supported</b>	Any Fibre Channel or FICON device via F port. LVD/HVD SCSI Optional.
<b>WAN Protocols Supported</b>	IP, ATM, or SONET
<b>Performance</b>	Line speed, full duplex, full bandwidth, Pipelining for remote tape at native performance
<b>Channel Interfaces</b>	1 or 2 Gbps Fibre Channel, 1 or 2 Gbps FICON
<b>Network Interface</b>	100 Mbps Ethernet with compression 1 Gbps Ethernet with compression OC-3 and OC-12 ATM, Packet over SONET with compression
<b>Management</b>	Web based GUI element manager Multi-domain, end-to-end storage network management
<b>Height (in/cm)</b>	1U: 1.75 / 4.5
<b>Width (in/cm)</b>	16.6 / 42.2
<b>Depth (in/cm)</b>	16.0 / 40
<b>Rack Mount Kit</b>	Included
<b>Net Weight (lb/kg)</b>	20 / 44
<b>Power Consumption (watts)</b>	200
<b>Standard Warranty</b>	1 Year Advance Replacement Warranty
<b>Optional Warranty</b>	Extended Warranty, Onsite Service Next Business Day or 7 X 24
<b>Safety</b>	UL, CSA, CE, FCC Class A, CB