

## Virtual TapeServer (VTS)

### Highlights

- Optimized data protection in iSeries (AS/400) environments
- Improved backup performance and flexible storage capacity
- Up to 10x faster than traditional tape libraries
- Remote replication for backups saves storage costs
- Configuration flexibility and scalability
- High availability with backup systems remaining online
- Seamless integration and support with IBM® BRMS™ and IBM® TSM backup applications
- Efficiency move data to physical without impacting backup window



VTS OmniFlex Series

### Overview

Crossroads Virtual TapeServer (VTS) ensures optimized data protection and resiliency in iSeries™ (AS/400) environments while dramatically decreasing the operational costs of maintaining a backup and recovery solution. With VTS, IT administrators can improve performance and storage capacity while leveraging existing investments already made in tape backup infrastructure.

Emulating a tape drive or autoloader, but featuring the performance gains of modern disk drives, VTS deposits data just as it would onto a tape library – only much faster. With VTS, backup windows can be reduced to seconds in order to meet increasing RTO and RPO demands, ensuring business continuity and compliance requirements. Stored data can be copied to physical tape media as needed for archival storage or disaster recovery.

Virtual tape drives and cartridges make up the basic building blocks of the VTS solution. Virtual tape cartridges are logically equivalent to physical tape, but unlike tape, they can be created in any size and pooled together into virtual tape libraries – including silos or automatic cartridge loaders. Each VTS module can support multiple virtual tape drives that respond to tape commands just as a physical tape drive would. Standard host software, utilities and commands are used to mount virtual tape cartridges onto virtual tape drives.

### Key Features & Benefits

#### *High Performance*

VTS deposits data up to 10 times faster than traditional tape drives and libraries with no tape to mount or rewind. VTS provides near immediate access to stored data, drastically reducing recovery time to meet increasing stringent RTO and RPO requirements. With VTS lossless data compression increases the effective capacity of available storage.

#### *Remote Replication*

VTS Instant/DR feature allow backups to be replicated remotely, with offsite storage costs reduced or eliminated and data being immediately recoverable. VTS only transmits the delta changes between files to optimize available network bandwidth. Physical tapes can also be created as if they were made by the application itself.

#### *Scalable*

VTS is not limited to a specific configuration, it supports any number of cartridges and drives with virtual tape cartridges dynamically sized as needed. Backup capacity can be expanded simply by adding or connecting additional disk storage to the VTS appliance.

#### *Reduces Risk*

VTS provides reliable disk-based data protection and data encryption to satisfy regulatory compliance and company security policies to secure data at rest. VTS enables the unique ability to allow the AS/400 the ability to perform an alternate IPL recovery from the VTS based virtual tape.

#### *Flexible Tape Management*

VTS can be installed in less than 30 minutes and leverages existing backup environments. VTS supports the IBM® Backup Recovery and Media Services (BRMS)™ as well as IBM® Tivoli Storage Manager applications. Additionally, the management of virtual tape operations is conveniently provided by way of a web-based graphic user interface (GUI).

## VTS Features

### Data Compression

- Files are automatically compressed as they are written to disk arrays
- Improves performance, while increasing capacity and reducing cost of media
- Up to 10:1 compression ratios supported
- Decompresses data as it is read from disk before it is written to the tape to ensure compatibility with standards

### Integrated Backup Software

- Appears operationally as a standard tape drive to the host server
- Data is processed directly by a host running the backup management application (BMA) software
- Integrated support for the IBM i5/OS save commands and the IBM iSeries Backup Recovery and Media Service (BRMS)

### Disaster Recovery

- Copy, replicate or synchronizes backup at two or more locations
- Can be deployed jointly or independently in the same data center, campus or any remote location worldwide.

### Tape Encryption

- Complete Data at Rest Security
- Strong AES-256 Encryption
- Robust Key Management

### Backup Synchronization

- Synchronize backup of data between a local VTS and one or more remote VTS systems
- Determines and only transmits data that has changed ("snapshot") from the local system to the remote system
- More efficient than differential backups
- Enables restoration of files from any previous point in time
- Ability to Import or Export data using manual or scheduled processes
- Data is streamed to connected physical tape drives at full rated speeds
- No additional software on the host server is required

### Fault Tolerant Hardware

- Utilizes Standard RAID arrays and Hot swappable drives to ensure reliable high availability of data
- Hot Swappable Power Supplies

### Intuitive Web Interface

- Multiple VTS systems can communicate with each other remotely over standard communication interfaces
- Simple and easy to use GUI supports all configuration and management options
- Provides Statistics and event log monitoring

## VTS Specifications

VTS Series	UniFlex	OmniFlex
Disk Capacity (usable)	1.5TB	Up to 5.25TB
Performance	Up to 36MB/s	Up to 120MB/s
Host Server Interfaces	SCSI and/or FC	SCSI and/or FC
Virtual Tape Devices	2 (FC or SCSI)	4 FC and 2 SCSI
Chassis Form Factor	2U	3U
Dimensions (HxWxD)	3.5"x16.8"x25.6"	5.2"x17.2"x25.5"
Voltage	100-240 VAC	100-240 VAC
Frequency	47-63Hz	50-60Hz
Safety & Compliance	CE, TUV, RoHS	CE, TUV, RoHS
Emissions Certifications	FCC part 15 Class A	FCC part 15 Class A



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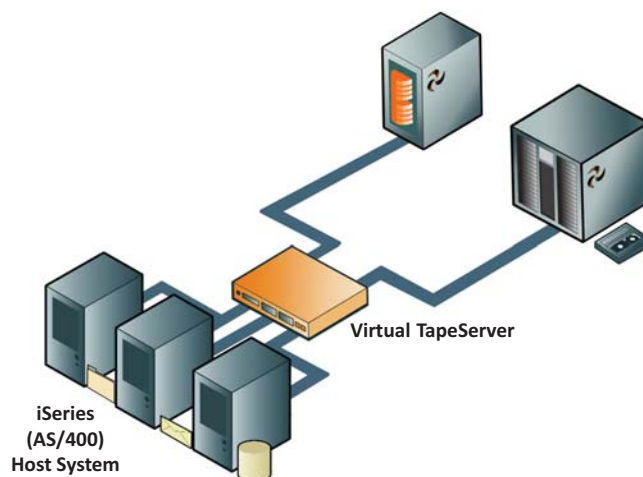
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## Virtual TapeServer (VTS) Architecture



## ABOUT CROSSROADS

Headquartered in Austin, Texas, Crossroads Systems delivers flexible solutions to connect, protect, secure and restore business-critical "data-at-rest." Crossroads (symbol: CRDS) is currently traded on Pink Sheets and also posts its financial disclosure reports, press releases and other related documentation on the OTCIQ web service of the Pink Sheets website. For more information, please visit [www.crossroads.com](http://www.crossroads.com).



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