



# I-6990 Virtual Storage and Archive Server

## Highlights

### Open Virtual Storage System for

- IBM S/390
- Siemens BS2000
- RS/6000
- UNIX
- Windows NT

### Host Software Component

None

### Scaleable Virtual Tape Storage

From Terabyte to Petabytes

### Supported Interfaces

UP to 16 I/O Processors:

- ESCON
- Block Multiplex
- SCSI 2 Ultra Fast and Wide
- ATM
- Fast Ethernet, Gigabit Ethernet

### Virtual Tape Drive Support

32 Drives with following emulations:

- IBM 3480, 3490
- Siemens 3580, 3590
- DLT

### Real Tape Drive and Library Support

All popular Tape Systems including

- IBM 3480, 3490, 3590
- Storage Tek, EMASS/GRAU
- Ampex DST
- Sony DFT and AIT2
- DLT, NCTP

### Disk Cache Size

54 GB to 8 TB

Virtual Tape offers immediate benefits to users by reducing personnel, hardware, media and environment expenses. Virtual Tape provides faster data access, reduces tape mounts and manages peak loads with reduced hardware by providing virtually an unlimited number of Virtual Tape Drives. The enterprise wide connectivity enables centralized data management, easier data administration and improves security and availability. In addition, Virtual Tape positions the user to take advantage of higher capacity, lower cost tape technology and eases upgrade to new tape technologies.

## Virtual Storage Server

Intercoms I-6990 Enterprise Virtual Tape Server (EVTS) provides an economic solution, less complex, easy to install, easy to maintain and open to all system platforms. It is a scaleable storage system, providing virtual and hierarchical storage management as well as volume stacking to mainframes, UNIX systems, Windows NT, LAN server and other system platforms. The virtual and hierarchical storage management is totally dedicated to the storage server. Host software components are not needed. Supported systems include IBM S/390, Siemens BS2000, Bull GCOS 8, RS/6000, UNIX, Windows NT, OS/2 and others.

## Virtually Unlimited Space

Many applications utilize less than 30 percent of the storage capacity on tape. By filling cartridges 100 percent, the I-6990 Enterprise Virtual Tape Server increases the utilization of tape systems significantly. It also improves data throughput, because tape files are cached on hard disk and can be processed with disk speed.

## Theory of Operation

The I-6990 EVTS is a virtual storage server, controlled by the Virtual Storage Manager. It includes a hard disk cache and supports tape robots and optical disk libraries as well as offline archives. All components are under control of the I-6990 Virtual Storage Manager. Connectivity is provided to mainframes via ESCON and Block Multiplex Channel and to UNIX systems, Windows NT and LAN via ATM and Gigabit Ethernet.

When a host requests a tape drive, the I-6990 EVTS provides a virtual drive and stores the data at disk speed on the storage servers hard disk cache. The virtual tape can reside on disk for a given time period and can be read at disk speed. Data will then be copied to tape, stored in the robot and eventually released from disk cache according to the users specifications. Up to 4 data set copies can be made automatically for data integrity. Library control and data management including volume stacking for optimal use of tape capacity, maintaining a number of copies and hierarchical storage management, is under the control of the Virtual Storage Manager.



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When the host wants to read a virtual tape, it calls it by volume serial number. EVTS will find it and store it on the disk cache, or provide it directly to the application program.

### No Drive Allocation Problems

The I-6990 EVTS maintains up to 1,024 virtual tape drives with IBM 3490E or DLT device characteristics. Virtual drives can be assigned to hosts, regardless of the availability of physical drives. The job can start immediately and does not need to wait for the availability of real drives. Backup can be performed in parallel on up to 64 virtual tape drives, speeding up the backup procedure significantly.

### Open on the Front and Open on the Back End

The I-6990 Virtual Storage and Archive Server is not only open to all system platforms, it is also open to all major tape technologies and tape libraries. For example: While a virtual drive with 3490 emulation is dedicated to a mainframe, a Storage Tek 9840 or a AMPEX DST high performance tape system may be used on the servers back end, multiplying capacity and performance, compared to standard 3490 tape transports. If costs are critical, DLT or AIT2 tape technology may reduce the cost per megabyte and the overall system costs significantly.

Supported are all major tape robots and optical disk libraries, including but not limited to IBM 3494, Storage Tek, EMASS/ GRAU, ATL, Plasmon, ASM and HP SureStore.

## Specifications

### Host Software Requirement

None

### Number Of Channels

1 to 16

### Channel Types

ESCON  
Block Multiplex Channel  
SNI Channel Type 2  
ATM  
Fast Ethernet, Gigabit Ethernet

### Disk Cache

54 GB to 8 TB, RAID 0, 1 or 5

### Power Source

110 / 240 VAC, 48 to 63 Hz  
1.2 to 4.5 KVA  
4 KBTU to 15 KBTU per hour

### Operating Environment

16° to 32° C  
60° to 90° F

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