



The Solution
is simple.

BUS-TECH
INC.

DDi

Leading Edge Mainframe Outsourcing Solutions

MAINFRAME APPLIANCE FOR STORAGE TURBO-CHARGES BATCH PROCESSING AT DDI SLASHING TAPE BACKUP TIMES BY AS MUCH AS 60%

Accelerated, automated and unattended tape operations deliver ROI within 6 months

Benefits Derived by Data Distributors, Inc.

1. Improve the efficiency of outsourced batch operations thus expediting turn-around times resulting in enhanced client productivity.
2. Unattended operation enables reduction in data center shift staffing, especially at weekends.
3. Allows the hourly backups of CICS journals to be completely automated.
4. Reduce the cost of tape cartridge usage.
5. Minimizes sparsely used cartridges; DDI has over 100,000 volumes, 4,000 of which use less than 2% of the available tape.

"With Bus-Tech Mainframe Appliance for Storage we are realizing a 35% to 60% reduction in our batch processing windows. This allows our operators to devote more time and effort toward customer service initiatives, and as a result, improves customer satisfaction and support."

Kevin Sweeney
Vice President of Operations
Data Distributors, Inc.



Data Distributors, Inc., since its founding in 1973, has been the home of innovative and affordable mainframe solutions with an unequivocal "no gotcha" guarantee. DDI [\[www.datadist.com\]](http://www.datadist.com), headquartered in Framingham, MA, and with processor-packed service centers in Framingham and Methuen, MA, offers a wide spectrum of value-added MIS services including remote computing, outsourcing, media conversion, consulting and I/S support. Unconditional customer satisfaction is DDI's overriding priority.

To guarantee customer satisfaction, DDI offers an unique and proven combination of expertise, experience, creativity, commitment and responsiveness. The quality of service provided by DDI is unparalleled, while its realistic and competitive pricing is unmatched. DDI's technical staff love the 'hustle and bustle' of data center operations and are renowned for their hands-on approach. They work closely with customers, from the inception of a project to its successful completion, to ensure that the customer is always in the loop. DDI, in addition, constantly scours the market looking for new solutions that could help their customers enhance their business goals. The Bus-Tech Mainframe Appliance for Storage was one such solution.

DDI's, large, loyal and well satisfied customer base, ranges from private companies to very large multinational corporations.

DDI Requirements

Improve turn-around times to clients by speeding up outsourced batch operations; rationalize inefficient cartridge usage and bolster networked disaster recovery capabilities.

Bus-Tech Solution

The ESCON-attached Mainframe Appliance for Storage virtual tape controller for IBM S/390, z900, z800 and compatible mainframes running z/OS, OS/390, MVS or VSE



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Irrefutable Advantages of the Bus-Tech 'MAS' Solution

1. Significantly speeds-up outsourced batch operations involving CICS and COBOL applications.
2. Frees up valuable mainframe resources that can be used to handle additional outsourced applications.
3. Eliminates the need for operator intervention to mount, dismount and reset tapes.
4. Slash the time taken for nightly, incremental back-ups from 95 minutes to 35 minutes.
5. Reduce (or even eliminate) weekend operator shift schedules though automation of all tape related operations.
6. Minimize tape cartridge costs

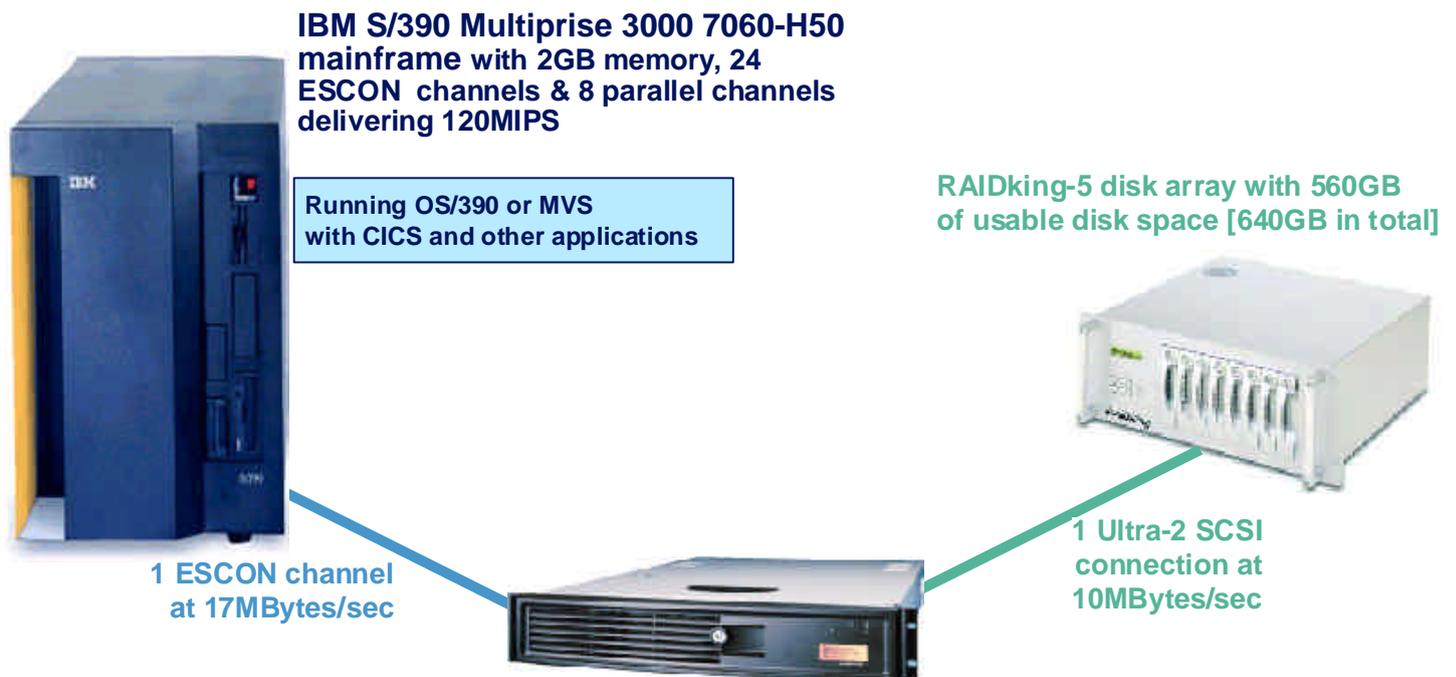
The Application at Data Distributors, Inc.

DDI, as a leader in outsourced mainframe solutions, runs multiple CICS regions, COBOL and other batch operations for their numerous clients on a 24x7 basis. Many of these are time-sensitive payroll applications. Most of these applications are dependent on tape (or cartridge) related operations. One outsourced application relies on a data set that currently spans 110 tape volumes, with the client typically adding 3 more volumes of data a month!

Then there are vital backups to tape to guarantee data integrity and 'business continuation'. For example, any CICS region that is heavily used for payroll applications, backs-up its active transaction journal to a tape volume on an hourly basis. In addition there are the imperative nightly incremental back-ups to tape. Tape activity, in general, is labor-intensive and media inefficient.

Operator intervention is constantly required to mount, dismount and reset tapes. Applications will sit idle until the required operator action is performed. This can drastically slow down application turn-around times, especially if operators are busy supporting multiple applications requiring tape related intervention. Applications are also rather cavalier in their use of tape volumes. Many make no attempts to maximize their use of tapes or cartridges. DDI currently has over 100,000 cartridges, where some of them use less than 2% of the total tape. This is costly, inefficient and wasteful.

The Bus-Tech Mainframe Appliance for Storage provided a perfect answer to all of these tape related issues at DDI.



The exact Bus-Tech Mainframe Appliance for Storage currently in use at Data Distributors, Inc.

Bus-Tech Mainframe Appliance for Storage
virtual tape controller



Data Distributors' Needs Addressed by the Bus-Tech MAS

- ⚡ Noticeably increase the efficiencies of batch mode operations.
- ⚡ Faster turn-around of outsourced jobs increases client satisfaction.
- ⚡ Additional mainframe capacity made available through faster operations enables acceptance of more outsourced workload.
- ⚡ Reduce tape cartridge usage.
- ⚡ Enhance operator productivity by minimizing tape related interruptions.
- ⚡ Reduce the need for operators on weekend shifts just to handle tape operations.
- ⚡ Greatly speed up the nightly incremental backups.
- ⚡ Ability to start offering more disaster-recovery scenarios based around

The Solution for Data Distributors

Bus-Tech's Mainframe Appliance for Storage is a leading-edge virtual tape solution for mainframe operations. It leverages Bus-Tech's acclaimed, high-throughput ESCON channel-attach technology. It acts as a flexible, very-fast and affordable virtual tape controller for IBM zSeries S/390, z900, z800 and compatible mainframes. The MAS employs ESCON channel connectivity to mainframes and SCSI or Fibre Channel connections to low-cost, open-system disk storage. To the mainframe software the MAS appears as an IBM 3480 tape drive. The MAS can emulate up to 16, concurrently active, IBM 3480 tape drives per ESCON connection.

In January 2002, DDI attached a MAS as virtual tape controller to its IBM S/390 Multiprise 3000 mainframe using a single ESCON connection [though the MAS has two ESCON interfaces that can be simultaneously active]. The low-cost disk storage for the emulated tape operations are provided by a Ultra-2 SCSI attached RAIDking-5 SCSI-EIDE RAID storage offering 560GB of usable disk space.

Though the MAS virtual tape system is heavily used, only about 30% of this RAID capacity has been currently consumed. Given that this RAID system can be upgraded to handle twelve times this capacity, the DDI technical folks are very comfortable that they have plenty of growth built-into this current system to meet their foreseeable needs for the next couple of years.

The MAS incisively and persuasively addressed all of DDI's current tape related issues from day one. Mainframe applications interacted with the RAIDking-5 RAID disk-storage, through the MAS, as if it were a standard IBM tape drive. Only a trivial change to the job control statements, i.e. that of changing the tape drive 'address' to read 'VTAPE', is required once. MAS automatically handles all tape mount and dismount requests from the mainframe.

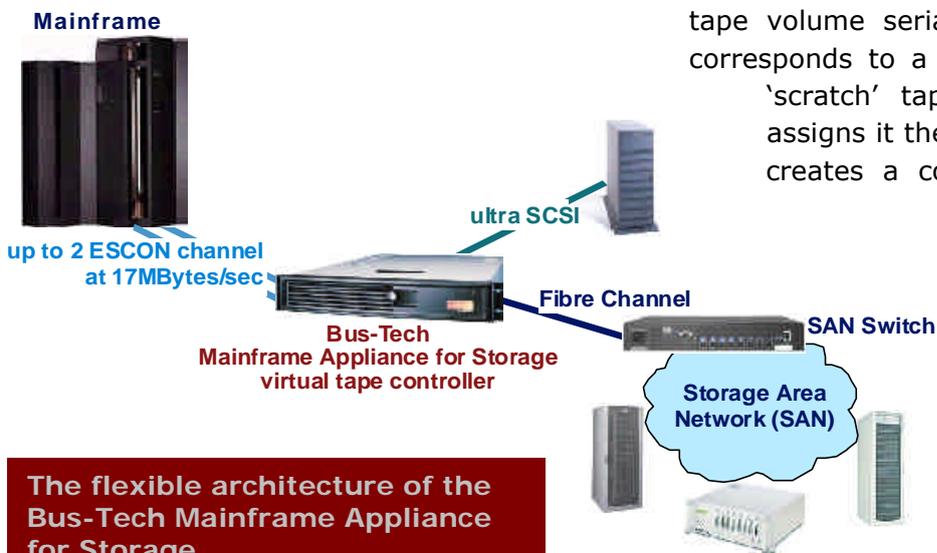
Automating and Expediting Tape Mount Operations

Each MAS emulates up to 9,999 tape volumes – which are assigned tape volume serial numbers 'BT0001' to 'BT9999'. Each volume corresponds to a disk file. If a mainframe application requests a 'scratch' tape to create a new volume, MAS immediately assigns it the next available 'BTxxxx' volume serial number and creates a corresponding disk file with that name. It then returns a positive response to the mainframe. The whole process takes milliseconds. If an application requests a mount of a specific volume, MAS checks that the corresponding data set exists and honors the mount.

"While the MAS works just great right now, what I am really excited about are the future possibilities. This box has great potential. It can really help us offer some very compelling disaster-recovery options to our clients."

Earle Prentiss

Director of Technical Services
Data Distributors, Inc.



The flexible architecture of the Bus-Tech Mainframe Appliance for Storage



Distinguishing Strengths of the Bus-Tech MAS

- /// Built around Bus-Tech's acclaimed, highly proven, high-performance ESCON channel-attach technology.
- /// Sustained data rate of 10MBytes/sec [80Mbps].
- /// Works totally transparently with z/OS, OS/390 and VSE operating systems.
- /// No changes required to the mainframe applications, just trivial changes to JCL.
- /// Ultra SCSI and Fiber Channel interfaces to support all contemporary disk storage options including SAN and NAS.
- /// Includes utilities to support CA's Dynam/T and Bi Moyle Associates' BIM-EPIC tape management systems.
- /// Designed for totally unattended, 'lights-out' operation.
- /// Comes with all necessary mainframe software and utilities to ensure 'turn-key' mode deployment and activation.

These automated and near instantaneous tape volume mounts makes a huge difference to data center operations. Operators no longer have to scurry around mounting tapes and punching 'ready' buttons. Applications no longer incur significant tape related wait-states. Furthermore, one a virtual tape volume is mounted via the MAS, tape-related data transfers occur at disk-speed, as opposed to the slower tape speed. The MAS works at a sustained data transfer rate of 10MBytes/sec (80Mbps).

The bottom line here, as DDI has discovered, is a huge reduction in the time and effort associated with tape operations. Hence, the 60 minute reduction in the nightly incremental backups. That is a saving of 7 hours a week – which is the equivalent of hitting pay-dirt for a company like DDI whose business is that of selling machine time.

Investment for the Future

No wonder that Mr. Kevin Sweeney, DDI's V.P. of Operations refers to the Bus-Tech MAS as a 'valuable investment to further our business goals'. DDI can immediately use the time and effort saved by the MAS to accept and process more work. The MAS in effect was equivalent to upgrading their mainframe, though the MAS was but a fraction of the cost of a mainframe upgrade. Thus, the MAS in addition to significantly reducing capital [i.e. tape cartridges] and operational costs, is also already increasing DDI's revenues.

No wonder that DDI is sure that they will achieve a positive ROI within 6 months. But that is not all. Improved application throughput also means that DDI's clients get faster turn-around of their batch jobs. This further bolsters client satisfaction and generates more goodwill. For a company such as DDI, that is totally committed to customer service and satisfaction, the MAS has indeed been an unmitigated 'win-win' solution.

About Bus-Tech

Bus-Tech, Inc., founded in 1987 is the industry's leading provider of state-of-the-art connectivity solutions for the data center to Original Equipment Manufacturers. IBM is one of its leading customers. The company's powerful suite of adapter and platform solutions satisfy even the most rugged demands of data processing professionals for high-bandwidth, high-availability and high-performance connectivity. With more than 15,000 installed sites worldwide, Bus-Tech is a recognized leader in the data center interconnect market. Headquartered in Burlington, MA, the company is privately held with locations around the world. For more information about Bus-Tech and its products, please visit the Bus-Tech World Wide Web site at <http://www.bustech.com>, send email to info@bustech.com, or call 800-284.3172

"We see the MAS a valuable investment to further our business goals. It will enable us to process more jobs for our clients. We have had very good experience dealing with Bus-Tech. The product works very well."

Kevin Sweeney
Vice President of Operations
Data Distributors, Inc.

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