

## LaserVault Backup Executive Overview

This overview is designed to answer the most common questions asked about LaserVault Backup. It is designed for both technical and non-technical readers.

### What is LaserVault Backup?

- **Disk to disk backup**
- **AES Encryption**
- **Automated operation**
- **Low cost Virtual Tape Library**
- **Simple command set**

LaserVault Backup is a Disk-to-disk (D2D) backup system for IBM midrange computers (AS/400, iSeries, I5, System I) that uses generic PC hardware to deliver performance similar to a Virtual Tape Library (VTL) without the operational complexity, at a small fraction of the cost.

With LaserVault Backup, you can automate your backup process to create secure, highly compressed and encrypted backup files on reliable, low cost PC hard drives, without the delay, expense, and error of manual tape handling.

### How is this different from a Virtual Tape Library?

- **Uses PC hardware**
- **Simple integration and administration**
- **Integrated encryption**

A **Virtual Tape Library** is designed to emulate a robotic tape library, and uses sophisticated software for backup management. It's also relatively expensive, and typically uses dedicated hardware that is priced by disk capacity.

Like a VTL, LaserVault Backup provides an archive of multiple backups that are stored on disk instead of tape. It includes a catalog of backups, and the operator can choose particular libraries or objects to restore from an AS/400 workstation, without handling backup media.

The result is a secure, encrypted library of your backups, at your fingertips.

Unlike a VTL, LaserVault Backup uses commands almost identical to the tape commands you are used to, so you can start using it right away. It also runs on regular PC hardware, so you can take advantage of the tremendous cost savings provided by the PC mass market for hardware and particularly disk storage.

## **LaserVault Backup Executive Overview**

For example, the list price for a terabyte of iSeries DASD is about \$44,000. The price for the DASD to store the compressed, encrypted backup of that terabyte on an external PC terabyte drive is about \$44 – a thousand times cheaper.

### **What encryption does LaserVault Backup support?**

- **Advanced Encryption Standard**

LaserVault Backup includes government-sanctioned AES (Advanced Encryption Standard) encryption, so your backups are always secure no matter who has them. This is a form of 'private key' encryption. This strong encryption is of the sort mandated in various compliance regulations.

Other encryption formats such as Blowfish, Twofish, or 3DES are available on demand.

### **What is the difference between this encryption and disk-based encryption on the AS/400?**

- **No private key on the System I**
- **Backup is compressed before encryption**
- **Simple management and easier disaster recovery**

With this encryption, the private key is never present on the AS/400, so the encryption is more secure. The LaserVault Backup PC server can and should be physically secured, to prevent unauthorized access to the private key. In addition, the private key phrase is itself encrypted on the PC server.

You backup files can be restored with any PC and Series I server combination, if you have the private key, making disaster recovery easier and more failsafe.

### **Are all backup files encrypted with the same private key?**

- **Separate private key for each backup**
- **Higher security**

Unlike hardware backup devices or some disk to disk backup systems, LaserVault Backup uses a different, randomly generated private key for each backup file. This key is then obfuscated and encrypted with your main private key, and stored with the backup. The result is an even higher level of security than with single-key systems.

### **What is the advantage of LaserVault Backup over hardware encryption devices?**

## LaserVault Backup Executive Overview

- **Lower cost**
- **More universal disaster recovery**

With hardware backup devices, you need the same type of tape drive and hardware encryption device (if separate) for your disaster recovery site. With LaserVault Backup, all you need is a PC, a copy of the software, and the private key pass phrase.

### **Why does LaserVault Backup save to disk instead of tape?**

- **Disk is far more reliable than tape**
- **No manual operations**
- **Fewer opportunities for error**
- **Lower media cost**
- **Higher compression**
- **Integrated encryption**
- **Automated backup processes**
- **Multiple simultaneous backups**
- **Integrated email reporting**

Disk media is far more reliable than tape media. The reason you backup your system is to avoid risk. Using tape when you no longer need to, adds a large amount of unnecessary risk to your backup procedures. The combination of our strong compression and the recent drop in disk drive prices, make tape more expensive than disk for the first time.

Everyone knows that magnetic tape is designed to fail. That is why most system managers throw out their old tapes every two to three years. Storing your company's most critical information on media that you expect to fail, just doesn't make sense when there are cheaper, better alternatives available.

Saving to disk also allows you to automate your backup processes and remove the possibility of operator errors, such as mislabeled, misplaced, or misused tape. Having an automated backup system also reduces wait and increases your system availability.

When you take the manual procedure out of the loop, you know the backup will be done, on time, every time. And LaserVault Backup actually reports the success of the backup, by email, with a formatted listing of libraries and objects.

Your backup files become media independent. You can copy the backup file to any type of PC media, including hard drive, flash memory card, DVD, Blu-Ray, or the next form of media they invent.

## LaserVault Backup Executive Overview

### Does LaserVault Backup include hardware? \

- **Software-only version**
- **Backup Appliance version**

LaserVault Backup comes in two versions. The Software Only version consists of software for the iSeries and software for the PC. You can use whatever PC hardware you prefer. The LaserVault Backup PC server software runs under Windows 2000 Server, 2003 Server, XP Pro, or Vista.

The Backup Appliance includes a PC we configure and ship for you, with no monitor, keyboard or mouse. You connect the PC to your System I with an included 1 Gigabit Ethernet connection. You access the PC through Remote Desktop Connection across your network.

### Does it need a special connection to the iSeries host?

Ethernet connection  
100 Mbit, 1 Gbit, or 10 Gbit connection

LaserVault Backup connects through TCP/IP. Most users will connect with an Ethernet card to the host, which will already have an Ethernet connection. Smaller iSeries users may find a 100mbit Ethernet connection sufficient, but larger user will want to use a 1gbit Ethernet connection.

Extremely large backups may want to use the 10gbit Ethernet available on some iSeries systems.

### Can I try it before I buy it?

- **Unlimited 250 MB backup/restores**
- **14 day free trial**
- **60 Day money back guarantee**

LaserVault Backup is free for downloading libraries up to 250 MB in size. You can also purchase the unrestricted software, with a 60-day money back guarantee.

You can also do unlimited backup and restores for 14 days.

We accept purchase orders, so you can try it before you actually pay for it.

### What releases of OS/400 and I5/OS does it support?

## LaserVault Backup Executive Overview

- **V4R3 or later**

OS/400 release V4R3 and later, and any release of I5/OS.

### **What sort of compression ratio can I expect?**

- **Compression depends on library contents**
- **Typical 8 to 1 compression**

Users have reported compression of 2.8 to 1, up to 22.7 to 1, on different libraries, with about 8 to 1 on application data. Compiled programs compress the least, scripts and source have the highest compression.

We use the compression function built into OS/400. Part of the reason for our high compression is that we compress larger blocks of data at once than most tape drives.

### **Does the SAVF get written to the Series I first?**

- **No SAV file on the Series I host**
- **Direct backup to the PC hard drive**
- **Compression and encryption on the fly**

No, the save file is written to and read directly from the PC, without previously being written to the iSeries host disk. LaserVault Backup does not use save files on the AS/400 host.

### **Is it faster than my current tape drive?**

- **Speed depends on TCP/IP connection**
- **Most users report faster backups than LTO**
- **No manual tape handling**
- **No waiting for rewind**
- **Restores directly from saved library**
- **Automated backup**

If you are currently running non-LTO tape (such as 8MM) LaserVault Backup will be faster than your current backup, by a large margin.

If you are already using LTO tape for your backup, then you will need to use a 1 Gbit Ethernet connection to get backup speeds faster than LTO. Even if you are running a 100 Mbit network, chances are your Series I machine has a second Ethernet adapter port that can be configure to run at 1 Gbit, since most Series I adapters (such as the 5706) have two ports.

## LaserVault Backup Executive Overview

Newer iSeries users can install 10Gbit Ethernet cards for the fastest possible transfer speeds. Most users will not need this capability.

Most users will get better download speed with LaserVault Backup, and when you factor in the automated cataloguing and the convenience of not loading, labeling, finding, losing, or misusing tapes, the advantages are clear.

### What libraries can not be saved with LaserVault Backup?

- **QTEMP**
- **IFS – coming soon**
- **DLO**
- **SAVLICPGM**

We presently do not support SAVDLO or saving from your IFS, although we will add support for these in the future. You also cannot save or restore from QTEMP.

You cannot do a full system save, We do support saving SAVCFGLV and SAVESECLV to allow you to save and restore your configuration and user profiles.

### What media can I save and restore from?

- **Anything the PC sees as a hard drive**
- **Internal hard drives**
- **External hard drives**
- **NAS**
- **RAID arrays**
- **USB flash drives**
- **DVD+-R**
- **CDR**
- **Blu Ray recordable**

Anything that the PC considers a drive, including internal and external hard drives, network drives, NAS, RAID arrays, USB 'flash drives', DVD, CD-R, and most likely your digital camera or MP3 player.

With LaserVault Backup, your AS/400 backups are now media-independent. That means a backup made today, can be transferred from one form of media to another, and even sent over the network or internet, before it is one day restored to your AS/400.

## LaserVault Backup Executive Overview

One user backed up 29 GB of iSeries libraries creating a 3 GB compressed LaserVault Backup pc file. That file can then be copied to DVD or a flash drive and taken offsite.

### Can I back up the PC backup files with a PC tape drive?

- **Yes, but**
- **Use external hard drives**
- **FTP offsite**

Yes, and we have some users doing this. It is not something we recommend, because tape is unreliable.

In fact, we never recommend backing up anything that you absolutely want to be able to restore again, to magnetic tape.

Why do most sites throw away their magnetic tapes after a year or two and replace them with new ones? Because they expect the tapes to fail.

Writing my organization's essential disaster recovery information to a form of media that I expect to fail, is not something I would want to have to explain to the people depending on that data. When tape was the only affordable medium for backup, it was the best choice available for backup.

Now that there is an alternative that is less expensive, more reliable, far more convenient, and that supports multiple offsite copies, tape is obsolete for iSeries users as the primary method of backup.

### How big a save file can I create?

- **Available hard drive size times compression factor**
- **Compressed before writing to disk**
- **Terabytes**

As large as the PC media will support. For example, with a 1000GB external hard drive and average 8 to 1 compression or greater, you can save an iSeries save file of 8 Terabytes or more.

### Can I copy the data catalog for a second backup?

- **Two backups at once**
- **Export capability**

## LaserVault Backup Executive Overview

Yes, you can set LaserVault Backup to make two copies at once during the download, and you can also export one or more save files to a new catalog, then ftp that catalog, or write it to DVD or CD-R or another hard drive.

Many users connect two external hard drives for their backup, and take one offsite. We use those small USB-powered hard drives for our offsite copies.

### Can I use the LaserVault Backup PC Server software on more than one PC?

- **Licensed by PC server**
- **Multiple purchase discounts**
- **No charge for disaster recovery use**

LaserVault Backup is licensed to imitate the virtual tape libraries it is designed to compete with. **That means you need a license for each PC that performs the SAV function.** This helps us keep the price of the software as low as possible. When you license the software, we give you a key that correspond to the MAC address of the TCP/IP adapter in the PC server, or to the hard drive serial number.

However, we realize that many iSeries users will want to use the software for offsite backup and file distribution. To help make this easier, you can use the LaserVault Backup PC Server software on as many PCs as you want, for restoring files to any iSeries server.

You only have to license the software when you are saving files from an iSeries host.

So if you want to SAVLIBLV and distribute the result to 5, 50, or 500 iSeries hosts, you only need one licensed copy of the LaserVault Backup PC Server software. Restore-only copies of the sever software don't get or need a license key, and we cannot give them support.

We do offer multiple purchase discounts.

### How much does it cost to add more storage space?

- **Supports any size drive**
- **Supports multi-terabyte RAID arrays**
- **No charge for additional storage**

**LaserVault Backup** supports as much storage as you can attach to your PC. At the present time, one catalog cannot span devices, but multi-terabyte RAIDs,

## LaserVault Backup Executive Overview

SANs, and NAS devices are available for PCs. If you use our compression, you should see between 4 and 10 times the raw capacity of the device, in iSeries SAVFs. That means a 500 GB drive costing \$120 should give you between 2 terabytes and 5 B of iSeries backup storage, in a real-world situation.

As we write this, we are seeing 1 terabyte external hard drives for \$400, and they are often for sale near \$300. That would be 5 to 10 terabytes for most iSeries users.

### **Can I automatically delete my backups after a certain period?**

- **You can set a retention period on the host**
- **Backup files on the PC will automatically be deleted**
- **Backup files can be set to \*PERM**

You can configure the LaserVault Backup system to set a default expiration period for your backup files. You can override the period or make a backup \*PERM. On the PC server, the operator can select all backup files that have reached their expiration date, and delete them with a mouse click.

### **Will I be able to restore my libraries on future releases of OS/400 or OS/I5?**

- **We use IBM's backup software**
- **Backups are forward compatible**

We are using IBM's own software to do the saves and restores, and expect that software to remain compatible in future releases of the operating system, since they depend on its use also.

### **If I don't like the software, can I get a refund?**

- **60 day unconditional guarantee**

We offer a sixty-day, no questions asked money back guarantee on all of our software products. So the answer is yes, in the first 60 days after install.

### **Who makes LaserVault Backup?**

- **LaserVault LLC makes LaserVault Backup**
- **18 years of digital archiving experience**

LaserVault Backup is a product of LaserVault LLC, a sister company to Electronic Storage Corporation, a software company that creates and sells archiving

## LaserVault Backup Executive Overview

software, primarily to the IBM midrange market, since 1989. We have well over a thousand product installs on companies of all sizes. Our other products are LaserVault Imaging, LaserVault Reports, LaserVault Workflow, and Content Express. All of them are PC-server-based but well integrated to the iSeries, including application linking, and even green screen report lookup. See [www.laservault.com](http://www.laservault.com) for complete details.

### How do I install the software?

- **Install host software on Series I host**
- **Install PC software**
- **Configure host with PC's IP address**
- **Start backing up**

Complete instructions are in a link on the website [www.laservaultbackup.com](http://www.laservaultbackup.com).

### How do I order LaserVault Backup?

Call or email us, we will email you an order form, which we ask you to fax back to us.

**918-664-7276**  
**800-444-6283**

**LaserVault LLC**  
**5127 S 95<sup>th</sup> E Ave**  
**Tulsa OK 74145**

**[www.laservaultbackup.com](http://www.laservaultbackup.com)**