

## Virtual Tape Library

### **INTRODUCTION**

Data backup is essential in every IT environment but is becoming cumbersome, expensive, time consuming and error prone as data storage capacities increase dramatically in virtually every organization. More and more data combined with shorter and shorter backup windows demands a solution. The answer is here – virtual tape library. Especially when combined with a continuous data backup option, there is no longer any reason to leave data, especially databases unprotected.

#### *Protects your investments*

As the name suggests, a virtual tape library emulates the operation of your tapes but records the data on disk arrays and keeps virtual tape images on-line. The virtual tape library works with industry-standard, third party tape backup software, procedures and scripts. To your backup software, the virtual tape library looks exactly like a physical tape drive.

#### *Saves time*

Clearly, writing the image to disk rather than tape saves time during both the backup and restore phases. When it comes time to restore an image or file, the data is immediately accessible on line. Virtual tape also eliminates the time consuming effort to insert, remove, label and organize numerous tapes in environments where there are separate tape drives on each server. It also eliminates the risks inherent in mechanical failures of tape robotics, in the writing, verification and reading of tape media and simple tape overflows. It has been well publicized that typically 30% of tape backups simply fail. Finally, in many environments the costs of tape media alone is approaching the cost of disk storage.

#### *Tape replacement*

In some environments, data is copied to tape after disk-to-disk backup and in other environments, data is copied over the Internet to a remote location and never copied to tape. Backup and recovery without tapes is now feasible and is becoming more popular as IT managers realize that tape is just one of many potential backup media choices.

#### *Optimizes backup strategy*

System administrators can use any backup strategy. Data can be written daily for typical workgroup environments. More active departmental servers can backup often, using snapshots. Intense database applications like Oracle and Microsoft Exchange can run continuous data backup using intelligent application agents to backup the application at moments when the database is in a coherent state. The database can then be rolled back to one of many such coherent points in time during a day as needed. This preserves most or all of the current days work from a data corruption, virus or local disaster of any kind.

### **WHY VIRTUAL TAPE LIBRARY**

- Shrinking backup windows
- High tape failure rate
- High cost of robotic libraries
- High media cost
- Prohibitive administrative time
- Preserve backup software investment
- Use existing backup scripts

### **REQUIREMENTS**

- Virtual tape software
- Sufficient disk space

### **TYPICAL ENVIRONMENTS**

- Large primary storage
- Limited administrator time
- Short or no backup window
- High cost of downtime
- Existing backup procedures

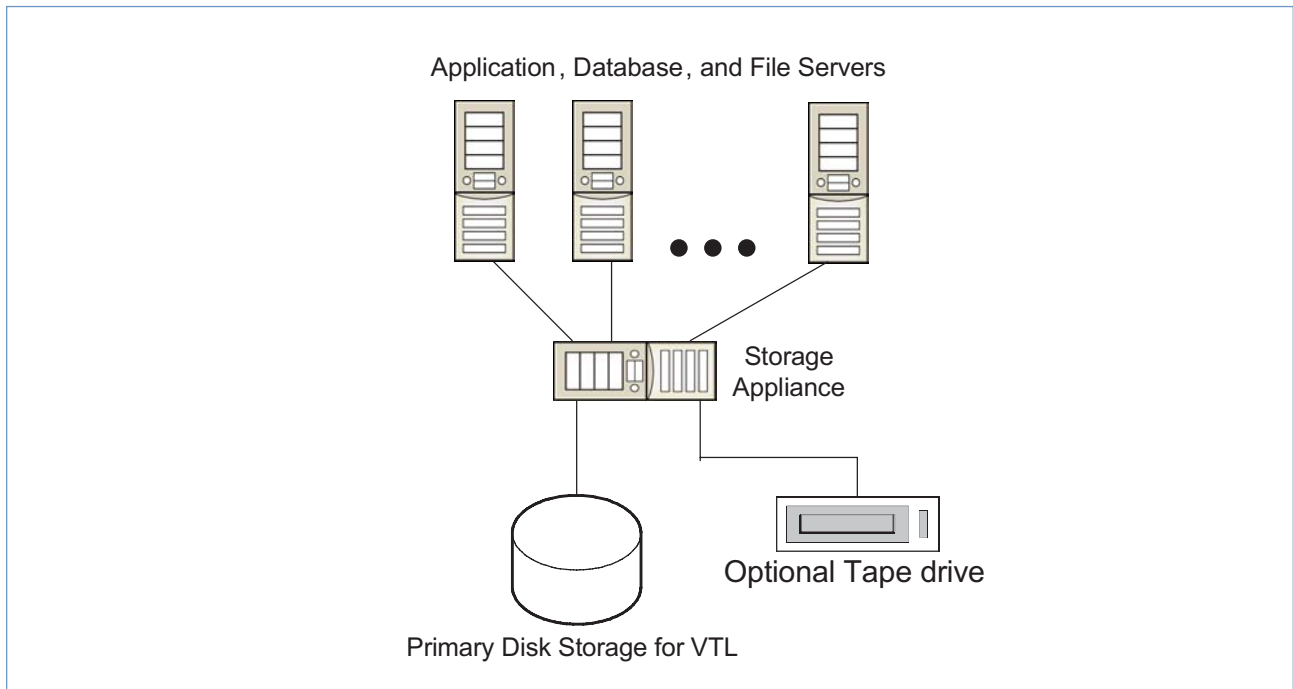
### **BENEFITS**

- Faster backup
- Faster recovery
- Higher reliability
- Higher availability
- Lower cost
- Preserves investments

## HOW IT WORKS

A storage appliance is installed on your network and the system administrator provisions disk storage to be used as a virtual tape storage area. The backup applications are pointed to the virtual tape storage area as a substitute for a physical tape device. Data is recorded on disk in the virtual tape storage area. Data recovery is performed in the reverse manner by pointing the recovery software to the same virtual tape storage area. Performance of both backup and recovery are greatly speeded by replacing tape with disk arrays that run much faster.

If desired, tape can ultimately be made from the virtual tape images by simply copying to tape. This is done without affecting the primary application server. This operation is known as disk-to-disk-to tape backup as the first copy is made quickly to disk and then copied at leisure at standard speed to tape for archival and remote site storage. In the meantime, the disk-to-disk virtual copy was made quickly and is immediately ready for recovery either before or after the tape copy is made. This is especially convenient if the tape is normally removed from the primary site.



**In this illustration, backup from multiple servers are made to the virtual tape library storage. Later a disk to tape procedure copies the virtual tape image to physical tape that are removed and placed in a remote off-site archival storage facility.**