# Instant Archive - Rapid Recovery: the LAN-free Solution

Oxford University ADSM Symposium
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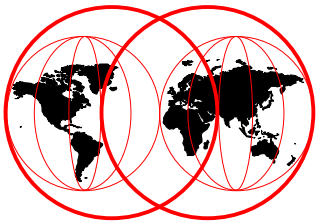

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## Agenda

**Instant Archive / Rapid Recovery and Backup Sets**

**Work with Backup Sets**

**Demonstration**

# Instant Archive and Rapid Recovery

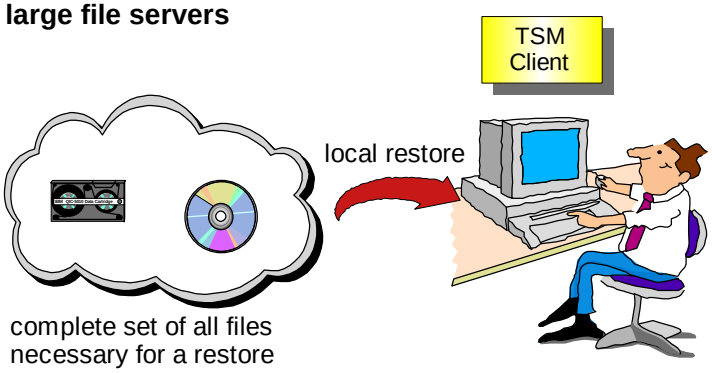
**Portable snapshot created on server**

**Used for long term retention or rapid recovery**

**Client can restore data LAN-free**

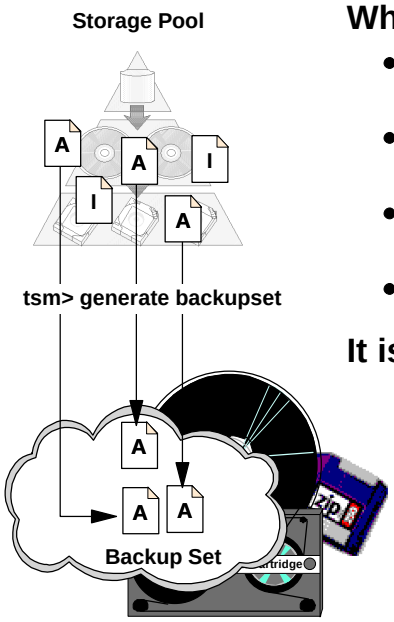
**Eliminates network dependency**

**Mobile users, large file servers**





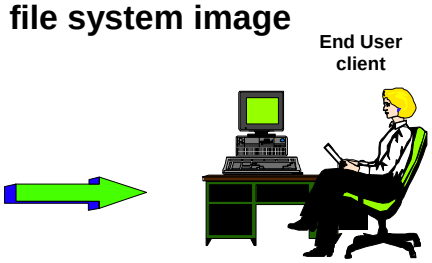

# Backup set




## What is a backup set?

- Snap shot of active backed up files from one client
- Stored and managed as a single object via volume history
- On specific media or server storage (but not within a storage pool)
- Granularity is file space level

## It is not a file system image



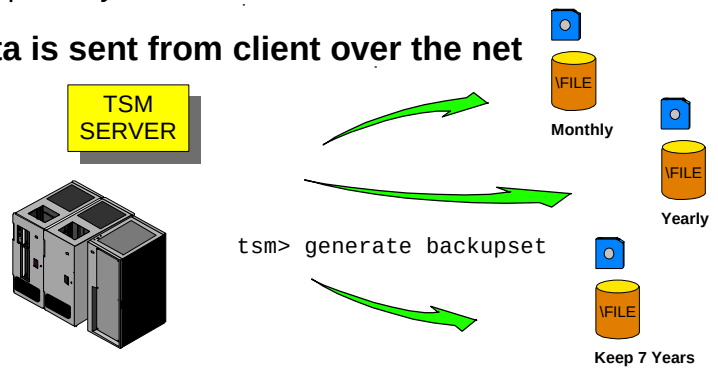
# Instant Archives

**Point in time archives**

**Retain long term storage of periodic backups**

- Monthly backup
- Yearly backup
- Keep for 7 years

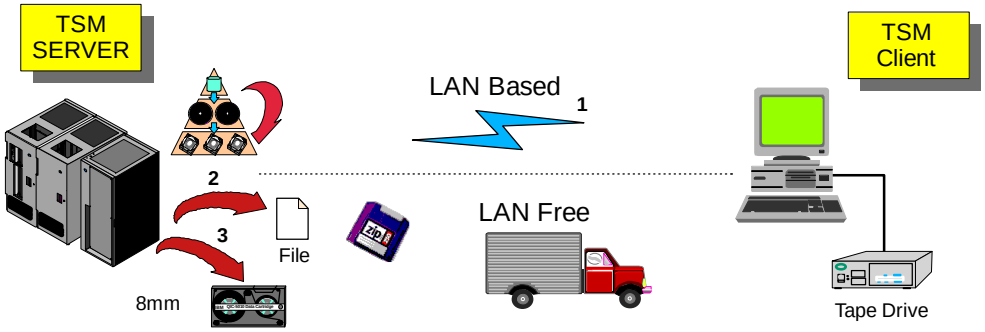
**No data is sent from client over the net**






# Rapid Recovery

- LAN Based (1)
- LAN Free
  - Device class file (2)
  - Any tape device class supported by the client (3)



# Planning for generating a backup set

## Sequential device classes supported

- Two possibilities to keep backup set:
  - Store on server using device class for tapes
  - Move to removable (portable) media
- For portable backup set plan devcl MAXCAP to match media capacity, examples:
  - CD-ROM: 650 MB
  - ZIP drive (on NT): 100/200 MB (on NT)
- Define device class for each capacity

## Granularity is file space level

## All active files of last TSM backup

## Use retention parameter for instant archive



# Generating a backup set

## Administrator generates backup set

- System, policy, or owner authority required
- Can specify file space, a device class for sequential devices, a unique description and a retention period

```
tsm: 78AXFXW>generate backupset MLRES2
             mlres2_monthly_c   \\78axfxw\c$
             descr="Monthly backup, July 13 1999" devcl=file
```

## Backup set consideration when using

- Sequential tape
  - Not part of storage Hierarchy
  - Tracked through volume history
- Device class FILE
  - Creates backup set file with extension .OST for devcl=file
  - .OST file in plain ASCII format
  - Creates unique identifier as suffix to backup set name

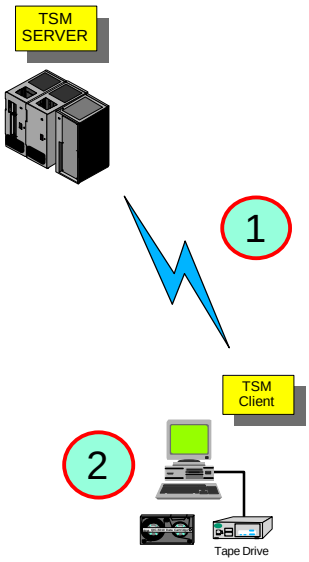
# Backup set restoration

## Two forms of backup set restore

- Server based backup set restore
- Lan Free/local backup set restore

## Support in GUI and command line clients

- Not supported in EM Web Client

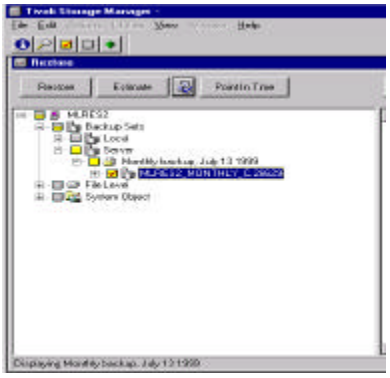





# Server based backup set restore

## From b/a client GUI or command line

- Select restore option for backup set
- Select server and the backup set you want to restore
- Server finds location of the backup set in the volume history table



```
tsm> restore backupset mlres2_monthly_c.26629
Restore function invoked.

ANS1247I Waiting for files from the server...
Restoring               0 \\78axfxw\c$\ [Done]
Restoring       1,032,347 \\78axfxw\c$\ [Done]

Total number of objects restored:                 2


Elapsed processing time:                  00:00:01
```

```
ANR0406I Session 1 started for node MLRES2 (WinNT) (Tcp/Ip 9.1.151.246(2318))
ANR8340I FILE volume C:\ADSM\SERVER\31916307.OST mounted.
```

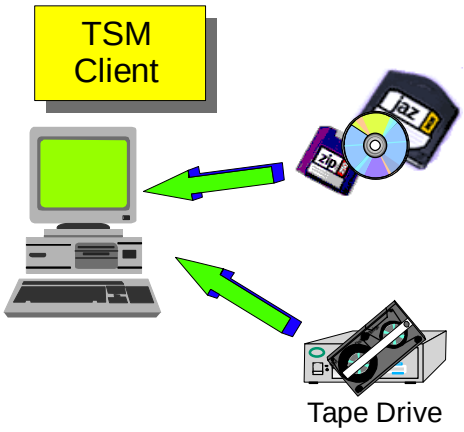
# Lan-free backup set restore

**No dependence of TSM server (when restoring with CLI)**

**Full B/A client support for restoration of FILE device class**

**All clients support restore from device class FILE, AIX supports restoration from 8mm tape  volumes**

**Security: restoring node name must be identical with node name at creation time**






# Local backup set restore with FILE device

- **Can be restored from many different file system media**
  - Cdrom
  - Jaz,Zip
  - Disk
- **Backup set volumes can be renamed and broken in smaller files**

```
tsm> restore backupset c:\vols\ *.* c:\test\ -loc=file
Restore function invoked.

Node Name: 78AXBAN
Session established with server Virtual Server: Virtual Platform
  Server Version 1, Release 1, Level 1.1
  Server date/time: 00/00/0000 00:00:00  Last access: 00/00/0000 00:00:00

ANS1247I Waiting for files from the server...
Restoring 1,032,347 \\78axban\c$\ss503455.pre -->
\\78axban\c$\test\ss503455.pre [Done]
```

## Local backup set restore with tape media

- **No dependency on ADSM device drivers on the client machine**
- **Supported from B/A client command line**
- **If read from tape backup set name not required**

```
tsm> restore BACKUPSET /dev/rmt0 -LOCation=tape
```



## Backup set move

**Backup set can be moved to another Tivoli Storage Manager server**

- Define existing backup set to another server
- Node name of client must be registered to server
- Device type of device class must match originating device type
- Volumes must exist in a sequential device class on server storage

```
tsm: 78AXFXW>define backupset mlres2 budget_data.37892
             devcl=3570 vol=bud1,bud2 retention=730
```

**The `Q VOLHIST TYPE=BACKUPSET` displays, what command used**

**Backup set can now be restored by client**

- Client can restore using GUI or command line

# Manage backup set information

## Backup set entry in volume history table

- Fully self-describing entry
- Information also stored at beginning of backup set file
- Retention period has to be defined, no management classes used

```
       Date/Time: 07/13/1999 17:38:26
     Volume Type: BACKUPSET
   Backup Series:
Backup Operation:
      Volume Seq: 1
    Device Class: FILE
     Volume Name: C:\ADSM\SERVER\31916307.OST
 Volume Location:
         Command: GENERATE BACKUPSET MLRES2 mlres2_monthly_c \\78axfxw\c$
                   DEVCLASS=FILE RETENTION=365  SCRATCH=YES
                   DESCRIPTION="Monthly backup, July 13 1999" WAIT=NO
```

## Backup set volumes return to SCRATCH after retention period

## Delete backup set information from server

- Information stored in server can be removed by administrator using DELETE BACKUPSET command

## Cannot be deleted from volhistory by `DEL VOLHIST` command



# REMOVABLEFILE device type

## Supported on UNIX and NT

## Device type, similar to FILE device type with differences in volume label, mount and unmount processing

## Allows for the mounting a removable media

- ZIP's
- JAZZ
- CD-ROM
- CDRW

## Useful for server to server move for backup sets