TAPESYS

OpenVMS Media and Backup Management

Conversion

from

HP's SLS

TAPESYS

A Primer for Converting from HP's SLS

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Welcome to the world of TAPESYS, the OpenVMS tape management system developed in 1983.

We welcome your interest in TAPESYS, and we look forward to your becoming our newest user. We're sure you'll find the TAPESYS experience highly satisfying, and we look forward to having our product and service department exceed your expectations.

Our clients have always been the driving force behind our product innovation.

One day long ago (it was toward the end of the first Reagan term), a user called us and said that his site was going to a new level of security. He had to have all tapes degaussed before they could be returned to the scratch pool. We devised a special category for tapes to fall into when their expiration dates were reached: Limbo. While only a handful of users have ever used this category, it's there as a run option for anyone who needs it.

Another time, a user called and said he had this new tape drive that could load a stack of blank tapes and write to each one in succession. We enabled the 'auto select' feature in response, thus accommodating a stack of scratch tapes on this device. This feature came to be used by hundreds of clients, as the auto-feeding TU65 came into use at large sites everywhere.

When you are a client of ours, your wishes and needs become top priority for us. Let us know what you want, and more than likely, we'll add it to the product!

Meet TAPESYS.

TAPESYS is accurate, complete and on time. Developed for the OpenVMS environment in the very early eighties, it is also friendly, efficient, easy to install and use. TAPESYS has come to be used at hundreds of sites around the world, and today has over 10,000,000 tapes under its management.

The program control files are designed to be customized, so you have a lot of flexibility to set site-specific standards that will be implemented consistently. Developed by the VMS people at Software Partners, TAPESYS automates backups (file backups and RMU backups); maintains the entire media library; drives any jukeboxes you have; controls access to files on tape or other removable media; mediates access to ALL tapes, whether in the system or not; and simplifies user-requested backups and restores for everyone. And TAPESYS keeps track of all transactions to and from storage on a master file so that there is always an audit trail.

TAPESYS never forgets, never gets sick, never asks for a raise, and never complains.

TAPESYS doesn't do all these things and more: TAPESYS doesn't let unauthorized users access inappropriate files; it doesn't let users keep unused files on disk indefinitely (that's optional); it doesn't ever mix up tapes from different pools (it doesn't let the operator mix them up either); it doesn't let scheduled backups slip by; it doesn't lose reel identification numbers, tapes, or volumes. *And just as in mainframe environments, it doesn't let the operator mount the wrong tape!*

TAPESYS
The OpenVMS Tape Management System

HISTORY

1979 TAPESYS runs in-house on VMS V1.3 while operators use DSC to create "backup" tapes.

1980 TAPESYS runs in-house on VMS V2, the first VMS to have an authentic, native file backup function.

1982 Software Partners forms to market TAPESYS to the VMS world.

1983 Albany Medical Center buys first license of TAPESYS, and has used it ever since. AMC is quickly followed by Mobil R&D, Standard Oil, Republic Bank, and Dow Chemical.

1987 Software Partners releases THRUway, to backup remote disk drives to local tape drives under control of TAPESYS.

1988 Digital Equipment Corporation buys a copy of TAPESYS to private-label, calls it SLS.

1990 Software Partners releases V4 of TAPESYS for DEC Alpha

1995 Software Partners releases V5 of TAPESYS, containing first SLS-to-TAPESYS conversion kit.

2001 Software Partners releases V6.1 of TAPESYS; subsequent minor versions are released during the ensuing four years.

2005 Software Partners releases V6.2 of TAPESYS for Itanium

COMMON GOALS: TAPESYS and SLS
- Manage tapes
- Manage all backups
- Maintain online history
- Provide RMU backup platform

TAPESYS SPECIALTIES
- ODS-5 file compatibility in online history database
- THRUway compatibility – backup and restore remote disks as if they were local
- JB compatibility – a complete management system for tapes in and out of your jukebox

AVAILABLE
- Immediately – you could be converting in five minutes
- From Software Partners today
- Call for a fully-functioning demonstration copy for your site

TAPESYS IS OUR FUTURE
- We live or die by our software
- We will always be supporting TAPESYS

Glossary of common terms.

allocate
To reserve something for private use. In SLS or TAPESYS, a user is able to allocate media sets for backup operations.

allocated
A volume state. Volumes that are reserved for exclusive use by a user are placed in the allocated state. Allocated volumes are available only to the user name assigned to that volume.

back up
To make duplicate copies of one or more files, usually onto different media than the original media. This provides the availability to restore the original data if it is lost or corrupted.

BACKUP
The DCL command for the VMS Backup utility.

BACKUP format
Standard VMS BACKUP format. The BACKUP format is the recording format used by the VMS Backup utility to back up data to save sets.

backup process
The duplication of files. SLS and TAPESYS use the VMS Backup utility to perform backup operations on BACKUP formatted volumes. Backup operations can copy standard VMS files on a Files–11 structured system disk or create BACKUP save sets to magnetic tape, a system disk, or an optical cartridge. Backup operations can also restore save sets to the standard VMS file format, restoring them from the save set volume to a Files–11 structured disk. *See also* save process

batch process
A process where the operating system executes commands that are placed in a file. The file is submitted to the system for execution.

cartridge
An enclosure that contains a recordable medium.

client node (SLS), satellite node (TAPESYS)
The nodes that do not have direct access to the database. These nodes send database requests to the server (in TAPESYS, PRI or SEC) node.

deallocate
To relinquish ownership of a device or media set.
• When a drive is deallocated, it is then available for allocation by other processes.
• When a media set is deallocated, it is either immediately available for allocation by other users or moved into a transition state.

down
A volume state. Volumes that are either damaged, lost, or temporarily removed for cleaning are placed in the down state.

free
A volume state. Volumes that are available for allocation by users are in the free state.

label
Label has two meanings:
1. Information recorded at a fixed location on the media that identifies the volume to software.
2. The physical printed label attached to the outside of a tape or cartridge to identify it.

log file
Any file into which status and error messages are written to reflect the progress of a process. In SLS and TAPESYS, a log file is used to record the status and errors of save operations.

media
A mass storage unit. Media provides a physical surface on which data is recorded. Examples are magnetic tape, tape cartridge, and optical cartridge.

media set
A logical association of media, regardless of its physical location.

menu
A displayed list of options from which you make a selection.

never
A volume state. Media will never be freed. It is allocated to its owner(s) permanently.

note string
In SLS and TAPESYS, a sequence of alphanumeric characters that provides information about a volume.

on-line history files
History record files.

OPER privilege
The level of privilege required by a system operator to suspend a SLS or TAPESYS operation and to perform a variety of maintenance procedures on volumes, as well as archive files and saved system files.

output file
A file that contains the results of a processing operation (for example, a file that contains the results of a restore).

record
A set of related data treated as a unit of information. For example, in SLS and TAPESYS, each volume that is added to the database has a record created that contains information on that volume.

recorded label
The label recorded on the media.

recording format
The unique arrangement of data on a volume according to a predetermined standard. Examples of recording format are BACKUP, EBCDIC and ANSI.

restore process
The method by which the contents of a file are recovered from a volume or volumes that contain the saved file. SLS and TAPESYS restore file contents by reading BACKUP save sets from one or more volumes, extracting the file contents from those save sets, and placing the information onto a Files–11 structured disk where the restored file can be accessed by a user.

save process
The method by which copies of files are made on magnetic or optical cartridges for later recovery or for transfer to another site.

save set
A file created by the VMS Backup utility on a volume. When the VMS Backup utility saves files, it creates a file in BACKUP format called a save set on the specified output volume. A single BACKUP save set can contain numerous Files–11 files. Only BACKUP can interpret save sets and restore the files stored in the save set.

scratch date
In SLS and TAPESYS, the day on which an allocated storage volume is scheduled to go into the transition state or the free state.

server node(SLS), primary (PRI) or secondary (SEC) node (TAPESYS)
The node to which all SLS or TAPESYS database requests are sent to be serviced. In a high availability configuration, when the active server node fails, another node in the OpenVMScluster system becomes the active server node.

slot
A vertical storage space for storing a cartridge. The storage racks and cabinets used in data centers contain multirow slots that are labeled to easily locate stored media.

standby server process (SLS), DB process (TAPESYS)
Any server/TAPMGRDB process that is not currently active. The standby server/ TAPMGRDB process waits and becomes active if the active server/TAPMGRDB process fails.

system backup
SLS or TAPESYS system backup procedure. The system backup procedure usually uses the VMS Backup utility to save system files.

tape cartridge
A basic unit of media.

transition (SLS), limbo (TAPESYS)
A volume state. Volumes in the transition or limbo state are in the process of being deallocated, but are not yet fully deallocated. The transition or limbo state provides a grace period during which a volume can be reallocated to the original owner if necessary.

unused
A volume state. Media is in the database but is not available for allocation. Unused is similar to down.

vault
An off-site storage location to where volumes are transferred for safekeeping.

VMS Backup utility
A VMS Operating System utility that performs save and restore operations on files, directories, and disks using the BACKUP recording format.

volume

A logical unit of data that is stored on media. A volume can be stored on a single magnetic tape or disk, or as in the case of an optical cartridge, can refer to one side of double-sided media. A volume assigns a logical name to a piece of media, or to a side of double-sided media.

volume ID

The volume identification used to verify that the correct volume has been selected. The volume label should be the same as the volume ID.

volume set

One or more volumes logically connected in a sequence to form a single set. Volume sets are usually created when a single logical unit of data needs to be stored on more than one physical medium.

volume state

A volume status flag. In SLS or TAPESYS, volumes are placed in one of the following states:

- Free
- Allocated
- Transition/Limbo
- Down
- Never
- Unused

Key Differences

- **TAPESYS has been ported to Itanium**
- **TAPESYS has a "helper" application, JB, that takes care of the automation of tape libraries/jukeboxes**
- **Tape master file has integrity checking for fields like vault name, location, media types, pool names, container names**
- **Reworked (improved) alias system**
- **USRBAK functionality folded into the SYSBAK process while preserving the individual user backup facility**
- **Integration of VMS Backup and RMU backup utilities into one easy-to-use utility backup configuration template**
- **Parallel backup mechanism allows constant streaming of data to two or more similar tape drives, greatly reducing drive idle time**
- **Daily checking procedure to ensure that ALL of your disks are being backed up**
- **TCP and ICC transports in addition to DECnet**

The SETUP.PAR file.

The SETUP.PAR file is essentially a list of logical names. It specifies the settings that you want your implementation of TAPESYS to have. Think of it as an owner's manual or a Bible for the software. In this file, the system manager specifies which nodes are the main nodes for the product, and also specifies the names of the history file groupings and default locations for the onsite and offsite destinations.

TAPESYS SBK Files.

An .SBK file is a control file used to tell TAPESYS what files/disks to back up and when to do it. Depending on the number of disks and tape drives you have, you might have one .SBK file or several dozen .SBK files. By adjusting the values in an .SBK file, you control the flexibility of the backup options, depending on your site's specific needs.

Do you only have one system manager doing all of the work at your site, and this person is trusted with all tape operations? Then set CONTLOADOPT to allow this individual to erase over tapes for a new backup, or with a new label. Do you have a tape library available for backup data? Then allow TAPESYS to automatically select the correct tape to be used for the backup. These settings and others are in the .SBK files.

What you'll need to get started with the conversion.

- TAPESYS (and JB, if you are using a tape library with this system) savesets; on CD or access to them via FTP from Software Partners
- A valid license key from Software Partners
- Time to conduct the installation/ configuration (at least one hour, and perhaps two or more)

Step-by-Step Process

1. Install TAPESYS V6.2 on your system from the SYSTEM account.
2. Run the command procedure CONFIGURE_TAPESYS.COM (located in the .SYSTEM directory).
3. When asked if you wish to convert an old database file, reply "yes" (for this conversion, SLS can be viewed as if it were a TAPESYS V5.2 installation).
4. Once the database has been successfully converted and the command procedure has finished, install JB from the SYSTEM account if you are using SLS with a tape library.
5. Once JB has been installed, bring up TAPESYS and JB.
6. Issue the JB DEFINE JUKEBOX command to define a jukebox instance and its corresponding location in TAPESYS/JB.
7. Issue the command JB DEFINE VOLUME/AUTO/LENGTH=n "" juke_nam to define your tape volumes in JB.
8. Issue the command JB CONFIG juke_name to synchronize the products so TAPESYS will know what tapes are currently in the jukebox.
9. If you have more tapes than slots in the jukebox, rerun step 7 after swapping another set of tapes into the jukebox. Continue this procedure until all tapes in the database are "known" by and defined in JB.

Troubleshooting.

TAPESYS and/or JB fails to start.
- Is the license key in the correctly-named file/location? If you are using TAPESYS to autostart JB, did you specify the appropriate parameters in the SETUP.PAR file for TAPESYS for this (JB_HOME and JB_OPTION)?

TAPESYS and JB are both running, but they don't seem to "know" about each other/they aren't in sync.
- Was JB started manually without the TAPESYS_DATABASE parameter? Was JB autostarted from TAPESYS, but JB_OPTION wasn't specified in the TAPESYS SETUP.PAR file?

Need Help?

Call 877-TAPESYS for help!
Outside the US call 1-978-887-6409.