TapeSaver™

Reference Manual

Release 2.3.0

UNICOM®

SYSTEMS, INC.

TAPSAVRM23-01

This manual applies to TapeSaver release 2.3.0 and to all subsequent releases of the product until otherwise indicated by new editions or updates to this publication.

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Contents

About This Manual

This manual provides a reference to the control cards used in TapeSaver Release 2.3.0. It is intended for the experienced user who has set up their TapeSaver job runs and want to manipulate the control cards generated by the panel options.

Audience

This manual is intended for system administrators or other data center personnel. Readers are expected to understand MVS and TapeSaver concepts.

TapeSaver Documentation

The titles and descriptions of all TapeSaver manuals included with Release 2.3.0 are shown in the following list.

- *TapeSaver Release Notes*
  Explains TapeSaver installation requirements, product enhancements, and a procedure to migrate to Release 2.3.0 from an earlier release.
- *TapeSaver Installation And Configuration Guide*
  Describes procedures to install TapeSaver and configure it for use.
- *TapeSaver User Guide*
  Describes typical uses for TapeSaver.
- *TapeSaver Reference Guide*
  Provides a summary of commonly used TapeSaver reference information.
- *TapeSaver Report Guide*
  Presents an example of each TapeSaver report and a description of each report field.
- *TapeSaver Messages and Codes*
  Lists messages and codes generated by all TapeSaver components.

An online version of each manual is distributed on a compact disk (CD) as part of the TapeSaver Release 2.3.0 product package. These manuals can be viewed with Acrobat Reader with Search, which is a free viewing tool available from Adobe Corporation.

Included on the TapeSaver documentation CD is a file to install Acrobat Reader for PCs running a 32-bit release of Windows. Read the CD's readme.1st file for instructions to install Acrobat Reader.

The latest version of Acrobat Reader with Search can be downloaded from the Adobe Corporation web site:

http://www.adobe.com/acrobat/

Customer Service

UNICOM Systems Customer Service can be reached by the following methods:

Voice	818-838-0606
Fax	818-838-0776
E-mail	support@unicomsi.com

Normal business hours are from 7:00 a.m. to 4:00 p.m. Pacific Standard Time, Monday through Friday. Emergency customer service is available 24 hours a day, 7 days a week.

An answering service receives customer service calls beyond normal business hours. You may leave a message if it is not an urgent problem. A customer service representative will return your call at the start of the next business day.

Requests for urgent support outside of normal business hours are answered immediately. A customer service representative will be summoned to return your call. Leave a phone number where you can be reached. If you have not received a return call from a Customer Service representative within an hour of reporting the problem, please call back. Our customer service representative may be experiencing difficulties returning your call.

International customers should contact their local distributor to report any problems with a UNICOM Systems product.

Getting Customer Support from Our Web Site

A Support and Services web page provides Customer Service information about every UNICOM Systems product. Use the following URL to browse the Support and Services web page:

http://www.unicomsi.com/index.html

The Support and Services web page provides an online form to report a problem with a UNICOM Systems product. Use the following URL to complete and submit a Technical Support Request form:

http://www.unicomsi.com/support/index.html

Diagnostic Information

This section describes diagnostic data you should collect before reporting a TapeSaver problem to UNICOM Systems Customer Service. Having this information ready beforehand will enable the customer service representative to resolve your problem more quickly.

- MVS and JES release numbers
- Related error messages
- Command or JCL used to submit the failing job
- Dump, if one is generated, and register contents from the JESlog

TapeSaver Control Cards

TapeSaver operates according to values set with control cards; individual statements from the SYSIN DD. This document describes TapeSaver control cards, their syntax, and how they are used to specify TapeSaver's operating conditions.

Control cards are generated by the TSO/ISPF application when you use TapeSaver interactively. Usually, you have no reason to be concerned with the format and use of these control cards, but they are described in this chapter for reference.

Control Card Syntax

A few general rules apply to all control cards:

- All control card statements must be in upper case.
- Control cards can contain any number of blanks within the control card text
- You can continue a control card on a new line by entering a plus sign (+) or dash (-) as the last non-blank character of the current line.

Notation Conventions

A few syntax notations are used to help you determine how to build your control cards.

- { } (braces) indicate a required option which has more than one valid choice.
- | (vertical bar) indicates a choice between or among options.
- [ ] (brackets) indicate an optional control card specification.
- ISPF Interface and Control Cards

The TapeSaver ISPF interface eliminates the need to write and test control cards. It is recommended that you use this interface instead of writing your own JCL and control cards as much as possible. Future releases of TapeSaver may require control card changes, all of which will be transparent to any ISPF interface user.

CONFLICT Control Card

The CONFLICT control card augments any conflict analysis performed by the SMF extraction job. Conflicts involve two types of datasets:

- Datasets allocated DISP=MOD (and therefore must be the last dataset on a tape)
- Datasets accessed at the same time by one job (and therefore cannot be stacked together on the same tape).

Syntax

```
CONFLICT {FILE | DISP} dsname1 dsname2
```

FILE — specifies the names of a pair of datasets used simultaneously by the same job. If TapeSaver knows two datasets are used concurrently, it never stacks them on the same tape. Specify both fully qualified dataset names (no quotation marks). You can use wildcards to name your datasets.

DISP — specifies the name of a dataset allocated DISP=MOD by at least one job. If TapeSaver knows a dataset is allocated MOD, it never stacks a dataset behind it on a tape. Specify the fully qualified dataset name (no quotation marks) in the *dsname1* field and ignore *dsname2*.

Examples

- `CONFLICT FILE SYS.DSNAME1 SYS.DSNAME2`

  Do not stack datasets SYS.DSNAME1 and SYS.DSNAME2 together because they are used concurrently by a single job.

- CONFLICT DISP SYS.MOD.DSNAME

  Ensures that no datasets are stacked behind the dataset SYS.MOD.DSNAME because it is known to be opened with DISP=MOD.

DEFAULTS Control Card

The DEFAULTS control card is used to customize TapeSaver operation for your environment. It has many options which can be specified separately on individual control cards, or can be grouped on one DEFAULTS control card.

Syntax

```
DEFAULTS option(value)
```

option is one of the control card options shown in the table below.

value is an appropriate value for the control card option.

You can specify as many or as few DEFAULTS control cards as you wish. You can combine options on a single control card, or specify each option on a separate control card. For any options which are not specified in any DEFAULTS control card, the value shown in the default column below is used.

Option	Values	Default	Description
AUT_MOUNT_DELAY	0-9999	45 seconds	Average mount delay (in seconds) for automated tape mounts.
BLKCT0_OVERRIDE	1-9999	1	If a dataset with a zero block count is selected for processing, TapeSaver must override the zero block count with a number. The value in this field indicates the block count that will be used. Note: Datasets with a zero block count are selected or rejected based on your entry to the following question of the Input Dataset Selection Rules panel: “Stack datasets with zero block count (empty)?”
BLKSZ0_OVERRIDE	0-32767	N/A	TapeSaver uses a multiplication algorithm to calculate the size of a file. If a dataset has a block size of zero, the results of the multiplication will always be zero. Since TapeSaver cannot work with a file length of 0, the dataset is rejected from processing. The rejected dataset will show up on the Reject List report with a reject code of BLKSIZE0. This option lets you specify a value that should be used to replace 0 in the multiplication algorithm.
CART_COST	0-99	5	Average purchase cost of a new tape cartridge.
CART_LENGTH	N/A	520 ft.	Length of a 3480 or compatible cartridge. You only need to concern yourself with this if you have non-standard cartridges.
CART_OFFSITE_COST	0-99	1	Average annual cost of storing a tape cartridge offsite (storage, transportation, etc.)
CART_ONSITE_COST	0-99	1	Average annual cost of storing a tape cartridge in the data center (floor space, racks, etc.)
CATLG_UNCATS	YES | NO	NO	YES Catalog uncataloged datasets after stacking them. NO Do not catalog them.

Option	Values	Default	Description
CDAY	TAPE | DAY	DAY	Used by TSCYCLE to determine how to handle cycle control datasets that have the same dataset name and were created on the same day. This option is equivalent to the CA-1 option of the same name. DAY — All the datasets are in a single cycle. TAPE — Each dataset is a separate cycle.
CJOB	DSN | JOB	DSN	Used by TSCYCLE to determine how to group cycle control datasets that have the same dataset name but different creating job names. This option is equivalent to the CA-1 option of the same name. DSN — The dataset name alone is used in cycle control processing. The datasets may be in the same cycle group depending on other grouping criteria such as creation date. In effect, the differing creating job names are ignored for the purpose of cycle control processing. JOB — In effect, think of this as simply enlarging the dataset name by prefixing the job name to it. This combined name is used in cycle control processing.
COMPACTION	0-99	0	If you have tape drives with the Improved Data Recording Capability (IDRC) feature, specify the percentage of compaction assumption you want TapeSaver to use when computing the size of tape datasets.
COPY_ERROR_ACTION	IGNORE | SKIPFILE	SKIPFILE	Tells TapeSaver what to do when an unrecoverable I/O error is encountered while copying a file. SKIPFILE — Excludes the file with the errors and goes on to the next file in the list. IGNORE — Continues copying the file, skipping over the record where the I/O error occurred. See also the COPY_ERROR_LIMIT option below.
COPY_ERROR_LIMIT	0-999	0	Places a limit on the number of I/O errors to allow when copying a file with the IGNORE option on the COPY_ERROR_ACTION control card. After this number of errors is encountered, the file is excluded.
DEFAULT_ACTION	STACK | NOSTACK	NOSTACK	STACK — Select datasets by default. NOSTACK — Do not select by default. When implementing stacking rules, TapeSaver must know what to do with datasets which do not expressly fall in or out of at least one rule packet. This control card tells whether or not such a dataset should be selected.

Option	Values	Default	Description
EXPDT_DAY_RANGE	0-999	N/A	Controls how files are combined on a tape. For tape datasets which do not have CA-1 keyword expiration dates (e.g. 98ccc, 99xxx), files with expiration dates which are just "close" rather than exactly the same can be stacked together. The larger the spread you allow, the more stacking you are likely to see.
FILTER_SECONDARIES	YES | NO	NO	For multi-file tapes, specifies whether the selection rules are applied to all files or just the first file.
			YES — Selection rules are applied to all files. If *any* file is rejected, then *all* files are rejected. Note: It takes longer to run the Forecast report when this option is set to YES. NO — Selection rules are applied to just the first file. • If the first file is selected, all files on the tape are selected. • If the first file is rejected, all files on the tape are rejected.
FULLTAPE	0-1000	900(90%)	Maximum percentage (in tenths of a percent) of a tape to use. Use this option to help prevent delays caused by forward spacing to a file at the end of a tape (up to 30 seconds for cartridges which are completely filled).
GROUP_BY_INDEX	YES | NO	NO	Activates grouping of datasets automatically by high-level index. YES — All output volumes contain datasets with the same high-level index. Note: Multi-file tapes containing mixed high-level indexes are not selectable as output candidates. NO — No checking is performed against the high-level index.
GROUP_STACK_LIMIT	0-32767	20	Maximum number of files to stack (or volumes to move) per rule packet, in a single run.
IGNORE_OUTCODE	YES | NO	NO	YES — Outcoded datasets can be stacked and outcoded tapes can have datasets added to them. NO — Outcoded datasets and tapes are not included in stacking
IGNORE_CONFLICTS	YES | NO	NO	YES — Ignore conflict rules. NO — Enforce conflict rules.
IGNORE_USER_DATA	YES | NO	YES	YES — Stack datasets despite user data.
			NO — Do not include datasets with user data.

Option	Values	Default	Description
INPUT_STAYS	YES | NO	NO	YES — Input datasets are neither deleted nor uncataloged. Output datasets are not cataloged unless they are renamed in the process.
			NO — Input datasets are scratched and uncataloged. Output datasets are cataloged.
KEYDD	N/A	N/A	The ddname used in a CA-1 environment when creating a tape dataset to indicate that a dataset with an expiration date in 1998 or 1999 is to be assigned a Julian expiration date rather than a keyword date. This ddname is specified on the KEYDD option in the CA-1 PPOPTIONS dataset. Without this specification, there is unnecessary tape handling because -TapeSaver must rewind and dismount tapes to make sure CA-1 properly interprets the dates.
LIST_REJECTS	YES | NO	NO	YES — All datasets rejected for stacking are listed on the Reject List report. See Chapter 6 for a description of the report. NO — Do not generate the Reject List.
LOCAL_OUTCODES	N/A	N/A	This parameter specifies the local data center outcodes. A maximum of 10 location IDs and alternate location IDs may be specified. Each ID must be separated by a blank. Refer to the TLMS DATACTR and ALCTR definitions in the TLMS initialization parameters member (TLMSIPO) for your local specifications. If a tape volume contains a location ID, but that location ID is not specified by this option, the volume is considered outcoded (offsite) and therefore is not a candidate for TapeSaver processing. You can make it eligible for processing when you set up your run definition. On the Input Dataset Selection Rules panel specify Y to the question, “Stack datasets which are considered outcoded.”
LOW_VOL_SPACE	0-999	500(50%)	Maximum percentage (in tenths of a percent) of a tape volume that dataset can occupy and still be considered for stacking. Use this option to ensure that very large files are not stacked.
MAGSTAR_COMPACTION	0-99	0	The average compaction assumption to use when determining the compacted size of a dataset on Magstar media.
MAN_MOUNT_DELAY	0-9999	90 seconds	Average mount delay (in seconds) for manual tape mounts.
MAXDSNS_PER_VOL	9999	9999	Maximum number of datasets to stack on a single tape reel or cartridge.

Option	Values	Default	Description
MAX_INPUT_FILES	0-99999	0	Lets you reject input tapes that contain more than a specified number of datasets. If you have several tapes with a large number of datasets, you may experience performance degradation while producing a Forecast report. You can run the Forecast report faster by rejecting these tapes from the selection process.
			0 Indicates that you want to stack tapes regardless of the number of datasets. *nn* Indicates the maximum number of datasets on the tape before -TapeSaver rejects the tape as input to the forecast process.
MAX_OUTPUT_FILES	0-99999	0	Lets you reject output tapes that contain a specified number of datasets. If you have several tapes with a large number of datasets, you may experience performance degradation while producing a Forecast report. You can run the Forecast report faster by rejecting these tapes from the selection process. 0 Indicates that you want to use this tape for output, regardless of the number of datasets *nn* Indicates the maximum number of datasets on the tape before TapeSaver rejects this as an output tape.
MAX_UNIT_PER_JOB	1-60	60	This parameter defines the maximum number of datasets used by any single job.
MAY_IGNORE_VOLGRP	YES | NO	NO	YES Grouping can be ignored when stacking. If a tape for a dataset that should be grouped cannot be found, the grouping requirement can be ignored. NO Grouping must be honored during stacking. The dataset goes on a scratch tape unless MAY_USE_SCRTCH_VOL is also NO, in which case the dataset is excluded.
MAY_USE_SCRTCH_VOL	YES | NO	NO	YES Scratch volume can be used if required by dataset grouping. NO Scratch tape cannot be used to accommodate grouping.
MIN_DSNBS	0-999	50	Minimum number of entries to keep free for holding information about files on a multi-file tape. Stacking stops when this minimum is reached. Ask your tape management system installer about this option if you are unsure.

Option	Values	Default	Description
MOD_FILES	STACK | NOSTACK	NOSTACK	STACK Stack DISP=MOD files. NOSTACK Do not stack DISP=MOD files.
MOD_PERCENT_FREE	0-99	N/A	Room for growth calculated as a percentage of the size of the dataset when it is stacked. -TapeSaver does not stack a MOD dataset on a tape unless there is room for the dataset plus this additional percentage of the dataset size.
MOD_RECORDS_FREE	0-99	N/A	Room for growth calculated as the room required to hold an additional number of blocks in the dataset. TapeSaver does not stack a MOD dataset on a tape unless there is room for the dataset and this number of additional blocks.
MOVE_EXPIRED_FILES	YES | NO	YES	YES When stacking or migrating from multi-dataset tapes, TapeSaver will move datasets which have already expired. NO Don't move files which have already expired.
NOSTACK_EXPDT_RANGE	0-999	0	To avoid processing datasets and volumes due to expire soon, specify a number of days. Datasets or volumes that expire within that number of days are rejected.
OBJECTIVE	STACK | VOLMOVE | TSCYCLE	STACK	STACK Objective of run is dataset stacking. VOLMOVE Objective of run is to move datasets to a scratch tape (for offsite mailing, archiving, migration from one media type to another, etc.). These datasets are recataloged on the new tape volume. The input volume is scheduled to be scratched. TSCYCLE Replacement for CA-1 TMSCYCLE module.
PAGE_LEN	0-999	60	Number of lines per page to use when formatting reports.
POLL_CSC	YES | NO	NO	YES Use the STK CSC (Client Software Component) interface. Note: Do not specify YES if the STK CSC interface does not exist. If TapeSaver attempts to load SCSXCAL, the module that initiates the CSC interface, an S806 abend will occur. NO Do not use the STK CSC interface.

Option	Values	Default	Description
RECOVER	YES | NO	YES	YES Attempt to recover from abends and continue processing. Any file being copied when an abend occurs is marked as a copy failure. NO Do not attempt to recover when an abend occurs.
REEL_COST	0-99	15	Average purchase cost of a new tape cartridge.
REEL_LENGTH	800-2400	2400	Length of a tape reel.
REEL_OFFSITE_COST	0-99	1	Average annual cost of storing a tape reel offsite, include storage, transportation, and so on.
REEL_ONSITE_COST	0-99	1	Average annual cost of storing a tape reel in the data center, include floor space, racks, and so on.
RESTACK	YES | NO	NO	YES For this run definition, tapes stacked by TapeSaver are eligible for restacking, moving, or copying. NO Tapes stacked by TapeSaver are not eligible for restacking, moving, or copying. The rejected tapes will show up on the Reject List report with a reject code of RESTACK. Note: The RESTACK option is not applicable to tapes stacked by versions of TapeSaver prior to 2.1.
RETAIN_FREE_VOLS	0-99	7 days	Number of days to retain a tape volume cleared of datasets before returning it to the scratch pool.
RETRY_LIMIT	0-999	25	Number of times to recover from abends before stopping execution. This parameter lets you run with recovery on and know that any recurring recovery situations will not go on forever.
RULE_CONFLICT	ABORT | CONTINUE	CONTINUE	ABORT Stop processing when conflicting rules are encountered. CONTINUE Continue processing despite conflicting rules.
SCRATCH_DELAY	0-999	0	Average mount delay (in seconds) for manual scratch tape mounts.
SCRTCH_LIMIT	0-999	20	Maximum number of scratch tapes to use in this stacking run. Scratch tapes are not used unless MAY_USE_SCRTCH_VOL is also set to YES.
SCRATCH_ONLY	YES | NO	NO	YES All output tapes will be scratch tapes. NO Non-scratch output tapes will be considered by this run.

Option	Values	Default	Description
SMS_DATA	YES | DASD|TAPE | NO	NO	Specifies whether or not to query DF/SMS for each dataset's SMS management or storage class. The option is automatically set for all jobs submitted via TapeSaver's ISPF interface – based on whether the SMSMC or SMSSC attributes are used, and if so, for which types of datasets: tape or DASD. The purpose of the option is to minimize overhead by querying DF/SMS only when necessary.
			YES Obtain the management and storage class for all tape and DASD datasets. DASD Obtain the management and storage class for DASD datasets only. TAPE Obtain the management and storage class for tape datasets only. NO Do not query DF/SMS.
STACK_LIMIT	1-32767	20	Maximum number datasets or volumes to process in the stacking or moving operation.
STACK_CYCLE_CONTROL	YES | NO	NO	Tells -TapeSaver whether or not you want to stack datasets that are defined as CA-1 cycle control datasets.
STACK_LARGE_DASD	YES | NO	NO	Tells DiskSaver whether you want to stack DASD files that are too large to fit on a single output volume. YES Select DASD datasets that are larger than a single output tape. Multi-volume tape datasets are created. NO Reject DASD datasets that are larger than a single output tape.
STACK_MULTI_FILES	YES | NO	NO	Tells TapeSaver whether or not you want to stack files which currently reside on multi-file volumes.
STACK_MULTI_VOLUME	YES | NO	NO	Tells TapeSaver whether you want to stack multi-volume datasets. YES Select multi-volume datasets for stacking. Use this option only when stacking from low capacity media to high capacity media. NO Reject datasets that occupy more than a single tape volume.
TMC_UPDATES	YES | NO	YES	YES Update the tape catalog to reflect the job that created the dataset rather than TapeSaver information. This is normal TapeSaver operations NO Do not update the tape catalog. If the option is NO, information about the job that created the dataset is lost.

Option	Values	Default	Description
UNCATS	STACK | NOSTACK	NOSTACK	STACK Stack uncataloged tape datasets. (The CATLG_UNCATS option controls whether the datasets are cataloged after stacking.) NOSTACK Do not stack uncataloged tape datasets.
UNIT_AFFINITY	YES | NO	YES	After initial dynamic allocation of a tape drive, this option indicates whether you want TapeSaver to continue using this same tape drive. Useful when you can preload auto-loader devices with the required tapes in usage order or when volumes are manually pre-staged using a pull list.
			YES TapeSaver attempts subsequent dynamic allocation requests using the specific unit obtained by the first allocation request. In some limited cases, the operating system can take control of the drive from TapeSaver. In such cases, TapeSaver recovers and retries allocation specifying a generic UNIT. NO TapeSaver performs all dynamic allocation specifying a generic UNIT.
VOLUME_FACTOR	0-99	2	Affects the size of the output volume pool.
VOLUME_FREE_SPACE	0-999	200	Minimum percentage of a tape volume that must be free for it to be considered as a candidate for stacking datasets.

Example

```
DEFAULTS FULLTAPE(750) DEFAULT_ACTION(STACK) MAY_IGNORE_VOLGRP(YES)
```

DEVICE Control Card

The DEVICE control card defines the esoteric unit names in the configuration table to the batch portion of TapeSaver.

Syntax

```
DEVICE unitname drivetype {ATL(atltype)}
```

unitname esoteric name being defined

drivetype type of tape drive associated with this unit name. The choices are:

3420	IBM 3420 tape drive (and compatibles)
3480	IBM 3480 tape drive (and compatibles) without IDRC
3480C	IBM 3480 tape drive (and compatible) with IDRC
3490	IBM 3490 tape drive (and compatible) without IDRC
3490C	IBM 3490 tape drive (and compatible) with IDRC
3490E	IBM 3490E tape drive (and compatible)
FD-3	Redwood Helical Scan drive without ICRC
FD-3C	Redwood Helical Scan drive with ICRC
MAGST	Magstar drive

ATL*(atltype)* type of ATL hardware the drive is associated with (if any). If this specification is present, it tells TapeSaver to use the ATL software interface for that vendor's host software. ATL (OTHR) tells TapeSaver to refer to the ATL hardware device addresses defined in configuration to determine whether a tape volume is inside the defined ATL. Valid choices are:

MRX	Memorex 5X00 ATL type hardware subsystem
STK	STK 4400 ATL tape hardware subsystem
OTHR	Other ATL hardware subsystem not supported directly by an ATL software interface
ANY	Any ATL hardware type

Example

```
DEVICE ATLSTK 3480 ATL(STK)
```

ENVIRON Control Card

The ENVIRON control card specifies information about your data processing environment. It provides the information needed to customize TapeSaver operation to your data center.

Syntax

```
ENVIRON TAPE_MGMT_SYSTEM(ttt) ATL_ADDRS(addr addr ... addr)
SKELETONS(skel-dsname) RELEASE(vvv) LOCAL_OUTCODES(id id ... id)
```

TAPE_MGMT_SYSTEM

Identifier (*ttt*) of the tape management system. The tape management identifier can be one of the following:

CA1
RMM
TLMS
TMS
ZARA

ATL_ADDRS list (*addr addr ... addr)* of non-STK4400 ATL or non-Memorex hardware device addresses.

SKELETONS name of the dataset (*skel-dsname*) holding TapeSaver report skeletons.

RELEASE version and release (*vvv)* of the tape management system.

CA-1 Valid versions are 4.8, 4.9, 5.0, 5.1, 5.2
CA-DYNAM/TLMS Valid version is 5.4.
DFSMSrmm Valid versions are 1.3, 1.4, and 1.5
Zara Valid versions are 1.0 and 1.1.

LOCAL_OUTCODES

list (*id id ... id)* of tape management system location codes or outcodes.

RMM_EXPIRED_CLASS

1 to 8-character default TSEXPIRE management class for stacked datasets. This class sets up a VRS rule for DFSMSrmm to expire stacked datasets.

RMM_NOTVRS_EXPIRED

Y/N to indicate if a dataset originally under VRS control should be expired, or revert to the volume expiration date if the dataset is no longer under VRS control.

Y expire dataset. The default.
N revert to the volume expiration date.

Example

```
ENVIRON TAPE_MGMT_SYSTEM(TMS) RELEASE(5)
```

GROUP Control Card

The GROUP control card tells TapeSaver that the IF statements which immediately follow the GROUP are used to define the group's selection criteria. Groups are used in a variety of ways within TapeSaver. You can define as many groups as necessary using multiple GROUP control cards.

Syntax

```
GROUP groupname {FILE | DASD | SMF | VOL} esotericname
{VOLATTR (volaname)}[COMP | NOCOMP | ASIS] [COPY]
```

groupname name of the TapeSaver group being defined

FILE, DASD, SMF, or VOL

Type of the group being defined

- FILE defines a Rule Packet used to select input tape files
- DASD defines a Rule Packet used to select DASD input files (DiskSaver)
- SMF defines a dataset rejection list for SMF data extraction
- VOL defines the selection criteria for output volumes

esotericname name of the esoteric unit defined in your data center

COMP, NOCOMP or ASIS

determines whether compression is used to select tapes.

- COMP selects only tapes with IDRC (ICRC) compression
- NOCOMP selects only tapes without IDRC (ICRC) compression
- ASIS selects tapes whether they are compressed or not. This is the default.

COPY copies the tape

VOLATTR *volaname* specifies which volume attribute will be used to restrict tape selection.

If you define more than one group and an individual tape dataset fits the definition of more than one defined group, the dataset will be assigned to the first group whose definition it fits. Therefore, you should specify the GROUP control cards with more specific selection criteria first, followed by the more general group definitions.

Example

```
GROUP ZSCRATCH VOL CTAPE
```

IF Control Card

TapeSaver uses rules to control the dataset stacking process. Rules designate which dataset(s) to stack, which dataset(s) to exclude from stacking, and considerations for stacking datasets on output tape volumes. Rules follow the general logic of an IF..THEN statement, a construct common to most computer programming languages. Rules are read sequentially from the SYSIN DD.

In most cases, the TapeSaver IF statements are created automatically by the TapeSaver ISPF interface.

Syntax

```
IF variable[(s,e)] op value THEN action [options]
```

variable	is one of the selection variables (comparison attributes)
s and *e*	are optional starting and ending column specifications for comparing a substring of the variable
op	is a comparison verb
value	is a constant value
action	is one of the stacking actions described in this chapter
options	is one or more of the TapeSaver action options

A substring of the variable's value can be compared if you use the substring specification following the variable name. The substring option must immediately follow the variable name (no intermediate blanks) and be enclosed in parentheses. You first specify the column number (starting with 1) of the start of the substring, followed by a colon and then the column number of the last column of the substring. For example:

SUBSTR Statement	Variable Value	Substring Value
CJOB(1,3)	A400J23	A40
DSN(9,14)	SYS.SMF.WEEKLY.WEEK24	WEEKLY

Only character variables are candidates for substringing and are identified in the Format column in the table that follows.

As many TapeSaver rules as necessary can be specified as input to a TapeSaver stacking analysis execution. Each rule is analyzed independently of the other rules and is applied to each dataset under analysis. Any conflicts between rules are resolved by TapeSaver using the approach documented later in this chapter.

Valid Attributes

The following table shows valid attributes for selecting datasets or tape volumes for rule packets and group definitions. The attributes can be used in any IF..THEN rule. The table contains the following columns:

- The Attribute column is the name of the TapeSaver attribute.

  Refer to " Field Names for TapeSaver Attributes" on page 56 of the *TapeSaver Installation and Configuration Guide* to associate an attribute with the catalog field name used by each of the supported tape management systems.

- The Format column indicates whether the attribute is a character format (i.e., it allows substrings), a numeric format (numbers and dates), or a coded format (i.e., it allows only the options listed).
- The Tape Management System column indicates the tape management system that has a catalog field corresponding to this attribute.
- The Description column describes the attribute.

Attribute	Format	Tape Management System	Description
ABENDFL	character	DFSMSrmm TLMS Zara	Y/N flag indicating whether the dataset was closed due to an ABEND in the creating program.
ACCT	character	DFSMSrmm CA-1 TLMS Zara	User data field (optional, maintained by user exits in tape management system).
ACSNUM	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Number of the Automated Cartridge System (ACS) in which the tape volume resides. Applicable for StorageTek automated tape libraries.
BATCHNUM	numeric	CA-1, 4.x CA-1, 5.x	Batch ID of the last job to update the TMC information for the tape volume or dataset.
BLKCNT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Number of blocks in the tape dataset.
BLKSIZE	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Block size of the dataset.
BTHDATE	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Date that the tape volume was first used, format = MM/DD/YYYY (Gregorian) or YYYY.DDD (Julian).

Attribute	Format	Tape Management System	Description
CDDN	character	DFSMSrmm CA-1, 5.x Zara TLMS 5.4	Ddname under which the dataset was created.
CHECKFL	character	Zara	Check in/out information for the tape volume.
CHECKXDT	numeric	Zara	Date the current check-in for the tape volume expires.
CJOB	character	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Name of the job that created the tape dataset. Wildcard entries are permitted.
CLNCNT	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Number of times the tape volume has been cleaned.
COUNT	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Number of times the tape volume has been opened.
CPROG	character	Zara CA-1, 5.1 and 5.2 TLMS 5.4	Name of the program that created the dataset.
CPUID	numeric	CA-1, 5.x	ID of the CPU on which the tape volume or dataset was last accessed.
CREATFL	character	Zara	Volume creator information for this tape volume.
CRLUDIFF	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Number of days between the time when a tape dataset was created and last used.
CRTDT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Date the dataset was created. Format = MM/DD/YYYY (Gregorian) or YYYY.DDD (Julian).
CTIME	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Time the tape dataset was created. Format = HH:MM:SS (hours, minutes, seconds).
CUNIT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Decimal equivalent of the unit address of the tape drive on which the tape dataset was created.

Attribute	Format	Tape Management System	Description
DATECLN	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Date the tape volume was last cleaned. Format = MM/DD/YY (Gregorian) or YY.DDD (Julian).
DEN	coded	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Tape recording density. On the Comparison Value panel, you select one of the following: DEN800 800 BPI reel DEN1600 1600 BPI reel DEN6250 6250 BPI reel DEN38K 38000 BPI 3480 cartridge DEN38KC 38000 BPI compacted 3480 cartridge DEN3M STK Redwood cartridge DEN3MC STK Redwood cartridge with compaction
			MAGST Magstar cartridge
DEST	coded	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD	Media type of the tape volume on which the dataset will be placed. (REEL, CART, or ATL). On the Comparison Value panel, you select one of the following: ATL Output goes to automated tape library. CART Output goes to 3480 cartridge. REEL Dataset is on a 9-track reel.
DSN	character	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Fully qualified name of the dataset name. Wildcards entries are permitted.
EDMFLAG	character	CA-1, 5.x	Y/N to indicate if the volume is under the control of an external data manager
EDMID	character	CA-1, 5.x	1 to 4-character identifier of the external data manager
EXPDT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Date the dataset expires. Format = MM/DD/YY (Gregorian) or YY.DDD (Julian).

Attribute	Format	Tape Management System	Description
EXPFLAG	coded	CA-1, 4.x CA-1, 5.x TLMS 5.4 Zara	Expiration date category. On the Comparison Value panel, you select from one of the following: EXP98000 Tape not under CA-1 Expiration control EXP99000 Catalog control expiration date EXP98DDD Frequency control expiration date EXP99CCC Cycle control expiration date EXP99365 Never expire expiration date EXPYYDDD Calendar expiration date
FN	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Tape dataset file sequence number.
INLEN	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Tape file length (in tenths of a percent of tape input volume).
LDATE	numeric	CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Date the tape volume or DASD dataset was last used. Format = MM/DD/YY (Gregorian) or YY.DDD (Julian).
LDDN	character	DFSMSrmm Zara	Ddname that last accessed the dataset.
LJOB	character	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Name of the last job to use the tape volume.
LOCATION	character	DFSMSrmm	Current location of the tape volume
LOUTCODE	character	Zara	Offsite location where the tape volume previously resided
LPROG	character	Zara CA-1, 5.1 and 5.2	Name of the program that last accessed the dataset.
LRECL	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Logical record length of the dataset.

Attribute	Format	Tape Management System	Description
LSMNUM	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Number of the Library Storage Module (LSM) in which the tape volume resides. Applicable for StorageTek automated tape libraries.
LSTEP	character	Zara	Job step name that last accessed the dataset.
LTIME	numeric	DFSMSrmm CA-1 5.x Zara	Time the dataset was last accessed.
LUNIT	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Decimal equivalent of the unit address of the tape drive on which the tape volume was last used.
NUMDSNB	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Number of secondary files on the tape volume. This number is one less than the number of datasets on the tape.
ORIGIN	coded	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Media type of the tape volume on which the input file resides(REEL, CART, or ATL). On the Comparison Value panel, you select one of the following: ATL Output goes to automated tape library. CART Output goes to 3480 cartridge. REEL Dataset is on a 9-track reel.
OUTCFILE	numeric	Zara	Number of the file that controlled the offsite vaulting of the tape volume.
OUTCODE	character	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Tape volume outcode.
OUTCVOL	character	Zara	Tape volume serial number of the dataset that controlled the offsite vaulting of this tape.
OUTDATE	numeric	CA-1, 4.x CA-1, 5.x TLMS 5.4	Date the tape volume was taken out of area (outcoded). Format = MM/DD/YY (Gregorian) or YY.DDD (Julian).
OUTLEN	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Length of dataset on the output tape (in tenths of a percent). If you are changing media type, this length will be different than INLEN.

Attribute	Format	Tape Management System	Description
READERR	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Number of volume read errors.
RECFM	coded	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Dataset record format. On the Comparison Value panel, you select from one of the following: RECFMF Fixed record format (RECFM=F) RECFMFB Fixed block record format (RECFM=FB) RECFMV Variable record format (RECFM=V) RECFMVB Variable block record format (RECFM=VB) RECFMU Undefined record format (RECFM=U) RECFMFBA Fixed block record format with ANSII carriage control (RECFM = FBA) RECFMFBM Fixed block record format with machine carriage control (RECFM = FBM) RECFMVBA Variable block record format with ANSII carriage control (RECFM = VBA) RECFMVBM Variable block record format with machine carriage control (RECFM = VBM) RECFMVBS Variable block spanned record format (RECFM = VBS
REM	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x TLMS 5.4 Zara	Number of datasets on a tape.
RMMDESC	character	DFSMSrmm	RMM Volume user description
RMMLRDTE	numeric	DFSMSrmm	Date the dataset was last read
RMMLWDTE	numeric	DFSMSrmm	Date the dataset was last written
RMMOWNER	character	DFSMSrmm	Owner ID of the volume or dataset
RMMSYSID	character	DFSMSrmm	Creating system ID
ROBID	character	CA-1, 5.1 and 5.2	The user-defined tape robotic device ID.
ROBTY	character	CA-1, 5.1 and 5.2	The user-defined tape robotic device type.
ROBID	character	CA-1, 5.1 and 5.2	The user-defined tape robotic device ID.
ROBTY	character	CA-1, 5.1 and 5.2	The user-defined tape robotic device type.

Attribute	Format	Tape Management System	Description
SINCECRT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Number of days since the dataset was created.
SINCEUSD	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4 DASD	Number of days since the dataset was last used.
SLOT	numeric	CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Slot number of the tape volume.
SMSMC	character	DFSMSrmm CA-1, 5.x Zara DASD TLMS 5.4	The SMS management class of the dataset.
SMSSC	character	DFSMSrmm CA-1, 5.x Zara DASD TLMS 5.4	The SMS storage class of the dataset.
STPNAME	character	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Job step name which created the tape dataset.
TRTCH	coded	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara TLMS 5.4	Tape recording technique. On the Comparison Value panel, you select one of the following: TRT9TRK 9-track reel TRT18TRK 18-track 3480 cartridge TRT36TRK 36-track 3490-E cartridge TRTHELIX Helical scan cartridges MAGST Magstar cartridges
USECLN	numeric	CA-1, 4.x CA-1, 5.x Zara	Tape volume's use count at the time it was last cleaned.

Attribute	Format	Tape Management System	Description
VCNT	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x TLMS 5.4 Zara	Number of tape volumes that a Multi-volume dataset occupies.
VENDOR	character	CA-1 5.x, TLMS 5.4	User-defined vendor code for the tape volume. In CA-1 version 5.x, this field has several names: Volume Record Field: T5VENDOR GRW Field Name: VENDOR CA-EARL Field Name: VENDOR
			In CA-DYNAM/TLMS 5.4 this field has several names:
			Base Record Field: xxVENDER *where* xx represents a user-defined prefix, supplied when assembling the TLMS macro CA-EARL Field Name: VENDOR
VOLSEQ	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Volume sequence number.
VOLSER	character	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara DASD TLMS 5.4	Tape or DASD volume serial number.
VRSFLAG	character	DFSMSrmm	Y VRS controlled volume N Non-VRS controlled volume
VRSMGMT	character	DFSMSrmm	VRS management value
VRSNAME	character	DFSMSrmm	Matching vital record name

Attribute	Format	Tape Management System	Description
VRSTYPE	character	DFSMSrmm	Vital Record Type. Possible values are: VRSNONE No matching VRS type VRSDSNAM Dataset retained by a DSNAME VRS specification VRSSMSMC Dataset retained by a VRS specification matching its SMS management class VRSVRSMV Dataset retained by a VRS specification that matches its VRS management value VRSDSNMV Dataset retained by a DSNAME VRS specification and a management value that has been defined with a VRS WHILECATALOG statement
WRITERR	numeric	DFSMSrmm CA-1, 4.x CA-1, 5.x Zara	Number of write errors for this volume.
ZEXPCNT	numeric	DFSMSrmm Zara	Number of copies (cycle control) or days since the dataset was last accessed.
ZEXPFLG	numeric	Zara	Expiration date indicator.
ZOUTDATE	numeric	Zara	Date that the tape volume was moved offsite (vaulted).
ZSTAKFL	numeric	Zara	A flag field used by TapeSaver to indicate that it stacked/moved/copied the dataset.

Comparison Operators

TapeSaver rules compare a variable to a constant value and then specify the action to take when the comparison is true. Standard programming comparison operators are shown below:

Operator	Description
=	Equal to
>	Greater than
<	Less Than
¬=	Not equal to
<=	Less than or equal to
>=	Greater than or equal to

Action Verbs

The third component of a TapeSaver rule is the action taken when the comparison of a variable to a constant value is true. The four actions that can be taken are are shown in the following table.

Action Verb	Description
ACCEPT	Accept (continue working with) any datasets or tape volumes which match the IF statement comparison. This is synonymous with STACK, generally used for specifying output volumes (group definitions).
REJECT	Reject (remove from further consideration) any datasets or tape volumes which match the IF statement comparison. This is synonymous with NOSTACK, generally used for specifying output volumes (group definitions).
STACK	Stack the datasets which match the associated comparison. This is synonymous with ACCEPT, generally used for specifying input datasets (rule packets).
NOSTACK	Do not stack the datasets which match the associated comparison. Synonymous with REJECT, generally used for specifying input datasets (rule packets).

Options

TapeSaver allows you to exert additional control over the dataset stacking process. With these options, you can specify the following:

- stack like datasets together on a tape
- force a dataset to be the last dataset on a tape
- prohibit two datasets from being stacked on the same tape,
- force datasets to be stacked to a specific physical or logical location (e.g. an automated tape library, or a group of tapes going offsite for microfiche, archival or some other purpose)
- specify the retention period of DASD datasets stacked to tape
- determine if DASD datasets are to be cataloged.

The options are shown below:

Option	Description
IN *locname*	Stack the dataset in a logical/physical location named*locname*. You must have defined this location (via the LOCATION control card) prior to using this option.
LAST	Force this dataset to be the last dataset on a tape reel or cartridge.
NCAT	This option indicates that datasets selected by this rule should not be catalogued when stacked on tape - even if they were catalogued on input.
OVER	This option indicates you want to override the expiration date the dataset has on DASD. The option is only available if you are using DiskSaver.
RETA(*period*)	The following retention periods are valid. RETA(nnnn) = Specifies the retention period in days. The expiration date of the dataset will be set to the current date plus nnnn days when it is stacked on tape. RETA(LDATE/ddd) = Specifies the expiration date based on the LDATE. If the dataset is not accessed in this number of days in ddd, the dataset expires. RETA(PERM) = Specifies a permanent expiration date. RETA(CYCLE/ccc) = Specifies the expiration date based on cycle control. The number in *ccc* indicates how many cycles you want to keep. The dataset expires at ccc+1. RETA(CATLG) = Specifies the dataset is retained as long as it is cataloged.
USE *utilityname*	Allows you to use a copy utility other than TapeSave'rs to copy data to a new location. TapeSaver always copies the output to a scratch volume when an external copy utility has been specified. • GENR Use the IEBGENER program as the copy utility. • DSS Use the DF/DSS program ADRDSSU as the copy utility. To use this option, selected datasets must be created by the DF/DSS dump operation and TapeSaver requires APF authorization. Also, the ADRDSSU library must be added to either the STEPLIB or LINKLIST. Refer to"Step 4: Review Dataset Security Requirements" on page 13 of the *TapeSaver Installation and Configuration Guide*. • FDR Use the FDR application as the copy utility. To use this option, TapeSaver requires APF authorization and the FDRTCOPY library must be added to either the STEPLIB or LINKLIST. Refer to"Step 4: Review Dataset Security Requirements" on page 13 of the *TapeSaver Installation and Configuration Guide*. Notes: • By default, the Master file excludes FDR datasets from any TapeSaver processing. You must remove FDR entries from the Master file before attempting to use the FDR external copy utility. Refer to" Editing an Existing Rule Packet" on page 48 of the T*apeSaver User Guide*. • TapeSaver always uses the external FDR copy utility if all of the following conditions are met: • The tape dataset name begins with FDR. • The dataset block size is 32760 (BLKSIZE=32760). • The dataset record format is undefined (RECFM=U). • No external copy utility has been specified. If you select an external copy utility, TapeSaver cannot control the allocation of output tapes. If not specified, TapeSaver uses its internal utility to copy the data.

WITH *groupname*	Stack this dataset in the group named *groupname*. Groups are defined with the GROUP control card.

Examples

```
IF DSN = 'PAYROLL**' THEN STACK
```

Stack all datasets whose dataset name begins with PAYROLL

```
IF DSN = 'PAYROLL.YREND**' THEN NOSTACK
```

Do not stack any datasets whose dataset name begins with PAYROLL.YREND

```
IF LJOB(6,6) = 'T' THEN NOSTACK
```

Do not stack datasets from tape volumes which were last accessed by a job where the sixth character of the job name is a T (i.e. test jobs).

```
IF CJOB = 'A210**' THEN STACK IN MFGTAPE
```

Stack all datasets created by jobs whose name starts with A210 in the physical location MFGTAPE. The MFGTAPE location is an TapeSaver location; a tape drive defined to TapeSaver as being at this location name. See the ENVIRON control card documentation earlier in this chapter for more information.

```
IF CJOB = 'MFG**' THEN STACK IN MFGTAPE OVER RETA(365)
```

Stack all datasets created by jobs whose name starts with MFG in the physical location MFGTAPE. Override the dataset's expiration date and use a retention period of 365 days for the output file. Use the LOCATION control card to define TapeSaver locations.

```
IF CJOB = 'MFG**' THEN STACK IN MFGTAPE
```

Stack all datasets created by jobs whose name starts with MFG in the physical location MFGTAPE. Use the LOCATION control card to define TapeSaver locations.

```
IF CJOB = 'FICH**' THEN STACK WITH FICHE
```

Stack all datasets created by jobs whose name starts with FICH in the logical group FICHE. Use the GROUP control card to define TapeSaver groups.

```
IF DSN = 'PAYROLL.YREND**' THEN STACK WITH PAYROLL OVER NCAT
```

Stack all DASD Payroll Year End datasets with other Payroll datasets on tape. Override the expiration date the dataset has on DASD. Do not catalog the datasets on tape.

LOCATION Control Card

The LOCATION control card defines physical locations (e.g. automated tape library unit, offsite tape drive). The control card consists of a location name, device type, and a list of hardware device addresses that make up the location. Locations must be defined before they can be used in an TapeSaver rule.

Syntax

LOCATION *locname* [CART | REEL | ATL]*addr ... addr*

locname is name of the location being defined. Location names can be up to eight characters in length and can contain any printable character.

CART, REEL or ATL

defines the type of tape drive to use. This identifies the unit name to use when allocating a drive.

addr...addr is one or more tape drive hardware addresses. Location addresses must be 3 hexadecimal digits. The first address specified is the address that TapeSaver uses for allocating a drive at the specified location.

Example

```
LOCATION MFG4400 ATL B04
```

PACKET Control Card

The PACKET control card is used to assign a recognizable name and description to the analysis you are creating.

Syntax

```
PACKET packetname 'description'
```

packetname is an 8-character name you supply for this stacking analysis run.

description is a 50-character description, enclosed in quotation marks.

Example

```
PACKET SCRCHRUN 'ANALYSIS OF ZSCRATCH RUN DEFINITION'
```

PATCH Control Card

The PATCH control card is used to apply a temporary program fix. UNICOM Systems Customer Service typically distributes these fixes by phone, fax, or e-mail. You apply the fix to the TapeSaver Patch Card screen as described in" Specifying a Patch Table" on page 47 of the *TapeSaver Installation and Configuration Guide*. When a run is executed, TapeSaver generates the PATCH control card.

A patch results in a temporary change to the TapeSaver program while it is running in virtual memory. No change is made to the TapeSaver program stored on disk. A patch alters a specific program module (CSECT) at a particular location (offset) within that module. The patch compares the current contents in that location to the OLD keyword value. If it matches, it replaces the OLD keyword value with the NEW keyword value.

Syntax

```
PATCH csectname+offset OLD(current) NEW(new)
```

csectname	is the name of the CSECT to be modified.
offset	identifies the location within the module to be modified. It must be a 4-digit hexadecimal value.
current	is the value currently at that location. It must be a 8-digit hexadecimal value.
new	is the value to put in place of the *current* value. It must be a 8-digit hexadecimal value.

Example

```
PATCH TSMAIN+012E OLD(47F0C000) NEW(47F0C004)
```

RENAME Control Card

The RENAME control card changes the high-level index (first node) of a dataset name when it is stacked, moved or copied.

Syntax

```
RENAME fromindex toindex
```

fromindex is the high-level index of the dataset that you want to rename

toindex is the new high-level index that you want the dataset name to have. The high-level index is limited to eight characters on the panel - don't type the '.' separator. However, on the control card itself, you can use sixteen characters - "xxxxxxxx.xxxxxxxx'.You must follow valid MVS dataset naming conventions (first character alphabetic or national, other characters alphanumeric or national).

You can specify as many RENAME cards as necessary to implement the desired renaming. If a dataset is flagged for renaming during the forecast process, the Forecast Report shows the dataset's new high-level index.

Notes:

- If you plan to use the RENAME control card, you need to ensure that an alias is defined for each new high-level index you plan to use.
- If you plan to rename generation data group (GDG) datasets, you need to ensure that a GDG base is defined for each new dataset name before you stack or volume move or TapeSaver's attempt to catalog the output dataset(s) will fail.

REPORTS Control Card

The REPORTS control card indicates which reports, if any, you want TapeSaver to produce during its execution. It always creates the Execution Summary to let you know what happened during execution. You can select several additional reports. The format and content of the various TapeSaver reports are documented in the *TapeSaver Reports Manual*..

Syntax

```
REPORTS keyword[keyword keyword ...]
```

keyword is one of the report selection keywords shown in the table below. You can specify any number of reports using the report name keywords shown in the following table.

Report Keyword	Description	Ordered By
CANDIDAT	Candidate Report	volser (ascending)
CONFLIST	Conflict List Report	Dataset Name (ascending)
COPY	Volume Copy Report	volser (ascending)
CYCLEXCP	Cycle Control Exception Report	Dataset Name (reverse chronological order)
CYCLSTAT	Cycle Status Report	Dataset Name (reverse chronological order)
EXCLUDE	Excluded Datasets Report	Dataset Name (ascending)
FORECAST	Forecast	volser (ascending)
LIST	Master File List Report	volser (ascending)
PULLORDR	Tape Pull List (Usage Order)	volser needed
PULLVOL	Tape Pull List (Volser Order)	volser (ascending)
STACK	Activity Report	volser (ascending)
TMCLIST	Catalog List	volser (ascending)
UNEXPIRE	Unexpire Report	volser (ascending)

Each report is written to the ddname that is the same as the report keyword (for example, FORECAST report is written to the FORECAST DD).

RUNTYPE Control Card

The RUNTYPE control card specifies the operations performed by TapeSaver during execution.

Syntax

```
RUNTYPE option [option option ...]
```

option is one of the option selection keywords shown in the table below. You can specify more than one RUNTYPE option, if desired, but you must specify at least one. The RUNTYPE options are shown below:

Option	Description
FORECAST	Analyze stacking and volume moving opportunities using the rules supplied with this execution and produce a Forecast report. TapeSaver also creates a master file for this run which contains processing instructions in case you submit another TapeSaver job later with the STACK option. This parameter is equivalent to the analysis phase of interactive execution. If you specify STACK on the same control card, execution continues without interruption. If you do not specify STACK, execution is interrupted.
REPORT	Generate one or more reports. Use the REPORTS control card to specify which reports you want to produce.
STACK	Run the implementation phase of execution as specified either in the control card rules or in a previously created master file.
CONFLICT	Process the SMF data allocated to the TSSMF DD, perform conflict analysis and replace (or create) a Conflicts File.
COPY	Copy all volumes marked for COPY by their group card.
CYCLPLAN	TapeSaver analyzes cycle control datasets in the TMC to see which datasets are *eligible* for expiring.
CYCLEXPR	TapeSaver implements the plan that was created by CYCLPLAN. The files are expired.
UNEXPIRE	Implements Scratch Protection to prevent premature expiration of secondary files on multi-file tape volumes.

Examples

The following control card specifies interrupted execution with reports generated as specified on the REPORTS control card.

```
RUNTYPE FORECAST REPORT
REPORTS REJECT FORECAST PULLORDR PULLVOL
```

The following control card could be used to resume execution after review of the reports produced by the preceding example with reports generated as specified on the REPORTS control card.

```
RUNTYPE REPORT STACK
REPORTS ACTIVITY STACK
```

The following control card specifies both analysis and implementation (uninterrupted) execution with reports generated as specified on the REPORTS control card.

```
RUNTYPE FORECAST REPORT STACK
REPORTS REJECT ACTIVITY STACK
```

VOLUMES Control Card

The VOLUMES control card is used for DiskSaver rule packets. It defines the pool of DASD volumes that TapeSaver will scan to find stacking candidates.

This control card allows wildcards to specify patterns. Refer to the description of wildcards in Chapter 3.

Syntax

```
VOLUMES volser-list
```

volser-list is a list (separated by blanks) of the DASD volumes to be scanned for stacking candidates.

Example

The following control card indicates all TSO volumes and all production volumes will be scanned.

```
VOLUMES TSO* PROD*
```

VOLATTR Control Card

The VOLATTR control card specifies the characteristics of tape such as density, length, and recording technique that are not provided by your tape management system. A common set of attributes can be defined for tape volumes using either or both of the following criteria:

- All volumes within a range of tape volumes using the FROM VOLSER and TO VOLSER of the VOLATTR control card.
- All volumes whose VOLATTR VENDOR field matches the VENDOR field as defined in the site's tape management system.

You can define as many groups as necessary using multiple VOLATTR control cards.

Syntax

```
VOLATTR vaname RANGE(from-volser:to-volser)VENDOR(vendor-pattern)
        LEN(length) DEN(density) TRTCH(trtch-value)
```

vaname is a unique name for the volume attribute definition

from-volser is the starting volser in a range of volsers that have common attributes

to-volser is the ending volser in a range of volsers that have common attributes

vendor-pattern is a value or substring matched against the VENDOR field in the site's tape management system.

length is the length of the tape media for use by TapeSaver when estimating volume capacity.

density is the recording density for use by TapeSaver when estimating volume capacity. Valid values are:

800	800 BPI tape reel
1600	1600 BPI tape reel
6250	6250 BPI tape reel
38K	38000 BPI cartridge (includes 3480/3490/3490E)
38KC	38000 BPI cartridge with IDRC (includes 3480/3490/3490E)
3M	STK Redwood cartridge
3MC	STK Redwood cartridge with IDRC
MAGST	Magstar 3590 cartridge with compaction
VIRT	Virtual Volume without compaction
VIRTC	Virtual Volume with compaction

trtch-value is the recording technique for use by TapeSaver when estimating volume capacity. Valid values are:

9TRK	9 track reels
18TRK	18 track cartridges (includes 3480/3490)
36TRK	36 track cartridges (includes 3490E)
HELIX	Helical scan cartridges (includes STK Redwood)
MAGST	Magstar 3590 cartridge with compaction
VIRT	Virtual Volume without compaction
VIRTC	Virtual Volume with compaction

Example

The following control card defines STK Redwood 10 gigabyte tape volumes with volume serial numbers from 200000 to 250000.

```
VOLATTR REDWOOD RANGE(200000:250000) VENDOR(STK10)
       LEN(298) DEN(DEN3M) TRTCH(TRTHELIX)
```

VOLRANGE Control Card

The VOLRANGE control card is used to restrict analysis to one or more volser ranges of the tape catalog. You can specify as many VOLRANGE control cards as necessary.

Syntax

```
VOLRANGE start-volser:to-volser
```

start-volser	is the starting volume serial number of the volser range to be analyzed
to-volser	is the ending serial number of the volser range to be analyzed

Example

The following control card restricts the analysis to volsers 100000 to 200000.

```
VOLRANGE 100000:200000
```

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