



AT&T

AT&T UNIX™ PC

Tape Backup

UNIX™ Supplement



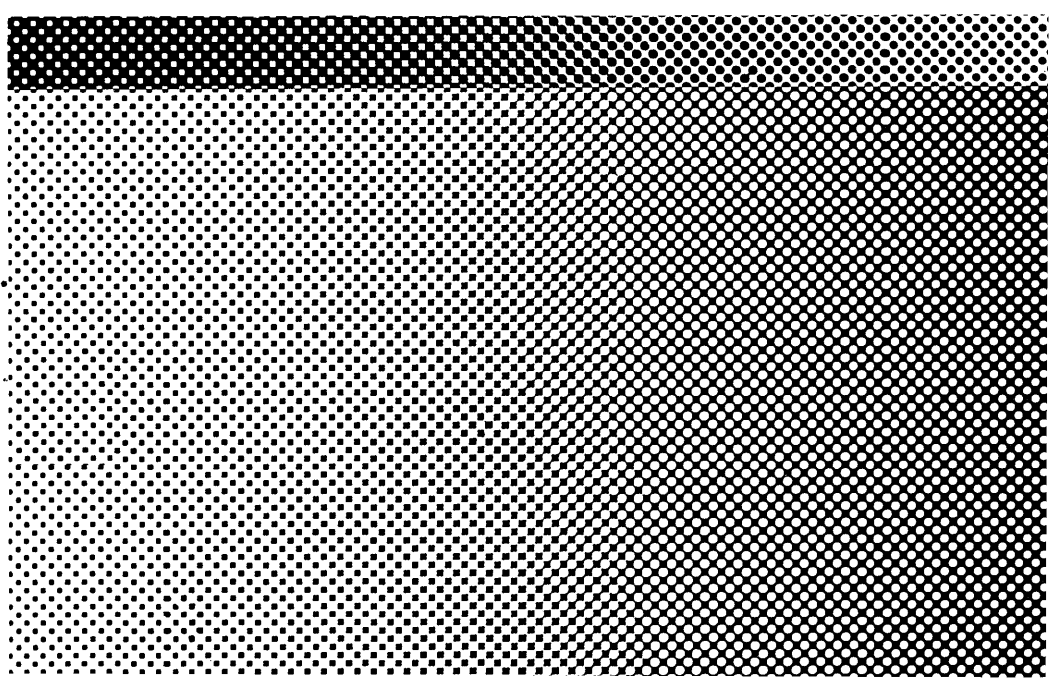
AT&T

999-300-2151S

AT&T UNIX™ PC

Tape Backup

UNIX™ Supplement



**©1985 AT&T
All Rights Reserved
Printed in USA**

NOTICE

The information in this document is subject to change without notice.
AT&T assumes no responsibility for any errors that may appear in
this document.

L-243630-108

TAPE BACKUP MANUAL PAGES

November 20, 1985

These manual pages cover the commands and utility programs provided as part of the Tape Backup software. You can add these pages to your *AT&T UNIX PC UNIX System V User's Manual*, or if you do not have this document, keep them with your *Tape Backup User's Guide*.

TABLE OF CONTENTS

1. Commands and Application Programs

dbuf	double buffered I/O to floppy tape
execstrip	strip quotes in shell variables from parameter lines
tapecpio	copy file archives to and from tape
tdsplss	retrieve tape backup set information and display in a menu
tgetftype	determine file type of a path name in a backup set
tgetname	read, write tape volume table of contents
tgetoffsets	get offsets to and sizes of tape backup sets
tgetovwrit	determine overwrite and type for a tape backup operation
tmakelmenu	create menu of files for tape backup or restore
tmakesslist	generate, print file list for tape backup

PERMUTED INDEX

tapecpio: copy file	archives to and from tape.	tapecpio(1)
overwrite and type for a tape	backup operation. /determine	tgetovwrit(1)
/create menu of files for tape	backup or restore.	tmakelmenu(1)
TdspLSSs: retrieve tape	backup set information and/	tdsplss(1)
file type of a path name in a	backup set. /determine	tgetftype(1)
offsets to and sizes of tape	backup sets. TgetOffsets: get	tgetoffsets(1)
print file list for tape	backup. /TprintSS: generate,	tmakesslist(1)
dbuf: double	buffered I/O to floppy tape.	dbuf(1)
write tape volume table of	contents. Tgetname: read,	tgetname(1)
tape. tapecpio:	copy file archives to and from	tapecpio(1)
backup or/ TmakeLmenu:	create menu of files for tape	tmakelmenu(1)
floppy tape.	dbuf: double buffered I/O to	dbuf(1)
TgetFtype:	determine file type of a path	tgetftype(1)
name in a backup/ Tgetovwrit:	determine overwrite and type	tgetovwrit(1)
for a tape backup/ Tgetovwrit:	display in a menu. /tape	tdsplss(1)
backup set information and	tape. dbuf: double buffered I/O to floppy	dbuf(1)
tape. dbuf:	execStrip: strip quotes in	execstrip(1)
shell variables from/	file archives to and from	tapecpio(1)
tape. tapecpio: copy	file list for tape backup.	tmakesslist(1)
/TprintSS: generate, print	file type of a path name in a	tgetftype(1)
backup/ TgetFtype: determine	files for tape backup or/	tmakelmenu(1)
TmakeLmenu: create menu of	floppy tape.	dbuf(1)
dbuf: double buffered I/O to	from parameter lines. /strip	execstrip(1)
quotes in shell variables	from tape. tapecpio:	tapecpio(1)
copy file archives to and	generate, print file list for	tmakesslist(1)
tape/ TmakessList, TprintSS:	get offsets to and sizes of	tgetoffsets(1)
tape backup/ TgetOffsets:	I/O to floppy tape.	dbuf(1)
dbuf: double buffered	lines. /strip quotes in	execstrip(1)
shell variables from parameter	list for tape backup.	tmakesslist(1)
/TprintSS: generate, print file	menu of files for tape backup	tmakelmenu(1)
or/ TmakeLmenu: create	menu. /tape backup set	tdsplss(1)
information and display in a	offsets to and sizes of tape	tgetoffsets(1)
backup sets. TgetOffsets: get	operation. /overwrite	tgetovwrit(1)
and type for a tape backup	overwrite and type for a tape	tgetovwrit(1)
backup/ Tgetovwrit: determine	parameter lines. /strip	execstrip(1)
quotes in shell variables from	path name in a backup set.	tgetftype(1)
/determine file type of a	print file list for tape	tmakesslist(1)
backup. /TprintSS: generate,	quotes in shell variables from	execstrip(1)
parameter/ execStrip: strip	read, write tape volume table	tgetname(1)
of contents. Tgetname:	restore. /create menu	tmakelmenu(1)
of files for tape backup or	retrieve tape backup set	tdsplss(1)
information and/ TdspLSSs:	sets. /get offsets	tgetoffsets(1)
to and sizes of tape backup	shell variables from parameter/	execstrip(1)
execStrip: strip quotes in	sizes of tape backup sets.	tgetoffsets(1)
/get offsets to and	strip quotes in shell	execstrip(1)
variables from/ execStrip:	table of contents. Tgetname:	tgetname(1)
read, write tape volume	tape backup operation.	tgetovwrit(1)
/overwrite and type for a	tape backup or restore.	tmakelmenu(1)
/create menu of files for	tape backup set information	tdsplss(1)
and/ TdspLSSs: retrieve	tape backup sets.	tgetoffsets(1)
/get offsets to and sizes of	generate, print file list for	tmakesslist(1)
double buffered I/O to floppy	tape. dbuf:	dbuf(1)
copy file archives to and from	tape. tapecpio:	tapecpio(1)
Tgetname: read, write	tape volume table of contents. . . .	tgetname(1)
to and from tape.	tapecpio: copy file archives	tapecpio(1)
set information and display/	TdspLSSs: retrieve tape backup	tdsplss(1)
of a path name in a backup/	TgetFtype: determine file type	tgetftype(1)
volume table of contents.	Tgetname: read, write tape	tgetname(1)

Permuted Index

and sizes of tape backup/	TgetOffsets: get offsets to	tgetoffsets(1)
overwrite and type for a tape/	Tgetovwrit: determine	tgetovwrit(1)
files for tape backup or/	TmakeLmenu: create menu of	tmakelmenu(1)
generate, print file list for/	TmakessList, TprintSS:	tmakesslist(1)
list for tape/ TmakessList,	TprintSS: generate, print file	tmakesslist(1)
/determine overwrite and	type for a tape backup/	tgetovwrit(1)
TgetFtype: determine file	type of a path name in a/	tgetftype(1)
lines. /strip quotes in shell	variables from parameter	execstrip(1)
Tgetname: read, write tape	volume table of contents.	tgetname(1)
contents. Tgetname: read,	write tape volume table of	tgetname(1)

NAME

`dbuf` – double buffered I/O to floppy tape

SYNOPSIS

`dbuf -o [TbufsizeOffset] > device`

`dbuf -i [TbufsizeOffsetSnumblocks] device`

DESCRIPTION

The `dbuf` program provides double buffered input/output with the floppy tape to improve operating efficiency. While one buffer is being filled, the other is being processed. `Dbuf` is normally used in conjunction with `tapecpio(1)`.

The parameter `bufsize` is the size in kilobytes (1KB = 1024B) to use for the double buffering. The `offset` parameter is the number of the first block to begin the data transfer. `Numblocks` is the number of blocks to be read from the device. The parameter `device` should be `/dev/rft3`.

The `dbuf` program can be called with the `-i` option to read from the floppy tape, or the `-o` option to write to the tape. The following options can be specified:

- i** Read input from the floppy tape and send it to the standard output. The output is usually piped into a program such as `tapecpio(1)`.
- o** Read input from the standard input and write output to the standard output. The input is usually piped to `dbuf` from another program, such as `tapecpio(1)`, and the output should be redirected to the device `/dev/rft3`.
- O** Set the logical file position of where the transfer is to begin. The **O** is followed by the `offset` in blocks. For example,

```
tapecpio -oc | dbuf -oO128 > /dev/rft3
```

will begin the output at block number 128 on the floppy tape.

- T** Provide a specific buffer size for the `tapecpio` operation. The size of the buffer, in kilobytes, follows the **T**. For example,

```
dbuf -iT124 /dev/rft3 | tapecpio -ict
```

will use two 124KB buffers while it reads the data from the tape and pipes it to `tapecpio`.

- S** Specify the number of blocks to read from the tape. This option is used only with the `-i` option and provides a means by which to prevent `dbuf` from reading more data than is requested for the read operation. The number of blocks to read follows the **S**. For example,

```
dbuf -iS242 /dev/rft3 | tapecpio -icd
```

will read 242 blocks from the floppy tape and then stop. The data is piped to `tapecpio` using double buffering.

SEE ALSO
tapecpio (1).

NAME

execStrip – strip quotes in shell variables from parameter lines

SYNOPSIS

execStrip commandlist

DESCRIPTION

This program circumvents the shell's failure to strip quotes from a parameter line when they are contained in a shell variable. *Execstrip* strips the first and last characters off each parameter in the *commandlist* when the first character is a quote. If the first character of a parameter is not a quote, then the parameter is left intact. After stripping, all of the parameters are shifted back one position in the list, then the first parameter in the list is *execed* using the call

```
execvp (argv[0], argv)
```

EXAMPLES

The following input to execStrip:

```
execStrip tapecpio -ic"B" "file/*" file 'pat*' < $DEVICE
```

becomes the following command:

```
tapecpio -ic"B" file/* file pat* < $DEVICE
```

SEE ALSO

sh(1).

NAME

`tapecpio` – copy file archives to and from tape

SYNOPSIS

```
tapecpio -o [ TsizeOffset ] < filelist > device
tapecpio -i [ xRTsizeOffset ] [ filename ... ] < device
```

DESCRIPTION

The program *tapecpio* is an extension of the UNIX *cpio*(1) utility to handle the specific requirements of the Tape Backup subsystem.

In the above synopsis, *device* is usually `/dev/rft3`, if the floppy tape drive is to be used. *Filelist* is a file containing the list of files to be backed up, and the *filenames* are the individual path names (regular expressions permitted) to be restored.

Tapecpio can be called with any of the regular *cpio*(1) options, described in detail under *cpio*(1). In addition the following options are available:

- x** Halt the *tapecpio* operation as soon as the first *filename* in the pattern list is restored (otherwise the entire *cpio* set is read). This option is used only with the `-i` option.
- R** Allow files and directories with absolute path names to be redirected on input to the current working directory (see *pwd*(1)) by removing the leading `/` from the path name. This option is used only with the `-i` option.
- O** Set the logical file position of where the transfer is to begin. The **O** is followed by an *offset* in blocks. For example,

```
tapecpio -ocO128 > /dev/rft3
```

will begin the output at block number 128.

- T** Provides a specific buffer size for the *cpio* operation. The size of the buffer, in kilobytes (1KB = 1024B), follows the **T**. For example,

```
tapecpio -ictT124 < /dev/rft3
```

will use a 124KB buffer while it reads the filenames from the *cpio* set.

SEE ALSO

cpio(1), *pwd*(1), *cpio*(4).

NAME

TdspISSs - retrieve tape backup set information and display in a menu

SYNOPSIS

TdspISSs

DESCRIPTION

This program reads the current backup set information from the file */tmp/tape.vtoc* and displays each backup set record on the screen in a menu. The file */tmp/tape.vtoc* must be created using a *Tgetname -v* command before calling *TdspISSs*.

After the user selects the backup set(s) to show or restore, the offset of each selected backup set is written to the file */tmp/ss.osets*. The command *TgetOffsets* can then be used to read the offsets from this file.

If the user presses the EXIT or CANCL key, *TdspISSs* exits with error code 1.

FILES

/tmp/tape.vtoc
/tmp/ss.osets

SEE ALSO

Tgetname(1), *TgetOffsets(1)*.

NAME

TgetFtype – determine file type of a path name in a backup set

SYNOPSIS

TgetFtype filename

DESCRIPTION

This program reads a list of backup set files from the standard input. The list must be in **ss.filelist** format (see *TmakesList(1)*). The *filename* is checked against the backup set list to determine its file type. If it is not found, error code 2 is returned. Otherwise, a pattern is printed on the standard output which will allow the file and all subfiles to be restored by *cpio(1)*:

"NAME"	if a regular expression
"NAME/*" NAME"	if a directory
"NAME"	otherwise

To use this program, the output should be redirected to a shell variable and passed on to *cpio*:

```
FTYPE=`TgetFtype main.c`  
cpio -ic $FTYPE < /dev/rft3
```

FILES

ss.filelist

SEE ALSO

cpio(1), *TmakesList(1)*.

NAME

Tgetname - read, write tape volume table of contents

SYNOPSIS

```
Tgetname [ -v | -r | -b | -t | +l | -l | -3 ]  
Tgetname -w backuptype tpname buname bucmf offset  
nblocks nfiles
```

DESCRIPTION

This program provides a means of accessing the volume table of contents (VTOC) and the backup set block on the floppy tape. The program provides three groups of functions: input, output and locking.

For input, *Tgetname* prints the name of the current tape and the offset to the next free block. If the offset printed is -1, then the tape is assumed to be full. The input options are:

- v Read the VTOC, backup set block, and cpio set block from tape, and write them to disk in the file */tmp/tape.vtoc*.
- r Read the VTOC and backup set blocks from the file created by the -v option, and return the offset to the next free space.
- b This option performs the work of the -v and -r options in addition to checking for overwrite protection. For example, *Tgetname -b* might print **'MyTape' '1048'** indicating that **MyTape** is the name of the floppy tape, **1048** is the first free block number, and the tape is *not* write protected.
- t Wait for up to 3 minutes for the tape to retension. Display a message while tape is retensioning. Exit after open.

For output, *Tgetname* reads and updates the file created by the -v option, adding the appropriate backup set information to the file. The output options are:

- 3 Overwrite all valid data in the backup set block with a "bogus" block. This is used to create a tape in 3B2 format (not in "UNIX PC" format).
- w Use the parameters provided to create a backup set entry. This option is used to create a tape in UNIX PC format. The parameters are:

backuptype Must be one of the following backup types:

- Complete Backup
- Partial Backup
- Backup User
- Backup Folders
- Backup Files
- Backup by Names
- Backup Broken
- BAD BACKUP

“Backup Broken” indicates that the backup set continues onto the next tape; “BAD BACKUP” is used to delete an entry, and all that may follow it, from the backup set block.

<i>tpname</i>	The new name for the tape.
<i>buname</i>	The name given to this backup set.
<i>bucmnt</i>	The comment for the backup set, which must be less than 24 characters.
<i>offset</i>	The offset in blocks to the first block of the backup set.
<i>nblocks</i>	The size in blocks of the backup set. This number should be the same as that returned by <i>cpio(1)</i> , or -1 to indicate end of data.
<i>nfiles</i>	The number of files in the backup set.

The locking functions lock the floppy tape drive (permanently) and unlock it afterwards. The options are:

- +l Lock the tape drive.
- l Unlock the tape drive.

FILES

/tmp/tape.vtoc

SEE ALSO

tapecpio(1), Tgetovwrit(1).

NAME

TgetOffsets - get offsets to and sizes of tape backup sets

SYNOPSIS

TgetOffsets [**-o** | **-s**]

DESCRIPTION

This program reads the file **/tmp/ss.osets**, created by *TdspISSs*(1), to determine the sizes and offsets to the backup sets on the current tape and writes this information to the standard output.

Each offset is followed by the size of the backup set in the file **/tmp/ss.osets** using the following format:

OFFSET:SIZE

The offsets are printed enclosed in single quotes. Following the output, a pair of single quotes is printed. This is done to allow detection of empty lists.

TgetOffsets is called with one of the following two options:

-o Print the offset to each backup set in quotes, as follows:

'OFFSET1' 'OFFSET2' ''

-s Print the offset to, and the size of, each backup set, as follows:

'OFFSET1' 'SIZE1' 'OFFSET2' 'SIZE2' ''

FILES

/tmp/ss.osets

SEE ALSO

TdspISSs (1).

NAME

Tgetovwrit - determine overwrite and type for a tape backup operation

SYNOPSIS

Tgetovwrit [**-b** | **-f**]

DESCRIPTION

This program determines whether the current tape will be overwritten for the given operation. It also determines the type of backup performed by looking for the file name **ss.filelist** at the start of the backup set. If this file is found, the backup type is "UNIX PC". Otherwise, the type is "3B2".

Before *Tgetovwrit -b* can be used, a *Tgetname -v* or *-b* command must be used to read the volume table of contents block from the tape to the file **/tmp/tape.vtoc** (see *Tgetname(1)*).

Tgetovwrit is called with the one of the following options:

- b** This option reads the first block of the *cpio* set to look for the *cpio* magic header to determine if the tape will be overwritten. If the header is found, then the **ss.filelist** entry is examined to determine the tape type.
- f** This option is used to determine if the tape is formatted. The first block of the *cpio* set is read to look for the *cpio* magic header to determine if the tape will be overwritten. If there is an error reading from the tape then the tape is assumed to be empty.

FILES

/tmp/tape.vtoc
ss.filelist

SEE ALSO

tapecpio(1), **Tgetname(1)**.

NAME

TmakeLmenu – create menu of files for tape backup or restore

SYNOPSIS

```
TmakeLmenu -b [ -d | -f ]
TmakeLmenu -r [ -d | -f ]
TmakeLmenu -s [ -a | -3 ]
```

DESCRIPTION

This utility reads a list of file names from the standard input and creates a menu description file to display them. The menu is placed on the standard output and should be redirected to a menu file; the menu file is passed to *shform*(1).

TmakeLmenu is called with two switches. The first indicates the type of menu desired. The second switch indicates the type of contents to be displayed in the menu.

The first switch can be one of the following:

- b Used for backup operations. The menu created is multiselectable. The title indicates that the contents come from the Filecabinet.
- r Used for restore operations. The menu created is multiselectable. The title indicates that the contents come from the tape.
- s Used for showing tape contents. The menu created is not multiselectable. The title is always "Tape Contents."

The second switch is one of the following:

- d The contents are folders. The input is in **ss.filelist** format (see *TmakessList*(1)). (Used only with **-b** and **-r**.)
- f The contents are files. The input is in **ss.filelist** format (used only with **-b** and **-r**).
- a The contents may be both files and folders. The input is in **ss.filelist** format (used with **-s** only).
- 3 The contents come from a *cpio -it* output (used with **-s** only).

EXAMPLE

The following:

```
cpio -it < /dev/rft3 | TmakeLmenu -s -3 > menufile
```

creates a menu file containing the list of files and folders in a tape backup set.

FILES

ss.filelist

SEE ALSO

cpio(1), shform(1), TmakessList(1).

NAME

TmakessList, *TprintSS* – generate, print file list for tape backup

SYNOPSIS

TmakessList offset
TmakessList 0 type
TprintSS type tapename

DESCRIPTION

TmakessList generates a file list in **ss.filelist** format for use by *TgetFtype(1)*. *TprintSS* prints the filelist on the standard output. The list thus generated is used in creating tape backup sets

TmakessList reads a list of files from the standard input and determines whether each is a directory. For each directory, the character **d** is printed to the standard output followed by the file name. For each file that is not a directory, the character **-** is printed to the standard output followed by the filename. The size of each file is accumulated, then added to *offset* (in blocks) and used to calculate the number of tapes required for the backup. This number is returned through the exit status.

TmakessList is called with one mandatory parameter, the *offset* to the start of the next backup set. This command can be used to generate an **ss.filelist** file from a *cpio-itv* (verbose) listing by specifying **0** for *offset* and a second parameter, *type*, such as **3B2** (see *TgetOvwrit(1)*).

TprintSS prints the contents of an **ss.filelist** file to the standard output, which can then be redirected to the appropriate printer. This program is called with two parameters. The first parameter, *type*, is the floppy tape backup type and can be **UNIX PC** or **3B2**. The second argument, *tapename*, is the name of the tape. For example:

```
TprintSS "UNIX PC" "MyTape" < ss.filelist | lp
```

EXAMPLE

To generate a backup set filelist:

```
ls | TmakessList 1024 > ss.filelist
```

This generates a file list of files in the current working directory (see *pwd(1)*) and exits with the number of floppy tapes required to perform this backup starting at block 1024 on the tape.

FILES

ss.filelist

SEE ALSO

cpio(1), *TgetFtype(1)*.

999-300-2151S
L-244039-46