

# **TapePac User's Guide**

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# TapePac for OpenVMS and Windows

## Introduction

TapePac transfers the contents of VMS Backup tapes to a Windows disk, thereby reducing the physical space necessary to store VMS backups, and allowing faster retrieval of backed up data when needed.

TapePac copies files from VMS Backup savesets stored on a tape drive connected to a VMS computer, and stores the files in TapePac container files on a Windows computer disk. The TapePac files can be archived to tape using Windows archive software, or left on the Windows disk for later retrieval as needed.

In convert mode, the VMS files within the TapePac container files can be restored to a VMS system using TapePac. The VMS Backup utility is not used. In copy mode, the VMS saveset is restored to a VMS system using TapePac and the VMS BACKUP is used to restore the files within it.

TapePac includes data compression to minimize the time needed to transfer the files between computers and the amount of disk or tape storage needed to store the contents of the TapePac files on the Windows computer.

TapePac consists of a VMS Client and a Windows Server, which communicate using TCP/IP.

## Using this Help

This Help system contains the entire TapePac Reference Manual. Included is the help for both client and server.

The help system is complete with an index and glossary and the ability to search for any word. Throughout the help system are many references to other topics in the help system. These will appear as do any links on the Internet. Usually buttons are used for the links. These have special designs as follows;

### Button Type

### Button example

A product or an operation.

Qualifier

Other link

In addition to navigating around with the buttons, **browse sequences** are provided. The arrows at the top of the Table of Contents will turn red when you enter a browse sequence. You can then use the arrows to view the next and previous pages in the sequence. For example, when you select an operation from the Table of Contents, you have entered a browse sequence for the operations of that product. For each operation, a browse sequence is provided to take you through all the available qualifiers for that operation.

The **search** works similar to Internet searches except you are only searching in this help system. The **index** is extensive. You can select a topic or type a word or part of a word to view more topics. The 'refresh' or 'Sync TOC' button at the top of the Table of Contents will show you where the current topic is. The red X will 'hide' the Table of Contents. To bring it back, simply click one of the buttons in the help header.

Many examples are presented in the Getting Started chapters as well as with each qualifier. Some knowledge is assumed on the part of the reader with regard to the use of VMS commands and VMS files. The following conventions are used throughout in the examples:

□	Square brackets, in command syntax, indicate that a syntactical element is optional. Square brackets are not optional, however, when used to delimit a directory name in a VMS file specification.
{ }	Braces surrounding two or more items separated by a comma indicate a choice; you must choose one of the syntactical elements.
UPPER-CASE	In the examples, items shown in upper-case may be entered at the keyboard without any changes.
lower-case	In the examples, items shown in lower-case require a substitution by the user before the command may be typed at a keyboard.

## Online Help

Online help is provided with the TapePac client installation kit. During installation, it is added to the VMS help library and is accessible with the following VMS command:

**\$ help tapepac**

The online help is intended as a quick reference to the command syntax and the many qualifiers available. For an experienced user, it may well suffice in place of this help system.



# Client Installation on VMS

## Installation Requirements

The installation kit consists of one distribution volume labeled AXP TPE version k.n-m or IA64 TPE version k.n-m, where k represents the major version number, n represents the minor version number and m represents the revision level.

The installer should be familiar with the "Guide to Open VMS Software Installation" and the OpenVMS installation procedure VMSINSTAL.COM.

The version of OpenVMS running must be as follows:

VMS Version 6.2 or higher (Alpha)

VMS Version 8.2 or higher (Integrity)

## Installation Options

TapePac commands may be permanently installed in the DCL tables; the TapePac HELP may be integrated with the VMS HELP. Updating the DCL tables makes TapePac available to all users just as any other VMS utility. Otherwise, the TapePac commands are available only to those users who execute the proper SET COMMAND after logging in.

## Selecting an Installation Directory

The installation of TapePac requires one directory. The logical name TP\_Manager is defined to point to this directory. Examples of files which reside in this directory are:

A copy of the TAPEPAC.CLD file which defines the TapePac command.

The TapePac HELP if it is not integrated with VMS HELP.

The TapePac client executable image files.

The default for the TapePac directory is to create a system level directory called SYS\$SYSROOT:[TAPEPAC].

During the installation, a list of system files which are new or modified by the installation procedure is displayed. If the TapePac command is integrated with the system DCL tables, users who are logged on during the installation must first log off and then log in again in order to access the TapePac command. If the command is not integrated with the system DCL tables, any user wishing to use TapePac must first execute the following command after logging in:

```
$ SET COMMAND TP_MANAGER:TAPEPAC
```

This command may also be added to the user's LOGIN.COM command file. Logical names are also set up for the TapePac image and the TapePac help library if the help was not integrated with the system help files. The image logical name is TAPEPAC

The logical name for the help library will be HLP\$LIBRARY unless it has already been assigned. The name would then be one of HLP\$LIBRARY\_1...HLP\$LIBRARY\_n where the name chosen is the first not already in use.

A startup command file is also created by the procedure which defines all the TapePac logical names. It resides in SYS\$MANAGER and should be invoked from the SYSTARTUP\_VMS.COM file to insure all logical names are defined after the system is restarted. The following command should be added to the SYSTARTUP\_VMS.COM file:

```
$ @SYS$MANAGER:TAPEPAC_STARTUP
```

This command is automatically executed by the installation procedure.

## Conventions used during Installation

The conventions used in the following procedure steps are as follows:

All input and output generated as a result of the installation procedure is in bold type.

The default answer (for those questions that have a default) is specified in brackets ([]) at the end of the question.

The installation procedure can be aborted by pressing <CTRL Y> at any time. In addition, you may get help by entering a question mark (?) at any prompt. The entire process should take about 5 minutes, depending upon your configuration.

## Installation Procedure

The following steps are required to install TapePac :

1. Log in to the SYSTEM account.

```
$ Username: SYSTEM
```

```
$ Password:
```

2. Invoke VMSINSTAL at the DCL prompt.

```
$ @SYS$UPDATE:VMSINSTAL
```

3. If there are other users on the system or if you have DECnet running, VMSINSTAL will issue a warning and ask you if you want to continue. It is normally not necessary for other users to log off, and DECnet being active should not cause any problems with the installation.

\* Do you want to continue anyway [NO]? Y

4. The next question refers to the backup of your system.

\* Are you satisfied with the backup of your system disk [YES]?

5. Next, you will be asked about the distribution volume. Enter the device from which you are loading the installation kit.

\* Where will the distribution volumes be mounted:

6. Enter IA64TPE or AXPTPE for the product name and confirm that you are ready.

\* Products: AXPTPE

\* Enter installation options you wish to use (none):

Please mount the first volume of the device on [device name]

\* Are you ready? Y

7. You will now be asked questions about purging old files replaced by this installation and running the Installation Verification Procedure (IVP) at the end of the installation. It is recommended that you answer YES to both questions.

\* Do you want to purge files replaced by this installation [YES]?

\* Do you want to run the IVP after the installation [YES]?

8. You will now be asked if you want to create a system level directory in which to store the TapePac files. If you answer YES, the procedure will create the system level directory SYS\$SYSROOT:[TAPEPAC]. If you answer NO, the procedure will ask you to give the directory specification of a user level directory. If the directory does not exist, the procedure will create it. In all cases, the system logical name TP\_MANAGER will be defined to point to the TapePac directory.

\* Do you want to create a system level directory [YES]?

\* Enter the device and directory for TapePac installation:

9. The next question regards installation of the TapePac command in the system DCL tables. If you answer YES, users will be able to access the TapePac command as other VMS commands. If you answer NO, users will be required to execute a SET COMMAND before they can access TapePac .

\* Do you want the TapePac command permanently installed in the DCL tables [YES]?

10. You will now be asked if you want the TapePac HELP file integrated with the system help files.

\* Do you want TapePac HELP permanently installed in the system help library [YES]?

11. You will now be asked if you already have a TapePac license installed. If you are installing an update to TapePac and you already have a license file, answer YES. If you are installing TapePac for the first time, answer NO. If you answer NO, you will then be asked to enter the evaluation kit key provided. Enter the key as provided to you.

\* Do you have a TapePac license already installed [NO]?

\* Enter the TapePac evaluation kit key: XXXXXX

12. All questions have been asked at this point. The installation will proceed to completion; the verification procedure will be executed, if it had been requested. If the IVP is not successful, a message will be output and the installation terminated.

13. If you did not request to have the IVP executed, you will need to execute the command file TAPEPAC\_STARTUP.COM located in SYS\$MANAGER.

## Installing TapePac as a known image

You may want to install TapePac as a known image if there are going to be many users. This will make loading of the program faster. The following command will install TapePac :

```
$ INSTALL
```

```
INSTALL> ADD/OPEN/HEADER TAPEPAC
```

```
INSTALL> EXIT
```

These commands may be inserted in the TAPEPAC\_STARTUP.COM command file in SYS\$MANAGER or alternatively added to the normal VMS startup command file. If you insert these commands in TAPEPAC\_STARTUP.COM, be sure to insert them at the end of the procedure; this will insure the logical names are properly defined. Refer to the OpenVMS Install Utility Manual for further details.

## TapePac License Files

TapePac requires a license file. This is a VMS file called TAPEPAC.LICENSE. The license file is created by the installation procedure and resides in SYS\$COMMON:[SYSMGR].

The license files created by the installation procedure are of limited time duration. Once the license files expire, TapePac will cease to function.

The expiration date is displayed using the product operation with the /VERSION qualifier. To see when your copy of TapePac will cease to execute, simply type the following command after TapePac is successfully installed:

```
$ tapepac/version
```

The version of TapePac you currently have will be displayed as well as the date of termination of the evaluation kit.

## Updating a License file

To obtain a permanent license file, you will need to obtain the node ID of each system for which you desire a license. To do this, simply run the license procedure TP\_LICENSE.COM.

```
$ @TP_MANAGER:TP_LICENSE
```

Print the node IDs that are generated by the procedure and email or FAX the printout to Compact Data Works. You will then be provided with a new checksum and instructions on how to upgrade your license file. Once that is accomplished, you have a permanent license file.

If you now display the version of TapePac an expiration date will no longer appear.



# Server Installation

## Windows Server

The TapePac server for Windows is installed by running the tpe\_install.exe program. Either double click on the icon after downloading or run this from a Windows command window. The installation installs the TapePac server as a Windows service and starts the service.

## TapePac Startup File

The Windows server uses the startup file TapePac .ini. This file contains the port number and the location of the TapePac log file. It may be edited to change either value. It is installed in the system32 directory on Windows. The initial values in the file are those which were entered during the installation.

```
port="6321"
```

```
logfile=c:\Program Files\TapePac\tapepac.log
```

The quotation marks on the port number are optional.

Each time the server is started, it reads this file and uses the values in it for the port number and the location of the TapePac log file.



# TCP/IP Port Number

## Port Number

The default port number used by TapePac for TCP/IP communications is **6321**. This may be changed on the server side by modifying the `tapepac.ini` file. The client side would then require the `/PORT` qualifier on each command that communicates with a server that has had its port number changed.



# TapePac Operations

## Convert Operation

The normal mode of operation for TapePac is to convert a VMS BACKUP saveset on tape and create a pacset on a Windows system. The tape is read and each file is treated individually. The contents of the saveset are thus converted to a different form which TapePac can recognize and restore files from. Files may then be restored to a VMS computer directly from the Windows computer using TapePac. This mode of operation supports tapes written with any block size.

TapePac supports savesets that span more than one tape.

The tape label is concatenated with the date of the first saveset on the tape to form a directory directly under the one specified in the output-destination. All pacsets will be given the same names as the input savesets with an extension of .pac.

### Format

**TapePac input-tape-spec output-destination [/qualifier1.../qualifiern]**

### Parameters

#### **input-tape-spec**

The input-tape-spec is the device which holds the tape of savesets to be copied.

#### **output-destination**

The output-destination is a Windows computer. The node name is required followed by a Windows file specification which is inclosed in quotation marks.

### Qualifiers

Many qualifiers are available for convert operations.

### Related Topics

## Copy Operation

TapePac can create a pacset of a BACKUP saveset on tape without any interpretation of the blocks on the tape. This is essentially the same as using VMS COPY to copy a saveset from tape to disk but in this case the data will be compressed and the resultant pacset will reside on a Windows computer. The original saveset may then be restored to a VMS computer and VMS BACKUP used to restore the files from the saveset. The tape **must have been written with a block size less than 32768**.

TapePac supports savesets that span more than one tape.

The tape label is concatenated with the date of the first saveset on the tape to form a directory directly under the one specified in the output-destination. All pacsets will be given the same names as the input savesets with an extension of .save rather than .pac. This distinguishes them from pacsets created from savesets which have been converted to the TapePac format.

## Format

**TapePac input-tape-spec output-destination [/qualifier1.../qualifiern]**

## Parameters

### input-tape-spec

The input-tape-spec is the device which holds the tape of savesets to be copied.

### output-destination

The output-destination is a Windows computer. The node name is required followed by a Windows file specification which is inclosed in quotation marks.

## Qualifiers

Many qualifiers are available for copy operations. The only required qualifier is /COPY.

## Related Topics

# Restore Operation

TapePac supports restore operations for both convert mode and copy mode. During a convert mode restore, files contained within the original VMS BACKUP saveset are restored individually. In this mode, individual files may be selected to be restored from the specified pacset.

During a copy mode restore, the original BACKUP saveset is restored to disk.

## Format

**TapePac input-pacset output-file-spec [/qualifier1.../qualifiern]**

## Parameters

### input-pacset

The input-pacset specifies the Windows node name followed by a Windows file specification enclosed in quotation marks. This must include the pacset to be restored.

### output-file-spec

This is the disk and starting path where files are to be restored.

### Qualifiers

Many qualifiers are available for restore operations. Most of these are not available with copy mode.

### Related Topics

## List Operation

TapePac can list the contents of pacsets which reside on a Windows system.

### Format

```
tapepac/list input-pacset [/qualifier1.../qualifiern]
```

### Parameters

**input-pacset**

The input-pacset specifies the Windows node name followed by a Windows file specification enclosed in quotation marks.

### Qualifiers

Many qualifiers are available for list operations. The only required qualifier is /LIST.

### Related Topics

## Directory Operation

TapePac provides a VMS style directory listing of a folder on Windows. This provides visibility into the pacsets that have been generated.

### Format

```
tapepac/directory input-file-spec [/qualifier1.../qualifiern]
```

### Parameters

**input-file-spec**

The input-pacset specifies the Windows node name followed by a Windows file specification enclosed in quotation marks.

### Qualifiers

The only required qualifier is /DIR.

### Related Topics

## Support Operation

TapePac provides one support qualifier, /VERSION. This lists the version of TapePac which you are currently using as well as the expiration date if you are running an evaluation kit.

### Format

`tapepac/version`

### Qualifiers

# Using TapePac

## Verifying TapePac Client is Installed and Available

Once TapePac is installed on your system, you may need to issue a **SET COMMAND** to access the TapePac command; this is dependent on the type of installation selected (See the Installation Instructions). The following command will tell you whether TapePac is available to you, what version is installed, and when your evaluation kit will expire. If you are not running an evaluation kit, no date will be given.

```
$ TAPEPAC/VERSION
```

If you get a message indicating that TAPEPAC is an invalid verb, you will need to issue a SET COMMAND as shown below:

```
$ SET COMMAND TP_MANAGER:TAPEPAC
```

If this command was successful, then retry the VERSION command. If you are still having problems, recheck your installation.

## Converting a VMS BACKUP Tape

A pacset may only be created on a Windows system. The input tape is read, individual files are compressed and written to the pacset.

To create a pacset on a Windows system, the following command may be used:

```
$ tapepac mka500: win::"c:\backups"
```

This command will read each saveset on the tape and create a separate pacset for each one. They will all be placed in sub-folder under c:\backups on the Windows system. The sub-folder name will be created using the tape label concatenated with the date of the first saveset on the tape.

Each pacset created will be named the same as the original saveset but with an extension of .pac.

If you would like to see the name of each file as it is being processed, simply use /LOG.

## Copying a VMS BACKUP Tape

TapePac may be used to create a pacset containing an exact copy of the savesets on input tape.

The input tape is read, data blocks are compressed and written to the pacset. When this pacset is restored, you will have a copy of the original VMS BACKUP saveset. The tape must have been written with a block size less than 32768.

To create a pacset containing a copy of the VMS BACKUP saveset, the following command may be used:

```
$ tapepac/copy mka500: win::"c:\backups"
```

This command will read each saveset on the tape and create a separate pacset for each one. They will all be placed in sub-folder under c:\backups on the Windows system. The sub-folder name will be created using the tape label concatenated with the date of the first saveset on the tape.

Each pacset created will be named the same as the original saveset but with an extension of .save.

If you would like to see the name of each saveset as it is being processed, simply use /LOG.

## Listing a Pacset

If you would like to see the contents of a pacset, simply use TapePac to list it as follows:

```
$ tapepac/list win::"c:\backups\tapelabel\userdisk.pac"
```

The listing will display the contents of the pacset header as well as each file contained in the pacset. You may also verify each file as it is listed.

```
$ tapepac/list/verify win::"c:\backups\tapelabel\userdisk.save"
```

This command requests that each file be checked for data integrity by verifying it's CRC.

## Restoring Converted Files

Restoring files from a converted pacset is as simple as creating one.

```
$ tapepac win::"c:\backups\tapelabel\userdisk.pac" *.*
```

or using the alternate syntax,

```
$ tapepac restore win::"c:\backups\tapelabel\userdisk.pac" *.*
```

will restore all files in the specified pacset. If the files exist in the current directory, they will not be restored. By default, TapePac will not restore a file with an identical file name to one that already exists. You may override this condition using /NEW\_VERSION, /OVERLAY, or /REPLACE, creating new versions of the files or replacing existing versions with those from the pacset .

You may rename files as they are restored or restore them to a different device and/or directory.

```
$ tapepac win::"c:\backups\tapelabel\userdisk.pac" [otherdir]*.new
```

will restore the same files but to the [OTHERDIR] directory. All of the restored files will be given an extension of .NEW.

You may also select (/SELECT) specific files from the pacset and/or exclude (/EXCLUDE) files from being restored. If you are restoring a directory tree, be sure to use the ellipsis when specifying the directory tree.

```
$ tapepac win::"c:\backups\tapelabel\userdisk.pac" [otherdir...]
```

This command will restore the previously saved directory tree to a different directory but will retain the tree structure. If you want to collapse the tree structure, eliminate the ellipsis (...).

Since files are completely restored, including the dates in the file header, you may want to set the backup date to zero to indicate these files have not been backed up. You do this by adding /RECORD=0 to the restore command.

You may also override default file characteristics. The /TRUNCATE qualifier sets the end of file mark at the end of data rather than the allocated space. Use /CONTIGUOUS or /CBT to specify contiguous blocks for the restored file. You may also request that files which were previously marked contiguous be changed (use /NOCONTIGUOUS).

## Restoring a Copied Saveset

Restoring files from a copied saveset is simple.

```
$ tapepac win::"c:\backups\tapelabel\userdisk.save" *.*
```

will restore the original VMS BACKUP saveset that resided on tape. You then use VMS BACKUP to restore any files.

## Getting a Directory of a Windows system

If you would like to see the contents of a Windows folder, simply use TapePac to list it as follows:

```
$ tapepac/dir win::"c:\backups\tapelabel"
```

The listing will display all files contained in the Windows folder in a format similar to a VMS DIR command. To see all sub-folders simply add /SUBDIRS to the command.

```
$ tapepac/dir/subdirs win::"c:\backups"
```

This command will list all files contained in the specified folder as well as all files in each sub-folder..

## Invoking TapePac from Within Batch Files

You may want to invoke TapePac from within a batch command file. If TapePac was installed on your system using the non-integrated approach, remember to issue the following command before invoking TapePac within your batch file.

```
$ SET COMMAND TP_MANAGER:TAPEPAC.CLD
```

TapePac can be invoked from within DCL command files which are executed interactively or as batch jobs. As with most VMS utilities, TapePac generates a condition code when it completes execution. If TapePac completes successfully, the condition code will have a true (odd) value. If TapePac completes unsuccessfully, the condition code will have a false (even) value. The condition code can be checked by testing the global symbols \$STATUS or \$SEVERITY. See the "Guide to Using DCL and Command Procedures on OpenVMS" for more information.

## Translating an Exit Code

If you are running TapePac from within a batch file or called from another program, there may be times when you wish to translate an exit code. TapePac messages are provided with the distribution kit and reside in the TP\_MANAGER directory. To translate a given exit code, execute the following DCL commands:

```
$ SET MESSAGE TP_MANAGER:TAPEPAC_MSG
$ symbol = F$MESSAGE(exit_code)
$ SHOW SYMBOL symbol
```

This will display the text of the message associated with the exit code.

## Using CTRL-T to Monitor Progress

During any TapePac operation, TapePac will 'piggyback' a status message to the one already provided by VMS with the use of the <CTRL-T> key. The message will indicate which file is being saved or restored and the block number of the file that TapePac is currently processing. This is most useful if you are saving entire disks and would like to see 'progress reports' as the operation proceeds. TapePac also reports the elapsed time since the start of the operation and a percent done status. The percent done indicates the percent of the files that have been processed, not time. The latter is available only for image mode saves and restores.

## Setting the Process Priority Using /PRIORITY

If you are running TapePac interactively, or even from a batch job, you may wish to lower the priority of the process executing TapePac. This is accomplished easily using the /PRIORITY qualifier. The following example will save a file and set the process priority to 3.

```
$ TAPEPAC/PRI=3 MKA500: WIN::"C:\BACKUPS"
```

The ALTPRI privilege is required for the priority to be raised. If you do not have this privilege, the /PRIORITY qualifier can only be used to lower the priority. Attempts to increase it will have no effect.

At the end of the operation, the priority is changed back to what it was before the /PRIORITY qualifier took effect.



# Qualifiers

## Qualifiers Reference

Each of the available TapePac qualifiers is discussed in this section. They are presented in alphabetical order. Each qualifier is presented with a detailed description of its function, applicable operations, and its format.

### **/BRIEF**

Requests a brief listing of a pacset.

#### **type**

Command qualifier.

#### **format**

**/BRIEF**

#### **operations**

#### **related qualifiers**

#### **restrictions**

none

#### **description**

/BRIEF requests a brief listing of the contents of one or more pacsets. The listing consists of the pacset description (if input with /COMMENT during the save operation), the version of TapePac and the operating system used during the save operation, as well as the command line and date.

The file specification of each file contained in the pacset as well as additional information from the file header is also provided.

### example

```
$ tapepac/list/brief win::"c:\backups\tapelabel\fulldisk" (1)
```

(1) A description of the pacset will be output along with one line for each file contained therein. This lists the file name, file size and file creation date.

## /BY\_OWNER

Restores files with the owner set to the indicated UIC. This qualifier is synonymous with previous qualifier /OWNER\_UIC.

### type

Command qualifier.

### format

```
/BY_OWNER=[uic]
```

### qualifier value [uic]

The UIC may be specified as an identifier or in standard UIC format as described in the "VMS DCL Concepts Manual". The []s are required. Numbers must be input in octal, or preceded by a radix indicator (%X, %D, %O).operations

### operations

### related qualifiers

none

### restrictions

not available for Copy mode

### description

By default, TapePac restores files with the same UIC as the UIC of the original files. If the user does not have sufficient privilege, the UIC of the current process default is used. Use of the /BY\_OWNER provides a way to override the default processing and specify the UIC to be used. Again, if sufficient privilege is not provided, the process default UIC is used.

### example

```
$ tapepac win::"c:\backups\tapelabel\files"/by_owner=[user] *.* (1)
```

(1) The files contained in the pacset FILES.PAC will be restored with the UIC of [USER]. All restored files will reside in the current default directory and have the same file name and type as the original files.

## /CBT

Requests that restored file(s) be placed in the smallest number of sets of contiguous storage possible.

### type

Restore command qualifier.

### format

**/CBT**

### operations

### related qualifiers

### restrictions

not available for Copy mode

### description

/CBT (contiguous-best-try) causes the restored file(s) to be contiguous, i.e., to occupy consecutive logical blocks of storage on a best try basis. If more than three sets of contiguous blocks are required, the resulting file will not be marked as CBT.

By default, if the input file is contiguous or contiguous-best-try, TapePac will restore a file which has the same attributes. The /CBT qualifier is used to indicate contiguous attributes for other restored files.

If there is not enough contiguous space available on the output device while restoring contiguous files, an error message will be generated and the output file skipped. /NOCONTIGUOUS or /CBT may be used to override this condition, i.e., the output file created may not occupy consecutive blocks of storage.

### example

```
$ tapepac win::"c:\backups\tapelabel\docs"/cvt *.* (1)
```

(1) The pacset DOCS.PAC on the Windows system WIN is to be restored. Each restored file will reside in the current default directory and will be contiguous if possible, i.e., it will occupy

consecutive logical blocks of storage. If this is not possible, any remaining files will still be restored.

## **/COMMENT**

Requests that a comment be placed in the pacset for easy identification.

### **type**

Save command qualifier.

### **format**

**/COMMENT=string**

**/COMMENT="string"**

**/COMMENT**

### **qualifier value**

string (See text below)

### **operations**

### **related qualifiers**

none

### **restrictions**

none

### **description**

The supplied comment is kept as part of the pacset for easy identification of the contents of the pacset at a later time.

If the string is to contain lowercase, blank, and/or non-alphanumeric characters, it must be enclosed in quotation marks. The maximum length of a comment is 255 characters including the quotation marks if any.

If no string is supplied, the user will be prompted to enter one. Quotes are not necessary if using this form of the qualifier.

### **examples**

```
$ tapepac/comment="this is a test" mka500: win::"c:\backups" (1)
```

(1) The saveset on the tape mka500: will be saved. The contents of the comment will be included in the pacset for later display using the /LIST qualifier. The quotation marks surrounding the actual comment are necessary since the comment includes blanks. The resulting pacset will have the same name as the saveset on the tape (with extension .pac) and will reside in a sub-directory of c:\backups whose name matches the tape label.

```
$ tapepac/comment=tuesday mka500: win::"c:\backups" (2)
```

(2) The saveset on the tape mka500: will be saved.. The resultant pacset will contain the contents of the comment (i.e., the word "TUESDAY"). Quotation marks are not necessary in this case since the comment does not contain spaces or non-alphanumeric characters, however, VMS will change the characters to upper case if not enclosed in quotation marks. The comment may be displayed using the /LIST qualifier.

The resulting pacset will have the same name as the saveset on the tape (with extension .pac) and will reside in a sub-directory of c:\backups whose name matches the tape label.

## /COMPRESSION

Selects the compression algorithm.

### type

Command qualifier.

### format

```
/COMPRESSION=algorithm (default is FAST)
```

### qualifier value

**FAST**

**MAXIMUM**

**NONE**

Selects the type of compression to be used.

### operations

### related qualifiers

none

### restrictions

none

### description

The /COMPRESSION qualifier selects the type of compression. On an AXP or IA64 system MAXIMUM compression may yield the best performance because the I/O speed gained from the additional compression exceeds the speed lost due to additional processing.

### example

```
$ tapepac/comp=max mka500: win::"c:\backups" (1)
```

(1) All savesets on the tape MKA500: will be saved using maximum compression. The resulting pacsets will reside on the Windows system WIN in a sub-directory of c:\backups..

```
$ tapepac/comp=none mka500: win::"c:\backups" (2)
```

(2) All savesets on the tape MKA500: will be saved using no compression. The resulting pacsets will reside on the Windows system WIN in a sub-directory of c:\backups..

## /CONFIRM

Displays a prompt before each selected file or disk is processed.

### type

Command qualifier.

### format

```
/CONFIRM
```

### operations

### related qualifiers

none

### restrictions

none

### description

A prompt is sent to SYS\$COMMAND before each selected file is processed.

Information is displayed and the user must respond by typing a {Y,y} if the file/disk is to be processed. Any other response will result in the file/disk being skipped or the operation aborted.

**examples**

```
$ tapepac/confirm win::"c:\backups\tapelabel\doc" *.* (2)
```

(2) The files contained in the pacset doc.pac on the Windows system WIN will be candidates for restoring. The following is a sample prompt which will be displayed for each candidate file:

```
SYS$SYSDEVICE:<USER>TEST.DOC;1 restore? [N]
```

If the user responds by typing a {Y,y} followed by a carriage return, the file will be restored. Any other response will result in the file being skipped.

The restored files will reside in the current default directory. The file names, types and versions will match those of the saved files.

**/CONTIGUOUS**

Requests that restored file(s) be placed in contiguous storage.

**type**

Restore command qualifier.

**format**

```
/CONTIGUOUS
```

```
/NOCONTIGUOUS
```

**operations****related qualifiers****restrictions**

not available for Copy mode

**description**

/CONTIGUOUS causes the restored file(s) to be contiguous, i.e., to occupy consecutive logical blocks of storage.

By default, if the input file is contiguous, TapePac will create a file which is contiguous. The /CONTIGUOUS qualifier is used to indicate that other restored file(s) are to be contiguous.

If there is not enough contiguous space available on the output device when TapePac is creating contiguous files, an error message will be generated and the output file skipped.

/NOCONTIGUOUS is used to override this condition, i.e., the output file will be created, although it will not occupy consecutive blocks of storage.

### example

```
$ tapepac win::"c:\backups\tapelabel\doc"/contiguous *.* (1)
```

(1) The pacset doc.pac on the Windows system WIN is to be restored. Each restored file will reside in the current default directory and will be contiguous, i.e., it will occupy consecutive logical blocks of storage. If this is not possible, an error message will be generated, the file will be skipped, and any remaining files will be processed.

## /COPY

Specifies Copy mode.

### type

Command qualifier.

### format

```
/COPY
```

### operations

### related qualifiers

none

### restrictions

the input tape block size must be less than 32768

### description

This qualifier requests that TapePac process the input tape without any conversion. All savsets will be processed with one pacset created for each savset. No interpretation of the input data is done.

### example

```
$ tapepac/copy mka500: win::"c:\backups" (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN using copy mode. The pacset will contain an exact copy of the original VMS BACKUP saveset..

## /DIR

Display the contents of a Windows folder to SYS\$OUTPUT or a file.

### type

Command qualifier.

### format

**/DIR**

**/DIR=list-file-spec**

### qualifier value

file specification for the listing file. Default file type is .LIS.

### operations

### related qualifiers

### restrictions

none

### description

Displays the contents of a Windows folder. By default, the display is written to SYS\$OUTPUT. If a list-file-spec is provided, the display is written to the file. The list-file-spec follows standard VMS conventions for file specifications. The default device and directory will be the current process defaults; the default type will be .LIS. There is no default for the file name; the user must supply one.

### examples

```
$ tapepac/dir win::"c:\backups\tapelabel" (1)
```

(1) The contents of the folder c:\backups\tapelabel will be displayed.

## /EXCLUDE

Requests that the specified files be excluded during file selection.

### type

File selection qualifier.

### format

**/EXCLUDE=exclude-file-spec**

**/EXCLUDE=(exclude-file-spec,...)**

### qualifier value

file specification list of the files to be excluded. There is no default value.

### operations

### related qualifiers

### restrictions

not available for Copy mode

### description

The exclude-file-spec may contain a list of file specifications. In this case, the list must be delimited by parentheses. Wild cards and sticky defaults are supported.

During a restore operation, this qualifier is used to exclude files in the pacset from being restored.

### examples

```
$ tapepac win::"c:\backups\tapelabel\myfiles" /excl=login.com (1)
```

(1) The pacset myfiles.pac on the Windows system WIN is to be restored. Each file in the pacset will be restored with the exception of login.com. All restored files will reside in the current default directory

## /FULL

Requests a detailed listing of a pacset.

**type**

Command qualifier.

**format**

**/FULL**

**operations****related qualifiers****restrictions**

none

**description**

/FULL requests a complete listing of the contents of one or more pacsets. The listing consists of the pacset description (if input with /COMMENT during the save operation), the version of TapePac and the operating system used during the save operation as well as the command line and date. The file specification of each file contained in the pacset as well as additional information from the file header is also provided.

**example**

```
$ tapepac/list/full WIN::"c:\backups\tapelabel\fulldisk" (1)
```

(1) Detailed information will be displayed to SYS\$OUTPUT;.

**/LIST**

Display the contents of a pacset to SYS\$OUTPUT or a file.

**type**

Command qualifier.

**format**

**/LIST**

**/LIST=list-file-spec**

### qualifier value

file specification for the listing file. Default file type is .LIS.

### operations

### related qualifiers

### restrictions

none

### description

Displays the contents of a pacset; by default, the display is written to SYS\$OUTPUT. If a list-file-spec is provided, the display is written to the file. The list-file-spec follows standard VMS conventions for file specifications. The default device and directory will be the current process defaults; the default type will be .LIS. There is no default for the file name; the user must supply one.

### examples

```
$ tapepac/list win::"c:\backups\tapelabel\dirtree" (1)
```

(1) The contents of the pacset dirtree.pac will be displayed.

## /LOG

Display progress and status messages to SYS\$OUTPUT.

### type

Command qualifier.

### format

```
/LOG
```

```
/NOLOG (default)
```

### operations

### related qualifiers

**restrictions**

none

**description**

Displays the file specification of each input file processed as the command executes; the display is written to SYS\$OUTPUT.

/LOG implicitly implies /STATISTICS. If statistics are not desired, this must be explicitly requested using the negated qualifier /NOSTATISTICS.

**examples**

```
$ tapepac/log mka500: win::"c:\backups" (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN. The following is a sample of the information which is sent to SYS\$OUTPUT during execution of this command:

```
%TAPEPAC-S-SAVED, saved SYS$SYSROOT:[SYSEXE] SYSUAF.DAT;2
```

**/NEW\_VERSION**

Requests that restored files with matching file names be given new (higher) version numbers.

**type**

Restore command qualifier.

**format**

```
/NEW_VERSION
```

**operations****related qualifiers****restrictions**

not available for Copy mode

**description**

/NEW\_VERSION allows identically named files to be restored, setting the version number of the restored file to the highest existing number plus one. By default, TapePac will not restore a file with an identical file name to one that already exists; an error message is generated.

Use of the /NEW\_VERSION qualifier is one way to override this default. /REPLACE and /OVERLAY are others.

By default, restored files have the same version number as the original file. If an identically named file exists with a higher version number, the saved file is restored (with the lower version number) and a warning message is generated. The use of /NEW\_VERSION will give the newly restored file a version number higher than any existing file of the same name and type rather than lower. In this case, no warning message is generated. The table below gives an example of this use of /NEW\_VERSION.

Saved File	Existing File	Default Result	Result using /NEW_VERSION
file.exp; 3	file.exp; 4	file.exp;3	file.exp;5
file.exp; 3	file.exp; 3	no file expanded (error message)	file.exp;4
file.exp; 3	file.exp; 2	file.exp;3	file.exp;3

**note**

If multiple versions of a file exist in the pacset, using /NEW\_VERSION will cause the version numbers to be reversed. For example, a file with version numbers ;5, ;4, ;3 and ;2 and which does not currently exist on disk, will get restored with version numbers ;5, ;6, ;7, and ;8.

**example**

```
$ tapepac win::"c:\backups\tapelabel\myfiles"/new_version *.* (1)
```

(1) The files contained in the pacset myfiles.pac from the Windows system WIN directory will be restored. If files with the same version number exist for the files contained in myfiles.pac, the saved files will be restored and given a higher version number. All restored files will reside in the current default directory and have the same file name and type as the corresponding saved files.

## /OVERLAY

Requests that restored files with matching file names be written over the existing files.

### type

Restore command qualifier.

### format

**/OVERLAY**

### operations

### related qualifiers

### restrictions

not available for Copy mode

### description

/OVERLAY overwrites existing files with identically named files from the pacset. By default, TapePac will not restore a file with an identical file name to one that already exists; an error message is generated.

Use of the /OVERLAY qualifier is one way to override this default. /REPLACE and /NEW\_VERSION are others. /OVERLAY is similar to /REPLACE but with different placement of the file on disk.

/OVERLAY causes the blocks associated with a file to be overwritten with the contents of the file being restored. If the restored file contains more blocks than the file it is overlaying, the file will be extended as necessary. If the restored file contains fewer blocks than the file it is overlaying, the end of file marker is reset, unless /TRUNCATE is also specified in which case the file is truncated.

### example

```
$ tapepac win::"c:\backups\tapelabel\myfiles"/overlay/select=large.dat
*.* (1)
```

(1) The file LARGE.DAT contained in the pacset myfiles.pac on the Windows system WIN will be restored. If a file with the same version number exists, the saved file will be written on top of the existing file.

## /PASSWORD

Specifies a password for the resultant pacset.

#### type

Command qualifier.

#### format

**/PASSWORD**

#### operations

#### related qualifiers

none

#### restrictions

none

#### description

This qualifier is used to add password protection to the pacset. The user will be prompted (SYS\$COMMAND) to enter the password once execution has begun. The password is NOT displayed as the user types it. A verification prompt is also issued. The password may be any character string up to 80 characters in length. The password will subsequently be required by the restore operation.

The user assumes full responsibility for remembering the password. **It cannot be read directly from the pacset. Once a password is used in creation of a pacset, the password MUST be supplied for later operations with the pacset.**

#### example

```
$ tapepac/password mka500: win::"c:\backups" (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN. A prompt will be issued for a password. **The password is NOT displayed as the user types it.** The password is stored as part of the pacset. The password **MUST** be entered for any restore operations to proceed.

## /PORT

Specifies the port number to be used for this operation.

#### type

Command qualifier.

**format****/PORT****operations****related qualifiers**

none

**restrictions**

none

**description**

The default port number used by TapePac for TCP/IP communications is 6321. The port number on the client side may be changed using this qualifier.

**examples**

```
$ tapepac mka500: win::"c:\backups"/port=6003 (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN. The port number 6003 will be used for this connection. The port number on the specified server must have been changed to use 6003 also.

**/PRIORITY**

Requests the TapePac process to execute at the specified priority.

**type**

Command qualifier.

**format****/PRIORITY=number****qualifier value**

number

The number indicates the priority level at which the TapePac process should execute.

**operations**

### related qualifiers

none

### restrictions

none

### description

This qualifier is used to alter the priority of the executing process. The priority may be lowered to reduce system overhead. The user must have ALTPRI privilege to raise priority; none is required to lower it

TapePac resets the priority when it completes execution.

### example

```
$ tapepac/priority=3 mka500: win::"c:\backups\alldisk (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN. TapePac will execute at a priority level of 3.

## /RECORD

Requests that processed files have the backup date field in the file header set to zero indicating that the restored file has not been backed up.

### type

Restore qualifier.

### format

```
/RECORD=0
```

### qualifier value

**0** (zero)

Requests that the backup date field of the restored files be set to zero, indicating the file is not backed up.

### operations

**related qualifiers**

none

**restrictions**

not available with Copy mode

**description**

By default, TapePac does not change dates in a file header. The exception is the backup date field. /RECORD=0 causes TapePac to zero the backup time field of each selected file header record. This tells VMS that the indicated files have never been backed up.

Sufficient user privilege is required.

**examples**

```
$ tapepac/record=0 win::"c:\backups\tapelabel\userfiles.pac" [*...]*.*
(1)
```

(1) The files contained in the pacset userfiles.pac will be restored. Each restored file will be updated to have its backup date field set to zero to indicate the file has never been backed up.

All restored files will reside in the original directory and have the same file name and type as the corresponding saved files.

**/REPLACE**

Requests that expanded files which have matching file names replace the existing files.

**type**

Restore command qualifier.

**format**

```
/REPLACE
```

**operations****related qualifiers****restrictions**

not available for Copy mode

## description

Allows a file to be replaced when an identically named file is encountered during a restore operation. TapePac deletes the existing file and processes the new file with the same version number.

By default, TapePac will not restore a file with an identical file name to one that already exists. An error message is generated. Using the /REPLACE qualifier is one way to override this default condition. /NEW\_VERSION and /OVERLAY are others.

## example

```
$ tapepac win::"c:\backups\tapelabel\myfiles"/replace *.* (1)
```

(1) The files contained in the pacset myfiles.pac on the Windows system WIN will be restored. If existing files with the same version number exist for the files contained in the pacset, the saved files will be restored, replacing the existing files with the same version number. All restored files will reside in the current default directory and have the same file name and type as the corresponding saved files.

## /SELECT

Selects files for processing.

### type

File selection qualifier.

### format

```
/SELECT=select-file-spec
```

### qualifier value

file specification list of the files to be excluded.

There is no default value.

### operations

### related qualifiers

### restrictions

not available for Copy mode

**description**

This qualifier is used to selectively list or restore files. The select-file-spec may contain a list of file specifications. In this case, the list must be contained in parentheses. Wild cards and sticky defaults are supported. Relative version numbers are not supported.

**examples**

```
$ tapepac win::"c:\backups\tapelable\test"/select=*.com *.* (1)
```

(1) The files contained in the pacset test.pac which have file type .COM will be restored. All files will reside in the current default directory. The restored files will have file names, types and version numbers which match those of the corresponding saved files.

```
$ tapepac/list win::"c:\backups\tapelabel\mydir"/select=(*.c,*.mar) (2)
```

(2) The files contained in the pacset mydir.pac which have file type .C and file type .MAR will be listed in the brief LIST display.

## /STATISTICS

Request statistical information regarding the execution process be displayed.

**type**

Command qualifier.

**format**

**/STATISTICS**

**operations****related qualifiers****restrictions**

none

**description**

This qualifier causes statistical information regarding the process to be displayed to SYS\$OUTPUT. The statistics include elapsed time, CPU time, number of buffered I/O's, number of direct I/O's, peak number of pages of virtual memory allocated, and number of page faults. Other statistics are operation dependent. The save operation also displays total blocks input, total compressed blocks output, and the percent reduction.

The number of pages of virtual memory used represents the amount of dynamically allocated memory, i.e., the amount of virtual memory memory, i.e., the amount of virtual memory allocated by TapePac.

### example

```
$ tapepac/statistics mka500: win::"c:\backups" (1)
```

(1) All savesets on the tape in MKA500: will be saved on the Windows system WIN. At the end of the save operation, statistical information will be sent to SYS\$OUTPUT. An example of this is given below.

#### TapePac Statistics

```
Elapsed Time: 00:00:11.85 CPU Time: 0:00:07.33  
Buffered I/O:      146 Direct I/O:      45  
Virtual Memory Used: 1089 Page Faults:  381
```

```
295 blocks (18 input files) compressed to 63 blocks (78.6 percent  
reduction)
```

## /SUBDIRS

Display the contents of a Windows folder to SYS\$OUTPUT or a file.

### type

Command qualifier.

### format

```
/SUBDIRS
```

### qualifier value

none

### operations

### related qualifiers

### restrictions

/DIR is required

### description

Used with /DIR, this qualifier requests that the contents of all sub-folders also be displayed.

### examples

```
$ tapepac/dir/subdirs win::"c:\backups" (1)
```

(1) The contents of the Windows folder (and all sub-folders) will be displayed.

## /SUMMARY

Requests a summary display of a pacset.

### type

Command qualifier.

### format

```
/SUMMARY
```

### operations

### related qualifiers

### restrictions

none

### description

/SUMMARY provides for a summary display of the contents of one or more pacsets to SYS\$OUTPUT. The display consists of the pacset description (if input with /COMMENT during a save operation) and the version of TapePac and the operating system used. Specific information about individual files is not given.

### example

```
$ tapepac/list/summary win::"c:\backups\tapelabel\savset" (1)
```

A summary display of the pacset called savset.pac in the backups directory on the Windows system WIN will be produced.

## /TRUNCATE

Requests that restored files be truncated at the end-of-file.

#### type

Restore command qualifier.

#### format

**/TRUNCATE**

#### operations

#### related qualifiers

#### restrictions

not available for Copy mode

#### description

/TRUNCATE requests that the restored file(s) be truncated at the end-of-file. By default, the allocation of the original file determines the size of the restored file.

If the pacset is restored to a different device, the allocation of the restored file may be affected by the device cluster size (see "Guide to OpenVMS System Management and Daily Operations") of the new device. Use of the /TRUNCATE qualifier may reduce the amount of disk space allocated for the expanded files if the new device cluster size is different from that of the original device.

#### note

/TRUNCATE may only be used for sequential files. If specified for indexed or relative files, an informational message will be generated and the qualifier will be ignored for the file in question.

#### example

```
$ tapepac win::"c:\backups\tapelabel\test"/truncate *.* (1)
```

(1) The pacset test.pac is to be restored. The allocation of each restored file will be set to the end-of-file block. The actual allocation will depend on the device cluster size of the system on which the files are being expanded.

All restored files will reside in the current default directory. Their file names, types and version numbers will match those of the original files.

## **/VERIFY**

Requests that files be expanded in memory with CRC checking.

#### type

Command qualifier.

#### format

**/VERIFY**

#### operations

#### related qualifiers

#### restrictions

none

#### description

This qualifier requests verification of the pacset.

If /VERIFY is used with /LIST, as each saved file is read it is expanded in memory with checking of CRCs. An error message is output if the CRCs do not match. If /LOG is also requested, a message indicating successful verification is output as each file is verified.

#### examples

```
$ tapepac/list/verify win::"c:\backups\*" (1)
```

(1) Each pacset in the \backups directory on the Windows system WIN will be verified. All files will be expanded in memory with CRC checking done. Error messages will be displayed for any files which do not verify.

## /VERSION

Displays the version of TapePac.

#### type

Command qualifier.

#### format

**/VERSION**

## operations

## related qualifiers

none

## restrictions

cannot be used with any other qualifier

## description

Displays the version of Tapepac to SYS\$OUTPUT. The level indicates the internal structure revision level of the pacsets created with this version of the software. All previous levels are supported for restore operations, however, only files with the level indicated will be created.

## example

```
$ tapepac/version (1)
```

(1) The following information will be displayed to SYS\$OUTPUT.

```
Tapepac Version 1.0-0 Evaluation Kit Level D  
Copyright 2006 Compact Data Works, Inc.  
All rights reserved.  
Licensee: EVALUATION KIT  
Serial Number: 000000  
Node ID: xxxxxxxx  
License Type: Evaluation
```