



*Excel
Streaming Tape -
Operations
Manual*

**OWNER'S MANUAL AND REFERENCE GUIDE
(VERSION 4.2)**

EVER for EXcellence

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Operations Manual*

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(VERSION 4.2)**

**EVEREX SYSTEMS, INC.
48431 MILMONT DRIVE
FREMONT, CA 94538**

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Warning

Class B: Computing Device

WARNING: This equipment generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, it may cause interference to radio and television reception. The product has been certified and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Ensure that card mounting screws, attachment connector screws, and ground wires are tightly secured.
2. Reorient the computer with respect to the receiver.
3. Move the computer away from the receiver.
4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.
5. Reorient the receiving antenna.

This product requires the use of shielded cables and connectors for proper installation and connection to peripheral devices. Shielded cables are available from authorized dealers. The manufacturer is not responsible for any radio or television interference caused by using other than the recommended cables or by unauthorized modifications to this equipment.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio TV Interference Problems." This booklet is available at FOB Public Contact Branch, Room 725, 1919 M St. NW, Washington, DC 20555, Telephone: (202) 634 - 1940, Stock No. 004-000-00345-4 (FCC, Part 15.838 b).

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Chapter 1: Introduction

This manual will help to familiarize you with all the functions and features of your Excel Streaming Tape subsystems. Before using this manual, you should have completed the installation of your tape subsystem according to the accompanying manual *Excel Streaming Tape Installation*.

As part of the installation process you should have installed the tape software on your hard disk drive under the default directory C:\EVTAPE (or other pathname specified by you). Change to that directory now, and access the tape software Main Menu by typing:

```
tape <Enter>
```

Throughout the tape software, there are two ways to select and execute a function:

- You can use the cursor keys (located in the numeric keypad at the right side of your keyboard) to move the cursor around on the screen to select the function of your choice. The selected function appears in reverse video. To execute, press <Enter>.
- Each function corresponds to a function key, which is marked next to it on the screen. To select and automatically execute that function, press the appropriate function key. The cursor does not have to be positioned over that function in order to choose it with the function key.

Two of the function keys have constant meanings throughout the tape software:

- The <F1> key toggles context-sensitive on-line help. At any point in the tape software, you can press <F1> to display a help window on the screen. The help window will contain information specific to the currently-selected function. After reading the help window, press <F1> again to toggle OFF help, then proceed with the software operation. This feature can save you a lot of time and make your use of the tape software easy and fun.
- The <F10> key quits the routine that you are in, and returns you to the previous "level." For example, if you are at the Main Menu and press <F10>, you will exit back to DOS.

1.1: THE MAIN MENU

The various functions of the main menu are as follows:

Help

The main menu comes up with its cursor positioned on HELP. This function displays several pages of help information that is generic to the whole program; for example, it defines the action of certain keys and the meanings of several commonly-used terms. You may find it worthwhile to read through these help pages in order to familiarize yourself with the tape software program.

Image Backup

This function backs up an entire disk drive, including all its directories and files, to the tape. (The contents of the original disk will not be affected by this operation.) The data may subsequently be restored from the tape back to the disk by either Image or File Restore operations (see below).

An Image Backup operation creates one dataset on the tape, containing all of the information that was on the original disk drive.

File Backup

Instead of backing up the entire contents of a disk drive, file backup lets you pick and choose certain file(s) or directory(ies) from within that disk, skipping over any other data. (The contents of the original disk will not be affected by this operation.) The data may subsequently be restored from the tape back to the disk using File Restore only.

A File Backup operation creates one dataset on the tape, containing all the specified file(s).

Image Compare

After a backup has been completed, a compare operation will verify that all the data on the resulting tape matches exactly the original data on the hard disk drive. Please note that the Compare functions are very exacting: if any change

has been made to the hard disk drive between the time of backup and the compare - for example, one file is created, modified, or deleted - then the data will no longer be identical and a miscompare will result. The Image Compare program is for use only after Image Backup sessions (see Image Backup, **above**).

File Compare

File Compare is very similar to Image Compare, but is for use in conjunction with file-by-file backup sessions.

NOTE: Neither of the compare operations has any effect whatsoever on the data on your disk. Nothing will be altered, damaged, or removed from the disk as a consequence of a compare. These operations are perfectly safe.

Image Restore

An Image Restore operation copies the contents of an image dataset from the tape back to the hard disk drive. Please note that Image Restore will completely overwrite the existing contents (if any) of the disk drive and replace them with the contents of the tape dataset. Therefore, we recommend that you use Image Restore only with a brand-new hard disk drive or one that you are absolutely certain contains no valuable data. To add tape data to a hard disk drive with existing valuable data, we recommend File Restore (see below).

File Restore

File Restore lets you select some (or all) of the files from the tape dataset (either image or file-by-file) to be restored to the disk. In addition, File Restore lets you specify the pathname to which the files will be restored on the target disk, so you can avoid overwriting any existing data on that disk.

Install/Config

These routines help you install the tape software on your hard disk drive, set up certain operating parameters of the software, and reconfigure your tape controller card (if necessary) to avoid any conflict with other devices present in your particular computer system.

Tape System Test

This function contains several diagnostic routines that test the entire tape subsystem for any conflict or failure.

1.2: EASY AND ADVANCED USER INTERFACES

In order to accommodate the wide range of streaming tape users and their applications, Excel Streaming Tape has two user interface modes: easy and advanced.

In the easy user interface (to which the program defaults), the menus are deliberately kept as simple as possible, and many

of the optional configuration parameters are pre-determined for you. We recommend this user interface for the great majority of users whose applications are fairly basic, and those who prefer an easy software operation.

The advanced user interface also incorporates the more powerful and sophisticated features of the tape software. In certain complex installations, it may be necessary to use software features that are available only through the advanced user interface. In addition, we recommend the advanced user interface to those users with more technical background and interest in advanced features. Please note that even in the advanced user interface mode, context-sensitive on-line help is always available.

Not every menu in the tape software has easy and advanced user interfaces. The Main Menu, Tape System Test, Install/Config, File Restore, and Image and File Compare functions are the same for all users. However, the Image and File Backup and Image Restore operations have easy and advanced interfaces.

There are two ways to access the Advanced User Interface:

1. From the easy user interface of the Image Backup, File Backup, or Image Restore menu, press <Alt-F1> (hold down <Alt> and briefly press <F1>). This will toggle you

to the advanced user interface for that menu. To toggle back, press <Alt-F1> again. This method is temporary; when you next re-start the tape software it will return to its original user interface.

2. If you prefer to start the software in advanced user interface mode every time, follow these steps:
 1. From the main menu, select and execute Install/Config.
 2. From the Install/Config menu, select and execute Setup Software Configuration.
 3. On the Setup Software Configuration screen, change the value of Enable Advanced User Interface from N to Y.
 4. Press <F8> to save the changes, and <F10> to exit back to the main menu.

With the software configured to start in advance user interface mode, you can still use <Alt-F1> to toggle to the easy user interface and back.

Chapters 4 and 5 will have separate sections on the advanced user interface features of the backup and restore functions of the tape software.

Chapter 2: Install/Config

The Install/Config routines help you install the tape software on your hard disk drive, set up certain operating parameters of the software, and reconfigure your tape controller card (if necessary) to avoid any conflict with other devices present in your particular computer system.

2.1: FIRST TIME INSTALLATION

This routine creates a directory for the tape software on your hard disk drive, and copies each of the original diskettes to that directory. It then instructs you to run the Complete Tape Test routine, under Tape System Test, before you start backing up your data.

The default directory name created for the tape software is C:\EVTAPE, but you can change this to any valid DOS pathname you want.

2.2: RE-INSTALL THE TAPE SOFTWARE

This routine repeats the functions of First Time Installation (see above).

2.3: SETUP HARDWARE CONFIGURATION

This routine is extremely useful in helping to resolve conflicts that may arise between cards and devices already present in your system, and the default configuration of the tape controller card.

All the Excel Streaming Tape controller cards feature reconfigurable DMA, IRQ, and port addresses, in order that any such conflict with other devices, which may arise in some systems, can be easily resolved. For PC/XT/AT and PS/2 Model 30 systems, reconfiguring the controller cards involves changing the settings of certain jumpers and/or dipswitches on the card itself. For Micro Channel systems, reconfiguration is accomplished entirely through software.

For complete instructions on using this program to reconfigure your controller card, please see the accompanying manual *Excel Streaming Tape Installation*.

2.4: SETUP SOFTWARE CONFIGURATION

This function lets you set up certain operating parameters of the tape software, as follows:

Run Software in Single DMA Mode

Streaming tape uses a technology called Direct Memory Access, or DMA, to route data from your hard disk drive through the computer's memory and to the tape at the maximum possible speed. Normally, two DMA channels are involved in a tape operation: one conducting data from the disk into memory, and a second channel conducting data out of memory and to the tape.

There are three circumstances under which it may become necessary to operate the tape subsystem with one DMA channel instead of two:

-
1. Other high-performance peripheral options (for example, network adapter cards, or micro-to-mainframe terminal emulation adapters) installed in the computer have already occupied all the DMA channels. In this case, the tape controller can be forced to share DMA3 with the hard disk controller.
 2. The DMA controller chip on the system's motherboard cannot support dual DMA mode. In this case, the DMA controller chip should be replaced; please consult your dealer or technician about this. In the interim, you can probably operate the tape system in single DMA mode.
 3. Certain networking systems, notably IBM's PC NET™, require that you run in single DMA mode when backing up data from a remote hard disk drive (a drive that is not installed in your own computer).

Single DMA operation results in greatly reduced data transfer speed and should be used only as a last resort if absolutely necessary.

For the great majority of applications, dual DMA mode is correct.

Enable Advanced User Interface (Y/N)

If you want the tape software to start up in Advanced User Interface every time, change this to Y. (You will still have

access to context-sensitive on-line help and can still use <Alt>-<F1> to toggle back to the easy user interface when desired).

Skip Read/Write on Bad Sectors (Y/N)

Some software copy protection schemes attempt to hide software "keys" in fake DOS bad sectors. The copy-protected software is specially written to be able to read the key from its own diskette, and requires this key before it starts running. Thus, if you attempt to make an unauthorized copy, DOS will not copy the "key" and your new copy will not work.

In order to perform a comprehensive backup of disks that contain such copy-protected program, the tape software will automatically attempt to read any bad sectors encountered on the disk.

However, some disk controller cards on the market will automatically perform a very time-consuming retry operation when attempting to read a real bad sector. This can impair the performance of the tape software in systems where copy-protected software is *not* present on the disk.

You should change this value to Y if and only if:

1. You are certain that there is no copy-protected software creating fake bad sectors on your disk, AND;
2. You do have a disk controller that performs a time-consuming retry when attempting to access a bad sector.

Disable Real-Time Clock Display (Y/N)

Normally the tape software displays the time, as read from your system's clock, in the upper left-hand corner of the screen. You can realize a slight improvement in speed by turning this display OFF. Disabling the clock may also resolve interrupt vector conflicts with certain memory-resident programs.

NOTE: For information on disabling other interrupt vectors in the system, move the cursor to **Disable Real Time Clock Display**, press <F1> for help, then press <Ctrl-PgDn> for extra help.

Chapter 3: Tape Test

All the diagnostics functions of the tape software are incorporated under Tape System Test on the main menu.

NOTE: Several of these functions are destructive: that is, they write and/or erase data from the tape, and therefore require you to work with a blank tape or one that contains no valuable data. To prevent you from inadvertently performing a destructive test on a tape that holds valuable data, a warning message to this effect appears before the Tape System Test menu.

If you experience a failure in Diagnostics, refer to Chapter 5 of the accompanying manual *Excel Streaming Tape Installation*.

3.1: COMPLETE DRIVE TEST

The complete drive test should be performed when the tape subsystem is first installed, and again if there is any indication of trouble with the tape subsystem. It tests the functioning of the computer, the tape, controller card, tape drive, and software. This test takes awhile, and when the tape subsystem passes, it can be considered usable for data backup.

3.2: SHORT TEST

An abridged version of the Complete Drive Test, this test takes about 3 minutes. You might use it when experimenting with configurations to solve a conflict in your system. Do not use the Short Test as a substitute for the Complete Drive Test.

3.3: TAPE TEST

Tape Test will determine whether or not a particular cartridge or cassette in your stock is reliable, by performing a read/write on the entire length of the tape.

3.4: CONTINUOUS DRIVE TEST

This one will loop through the Complete Drive Test over and over until either something fails or someone stops the test. This is typically left running overnight and is useful if you suspect a marginal problem with the tape subsystem (it seems to work some times but not others). If you leave this test running more than a day, you will use up a lot of the life of your tape drive and tape.

3.5: ERASE TAPE TEST

Erase Tape Test will pass the tape drive's erase bar over the entire tape, then attempt to read data again. This test is useful when you want to purge a tape of your data before passing it to another person.

3.6: RETENSION TAPE TEST

For a tape to be usable, a smooth level of tension must exist over the entire tape. If the tape has not been used for a long time, we recommend you retension it. Retensioning has no effect on any data that may be on the tape.

3.7: TEST LOG/REPORT

Test Log/Report, when run in advance of one of the other Tape System Tests, will prepare a file documenting exactly what was tested and what the results were. This file can then be printed out, for a "hard-copy" record of the testing.

This routine has no effect on any data that may be on your tape.

Chapter 4: Backup

The Backup operations will create a duplicate copy of the data you specify on the streaming tape.

4.1: IMAGE BACKUP - EASY USER INTERFACE

NOTE: Image backup has no effect whatsoever on the data on your disk. Nothing will be altered, damaged, or removed from the disk as a consequence of an image backup.

Image backup will make a complete copy of the disk data onto the tape. If the disk drive capacity is greater than the capacity of one tape, the software will simply prompt you to insert another tape when the previous tape is full.

Data backed up by this method can be restored either by Image Restore or File Restore.

Each image backup that you perform creates a single dataset on the tape.

To perform an image backup, follow these steps:

1. From the main menu, select and execute Image Backup.
2. Fill in (or simply confirm the default setting) each field in the Image Backup menu, as described below.
3. When all the fields are correct, press <F8> to start the backup.

-
4. We recommend that you regularly perform an Image Compare, following Image Backup, especially when dealing with extremely valuable data.

Select Disk Drive for Backup (A-Z)

In this field you can enter any valid drive name in your system; for example, "C" to back up your first hard disk drive, or "A" to back up a diskette in floppy drive A.

Do You Want to Append or Overwrite the Tape (A/O)

Whenever you commence a backup operation, the tape software will begin by reading your tape to check for existing data.

If you choose Append, the tape software will advance the tape to the end of any existing data, then add your new data on at the end. This will prevent you from losing any data already on the tape. However, if the tape is nearly full, you may have to wait for a few minutes to skip past all the existing data, and may find that you need additional tape(s) to hold all your new data.

If you choose Overwrite, the tape software will record your new data starting from the beginning of the tape.

WARNING: If you choose Overwrite, ANY AND ALL existing data on the tape will be DESTROYED. Even if your new data does not fill up as much tape as the previously existing data, once you overwrite the beginning of the tape, none of the previous contents will be recoverable.

4.2: IMAGE BACKUP - ADVANCED FEATURES

The fields presented by the Advanced User Interface menu for Image Backup are as follows:

Select Disk Drive for Backup

In this field, you can enter a logical drive name (any letter from A to Z that is valid in your system), or a physical drive number.

By entering a letter, you select a logical image backup. DOS will read the data from your hard disk drive and relay it to the tape software for backup. The advantage of this mode is that any legal DOS disk can be backed up, including, for example, a DOS partition from a very high-capacity hard disk, a RAM disk, a floppy diskette, or an ordinary DOS hard disk drive.

If you enter a drive number (1 or 2), the tape software itself will perform a physical image backup, which is an exact bit-for-bit copy of the hard disk data, without going through DOS. The advantage of physical image backup is that, because it does not require DOS to read or interpret the data on your hard disk drive, you can back up virtually any hard disk drive in your computer. This includes, for example, disk drives that are wholly or partially dedicated to non-DOS

partitions, disks that may be damaged, disks that exceed the DOS 32MB limitation (if you want to back up the whole disk as one dataset), and ordinary DOS hard disk drives. The limitation is that physical image backup may be performed only on an entire hard disk drive; not on a floppy drive, a RAM disk, or only part of a hard disk drive.

Whole Disk/DOS Data Only

If your hard disk is not full of data, you can reduce your backup time by entering "D" (for DOS) in this field. The tape drive will start from the beginning of the hard disk and then stop backing up when it reaches the end of the DOS data on the drive, instead of continuing to back up empty sectors or non-DOS partitions.

If you have been using your disk drive for a long time, and especially if you have often deleted some data to make room for more, data may be scattered throughout all the sectors of your hard disk drive, instead of being concentrated at the beginning. In this case, even if you enter "D" to back up DOS data only, the tape software may need to read almost the whole drive in order to come to the last sector that contains data.

Enter "W" (for Whole Disk) if you want to back up the entire drive, regardless of empty space.

Dataset Label

Each backup that you perform creates one dataset, or body of information, on the tape. This field lets you label the dataset with any name you want, up to 11 characters.

We recommend that you give each dataset a name that will remind you of the data contained in it: for example, "LETTERS-87."

Tape Number

You must assign an identification number to each individual tape cartridge or cassette you own. This number will be recorded on the tape header and will stay the same (unless you change it), independent of what data is recorded on the tape.

Enter "0" in this field to default to the tape number already recorded on the tape.

If there is no number already recorded, (for example, if the tape has just been erased by a tape test) you will be prompted to enter a non-zero tape ID.

If you enter a non-zero number different from that already recorded on that tape, the tape software will alert you to the discrepancy before it begins backing up, and will warn you that you may be using the wrong tape.

Tape Label

In addition to an identification number, you can record a label (again, up to a maximum of 11 characters) on the header of each tape. Like the dataset label, we recommend that you choose tape labels that mean something to you - for example, "CATHY".

Starting Dataset Number

This is comparable to the "Append or Overwrite" field presented by the easy user interface for Image Backup.

If you want to append this new data to the end of any data that may already exist on your tape, enter "0." There is no such thing as dataset 0, so the software will default to the first available dataset number. (For example, if there are already two datasets recorded on your tape, the software will make this new data be dataset 3.) Alternatively, you can enter a very large number - for example, 9999 - and the software will again default to the first available dataset number on the tape.

If you want to overwrite the tape from the beginning, enter 1. Your new data will then become the first dataset on the beginning of the tape.

WARNING: If you choose to start from dataset 1, ANY AND ALL existing data on the tape will be DESTROYED. Even if your new data does not fill up as much tape as the previously

existing data, once you overwrite the beginning of the tape, none of the previous contents will be recoverable.

On cartridge tape drives (but not cassette tape drives) you can start overwriting from a point in the middle of the existing data. For example, if you already have five datasets recorded on the tape, you can enter 3 as your new starting dataset number. The tape software will then skip past the existing datasets 1 and 2 on your tape, and record your new data starting as dataset 3.

WARNING: In the above example, the data in the existing datasets 1 and 2 would remain intact, but the old datasets 3, 4, and 5 would be destroyed. When you overwrite a tape starting in the middle, the data before the point of interruption is unaffected, but the data beyond that point is all invalidated.

4.3: FILE BACKUP - EASY USER INTERFACE

File backup lets you select some (or all) of your directories and/or files to be backed up, instead of doing the whole disk. This option can save you time when you don't need to back up everything on your disk drive. We also recommend that you use File Backup for transferring data between drives of different characteristics - different capacity, number of sectors per track, etc.

Data backed up by File Backup can be restored only by File Restore.

To perform a File Backup, follow these steps:

1. From the tape software Main Menu, select and execute File Backup.
2. On the File Backup menu, fill in or confirm each field, as described below.
3. Press <F8> to execute the backup.
4. We recommend that you regularly perform a File Compare, following File Backup, especially when dealing with extremely valuable data.

File Specification

In this field, type the DOS pathname of the file(s) or directory(ies) you want to back up. Just as in normal DOS operation, you may use the variable "?" and the wildcard "*" in the filename or extension of your path, but not in any directory name. For example, if you installed your tape software in the default directory C:\EVTAPE and wanted to back up only the help files of the tape software, your pathname would be:

C:\EVTAPE*.HLP

For another example, if you wanted to back up only those files that make up the tape software Main Menu, your pathname would be:

C:\EVTAPE\TAPE.???

If you need more information on the DOS directory structure and the syntax of pathnames, please refer to your DOS manual.

Include All Sub-Directories? (Y/N)

If you type Y in this field, the backup will include not only the files in the directory(ies) specified in File Specification, above, but also any and all files in sub-directories below them.

For example, if you leave the default file specification C:*.*, and enter N in this field, you will get only those files contained in the root directory of drive C:. Any and all files in sub-directories of drive C: will be omitted. If you type Y, then you will get every file on drive C: no matter how many directory levels deep it is.

Do You Want to Append or Overwrite the Tape? (A/O)

Whenever you commence a backup operation, the tape software will begin by reading your tape to check for existing data.

If you choose Append, the tape software will advance the tape to the end of any existing data, then add your new data on to the end. This will prevent you from losing any data already on the tape. However, if the tape is nearly full, you may have to wait for a few minutes to skip past all the existing data, and may find that you need additional tape(s) to hold all your new data.

If you choose Overwrite, the tape software will record your new data starting from the beginning of the tape.

WARNING: If you choose Overwrite, ANY AND ALL existing data on the tape will be DESTROYED. Even if your new data does not fill up as much tape as the previously existing data, once you overwrite the beginning of the tape, none of the previous contents will be recoverable.

4.4: FILE BACKUP - ADVANCED FEATURES

In the advanced user interface, you can create up to 99 individual pages of file specifications. Notice that the file specification window is marked SPEC 01 of 01. After you type in your first pathname, you can press the function key <F5> to add a second blank file specification page, which will

be marked SPEC 02 of 02. Repeat this process if necessary to create up to 99 separate pages. Each page may have its own set of parameters (see System Files through Include/Exclude, below), independent of the other pages. Press <PgUp> and <PgDn> to view your file specification pages, and <F6> to delete a page if necessary. All the file specification pages backed up at one time will constitute a single dataset on the tape.

The fields displayed by the advanced user interface for File Backup are as follows:

File Specification

In this field, type the DOS pathname of the file(s) or directory(ies) you want to back up. Just as in normal DOS operation, you may use the variable "?" and the wildcard "*" in the filename or extension of your path, but not in any directory name.

For more information on the DOS directory structure and the syntax of pathnames, please refer to your DOS manual.

System Files

DOS and other operating systems store critical program code in system files, which are treated differently from the normal files on the disk.

Enter Y in this field if you want to include these files, or N to exclude them from the backup.

NOTE: For backing up files across a network it is often necessary to exclude some system files. For complete information about network backups, please refer to Appendix A.

Hidden Files

A hidden file is any file that exists on the disk but is not displayed by the DOS command DIR. For example, the DOS system files are hidden files.

Enter Y in this field to include hidden files, or N to exclude them from the backup.

Read-Only Files

Some software protects vital information from being accidentally altered, overwritten, or deleted from the disk, by storing that information in files marked read-only.

Enter Y in this field to include read-only files, or N to exclude them from the backup.

Sub-Directories

If you enter N in this field, only the file(s) included in the File Specification (see above) will be backed up. Any files contained in sub-directories below the specified directory(ies) will be excluded.

If you enter Y, all the files in sub-directories of the specified directory(ies) will be included in the backup.

Modified Files Only

Each file on your hard disk has a special archive bit, which is set to 1 when the file is created or modified. The DOS BACKUP utility, and certain other backup programs, will clear this bit back to 0 when they back up the file. This makes it simple to back up only those files which are new or different since the previous backup.

Normally the Excel Streaming Tape software disregards the status of the archive bit on each file, so this field defaults to N. If you want to back up only those files whose archive bits are set to 1, then change this field to Y.

Preserve Archive Bit

(See above for description of archive bit.) If you want the tape software to clear the archive bit of each file it backs up (in other words, behave like the DOS BACKUP utility in this respect), then change this field to N. Note that this will have the effect of changing slightly the bit pattern on your disk; if you are going to follow this backup with a file compare, we suggest that you do preserve the archive bit.

Starting Date

Each DOS file on your disk is tagged with the date on which it was last created. If you want to back up (or exclude from

backup) only files created during a certain time (for example, last month), then enter the start date in this field, using the format MM-DD-YYYY. Starting Date must be no later than Ending Date (below).

Ending Date

This field closes the time period begun in the previous field Start Date (see above). The format is the same. Ending Date must be no earlier than Starting Date.

NOTE: If your system is not equipped with a clock/calendar and you do not conscientiously answer the system time and date prompts at boot-up, many of your files may reflect the default date 01-01-1980. In this case, we recommend that you not use the starting and ending date fields to select files for backup.

Include/Exclude

If you enter I in this field, then the file(s) specified by all the other fields on the File Specification page will be backed up. If you enter E, then all those files will be excluded from the backup.

If you exclude a certain set of files - for example, *.DOC - that does not mean that all the other files will automatically be included. To back up everything except that set, you must Include everything on a previous page and then Exclude that set of files on a subsequent page.

For example, suppose you want to back up all the files on drive C: except for those in the directory \OBSOLETE. You could use two file specification pages to accomplish this: The first would specify C:*.*, with Include/Exclude set to I. On the second page, you would specify C:\OBSOLETE*.*, with Include/Exclude set to E.

4.5: FILE BACKUP - OPTION MENU

From the Tape Specification menu, press <F3> to view the File Backup Option Menu. These options let you create a log, listing the files that are specified for backup. The fields in this menu are as follows:

Log Filename

If you want to create a log of each file you back up, enter the pathname and filename of the log. For example, the default entry saves the log on your hard disk drive under the filename C:\EVTAPE\FBACKUP.LOG. If you prefer to dump the log directly to your printer, enter \PRN as your log filename.

NOTE: We strongly recommend that you save your log file to a different disk (for example, A:\FBACKUP.LOG).

Log Tape Files During Advance

If you want the log to be created while the tape is advancing, enter Y in this field. This will slow down the advancing somewhat.

Log Tape Files During Backup

If you want each file to be logged as it is actually backed up, enter Y in this field. This will make the backup a little slower.

Log Files Only if Error

If you enter Y in this field, only those files which experience an error in backup will be logged. All files that are backed up normally will be skipped.

Pause on Open File Error

If you enter Y in this field, then the tape software will pause when it encounters an open file error. At that time you will be prompted to continue or abort the operation.

Pause on Read File Error

If you enter Y in this field, then the tape software will pause when it encounters a read file error. At that time you will be prompted to continue or abort the operation.

Back Up Files in Original Order

Enter Y in this field if you want your files to be backed up in the sequence displayed by the DOS command DIR. This may be necessary in conjunction with some network backup applications.

4.6: REFERENCE INFORMATION - BACKUP

To an Everex Tape Software user, there are three kinds of disk drives:

Physical Disk Drive

A physical disk drive is a local fixed disk drive that is connected to the I/O bus of the computer. A physical disk drive can be partitioned into as many as four partitions, each of which may be in DOS or non-DOS format.

The user refers to physical disk drives using drive number 1 or 2.

Excel Streaming Tape Software can backup/restore the PHYSICAL IMAGE of ANY physical disk drive which has DOS, XENIX, Novell File Server, or any type partitions.

DOS Logical Disk Drive

A DOS logical disk drive is a DOS block device driver that presents a particular data source to DOS in the DOS disk format.

The data source of a DOS block device driver can be:

- The entire image of a local fixed disk drive
- A partition of a local fixed disk drive
- A diskette in a floppy drive

-
- Random access memory (RAM disk)
 - Anything

The user refers to DOS logical disk drives using drive names (A, B, ..., etc).

Excel Streaming Tape Software can backup/restore a DOS logical disk drive using LOGICAL IMAGE or FILE-BY-FILE.

Mapped Disk Drive

A mapped disk drive maps a drive name to a sub-directory tree of:

(1) A logical disk drive using the DOS SUBST command;

or

(2) A network disk volume.

Although a mapped disk drive can be referred to by a drive name, it is not in the complete DOS disk format. Therefore, it is not possible to perform a sector read/write or DOS CHKDSK on a mapped disk drive.

Excel Streaming Tape Software can backup/restore a mapped disk drive using FILE-BY-FILE.

Chapter 5: Restore

5.1. IMAGE RESTORE

WARNING: IMAGE RESTORE WILL OVERWRITE YOUR WHOLE DRIVE. IF YOU JUST WANT TO ADD DATA TO THE DATA ALREADY ON THE TARGET DRIVE, USE FILE RESTORE.

To perform an image restore, follow these steps:

1. From the Main Menu, choose Image Restore.
2. Fill in the fields on the Image Restore menu as described below.
3. Press <F8> to execute the restore.

Disk Drive Name or Number

This field describes the target drive to which your data will be restored.

If you used the easy user interface when doing this backup, or if you specified logical image backup in the advanced user interface, then you must use a drive letter (for example, C:) in this field.

If you did the backup in the advanced user interface and specified physical image, then you must use a drive number (1 or 2) in this field.

From Dataset Number

If you know the number of the dataset that contains the disk image that you are restoring, enter it in this field. (For example, if you overwrote from the beginning of the tape when you did this backup, then your data is in dataset 1.)

Or Select Dataset by Label

Enter the label of the desired dataset in this field.

You don't have to fill in both From Dataset Number and Or Dataset Label; one of the two is sufficient.

If you don't remember either the number or the label of the dataset you want, press <F3> to display this information for each dataset in turn.

5.2: IMAGE RESTORE - ADVANCED FEATURES

In addition to the fields listed above, the image restore advanced user interface includes the following optional fields:

Scan Target Disk for Unmarked Bad Sectors

When you first installed and formatted your hard disk, you should have entered the bad track map to mark off those sectors identified as bad during factory testing. However, as you use your hard disk, it may develop additional bad sectors. Enter Y in this field if you want the tape software to scan

the hard disk drive for unmarked bad sectors, and mark them off before restoring data. Since the software scans the whole disk, the restore procedure is slowed down.

Bad Sector Reallocation for DOS Image

Enter Y if you want the tape software to reallocate data away from bad sectors on the target disk. Bad sector reallocation is possible only under the following circumstances:

- You have a DOS file system
- The target drive is the first or only partition on your disk. If you are using a DOS partitioning utility (for example, EVERSTORE from Everex), you can perform bad sector reallocation only on the first logical drive.
- There are enough good sectors available to contain the reallocated data.

Retain Bad Sector Marks in Target DOS

DOS keeps track of your bad sectors in a File Allocation Table, or FAT, on each disk drive. However, in the FAT, if one sector is known to be bad, that whole cluster will be marked off and not used.

When you enter Y in this field, the Image Restore program will remember two types of bad sectors on the target disk:

-
1. Those bad sectors marked by DOS in the FAT, and
 2. Bad sectors found by the Image Restore program during the disk scan.

If you enter N in this field, the Image Restore program will remember only bad sectors found during the scan.

Retain Bad Sector Marks in Source DOS

If you leave this field set to Y, then the tape software will add the bad sector marks from the source DOS to the File Allocation Table of the target DOS. Although this may result in a small amount of wasted disk capacity, we recommend that you do leave the field set to Y: If you had any copy-protected software hiding its security information in fake bad sectors on the source disk, and you change these sectors to good sectors on the target disk, then that software won't work.

Enter N in this field only if you are sure you had no copy-protected software and need to maximize your disk capacity as much as possible.

Pause Before Scrolling the Reallocated File List

If bad sector reallocation is enabled, then when the image restore is completed, the tape software will display a special window and scroll all the reallocation information through it. Once a file is scrolled out of this window, you cannot scroll it

back. Therefore, if you really want to read the reallocation information at the end of the restore, you should enter Y in this field; otherwise, enter N.

Re-Boot the System after Restoring Physical Disk

When you do a physical image restore (designated by entering a drive number 1 or 2 in the Disk Drive Name or Number field, above), the tape software writes information directly to the hard disk drive without going through DOS. Since this information may have changed since you performed the backup, and since DOS will initialize and check this only when you boot up, we strongly recommend that you choose to re-boot the system following a physical image restore.

5.3: FILE RESTORE

To perform a File Restore, follow these steps:

1. From the Main Menu, choose File Restore.
2. On the File Restore menu, fill in or confirm all the fields as described below.
3. Press <F8> to execute the restore.

There is no advanced user interface for File Restore.

Dataset Number

In this field, enter the number of the tape dataset from which you want to restore files.

If you don't remember the number, enter a very large number (e.g. 9999) and then the exact dataset label in the next field.

If you leave Dataset Number set to 0 and Dataset Label blank, then the software will search every dataset on the tape and restore any matching file(s) from all of them.

Dataset Label

Enter the label of the dataset from which you want to restore file(s). Use uppercase and lowercase letters just as they were entered at backup time. The tape software will search for the first dataset that matches either the number or the label specified.

Restore To:

In this field, enter the directory pathname to which you want to restore the specified file(s). This directory must already exist. If you enter Y in the field Include Sub-Directories, below, then the tape directory structure will be inserted under the existing disk structure.

For example, if your tape dataset contains the path C:\MANUALS\TAPE, and you restore this data to the path D:\FINISHED, then the resulting data will be under the path D:\FINISHED\MANUALS\TAPE.

Replace Target File if it Exists

Enter Y in this field if you want the tape software to overwrite existing file(s) on the disk with their matching file(s) on the tape. Enter N if you want to preserve the original contents of all files that already exist on the disk.

Turn On Listing During Restore

Enter Y if you want to watch the restore taking place. This will slow down the operation somewhat. For maximum speed, enter N. You will be able to toggle this display ON and OFF using the function keys <F5> and <F6> during the restore operation itself.

File Spec:

Note that you can create up to 50 individual file specification pages if you need them, by pressing <F5> to insert additional pages.

Enter the full DOS pathname of the file(s) you want to restore. You may include a drive letter at the beginning if the specified dataset contains data from more than one drive. As always in DOS, you may use the wildcards * and ? to match

multiple files within a directory, but not in the directory path itself.

If you want to restore files to the original directory from which they were backed up, then leave this field blank.

Include Sub-Directory Files

If you enter Y, then all the matching files in all the sub-directories under the specified directory will be restored; the tape directory structure will be inserted under the existing disk directory structure.

For example, if your tape dataset contains the path C:\MANUALS\TAPE, and you restore this data to the path D:\FINISHED, then the resulting data will be under the path D:\FINISHED\MANUALS\TAPE.

If you enter N, then only those files from the specified directory itself will be restored.

System Files

Enter Y if you want to include the DOS system files in the restore operation.

Hidden Files

Hidden files are any file(s) not displayed by the DOS command DIR. Frequently, security files created by copy-protected software are hidden. Enter Y to include these files in the restore or N to exclude them.

Read-Only Files

To prevent you from accidentally overwriting valuable data or program code, some software marks its most crucial file(s) as read-only. Enter Y to include these files or N to exclude them.

Starting Date

Each file on a DOS disk is tagged with the time and date of its creation or last modification. If you want to restore only those files that were created or modified after a certain date, then enter that date in this field, using the format MM-DD-YYYY. Starting Date must be no later than Ending Date (see below).

Ending Date

If you want to restore only those files created or modified before a certain date, enter that date in this field, again using the format MM-DD-YYYY. Ending Date must be no later than Starting Date (see above).

Include/Exclude

If you want to include in the restore those files defined on the File Spec page, enter I.

If you want to exclude the specified files, enter E. Note that excluding certain files does not have the effect of including all the other files.

Chapter 6: Compare

The tape software has image and file compare operations, which determine whether the disk data and the tape data are a perfect match. **THE ONLY WAY TO BE ABSOLUTELY CERTAIN OF YOUR BACKUP IS TO PERFORM A COMPARE.** Compares should be performed immediately after backup (or restore) operations, because if the hard disk is used at all in between the two operations, then some part of its data is likely to be changed and a miscompare is likely to result.

Two features of File Backup - Advanced User Interface should not be used when planning a File Compare:

1. Leave the field "Preserve Archive Bit" set to Y. If you change it to N, then the archive bits of the each new or modified file will be altered between backup and compare.
2. If you use the file logging function of the File Backup Option Menu, save your log file on another disk (for example, A:\FBACKUP.LOG), not on the disk that is being backed up. The creation of a new log file on the disk will result in a miscompare error.

The image and file compare program command syntaxes are identical to those of the image and file restore, with the sole exception that they do not write anything on your disk. Therefore, you can use the appropriate Restore section of this manual for instructions on performing a compare. The menus, fields, and help screens will all be the same, except that the

word "restore" is replaced with "compare," and there is no advanced user interface for an image compare.

If a discrepancy is discovered between the data on the disk and tape, a miscompare error message will appear. You can continue the operation by pressing <Enter>. If this happens, we recommend the following steps:

1. Repeat the backup operation, using a different tape.
2. Repeat the compare operation. If the miscompare error happens again, we recommend that you stop using the tape subsystem and contact your dealer for professional service.

Chapter 7: Goodies

In addition to its main backup, restore, and compare functions, your tape software has several more features that are useful in certain situations.

7.1: WINDOW MANIPULATION

The tape software organizes its display into multiple windows on your screen. Each of these is marked with a window ID, which is a single-digit number in the upper left-hand corner. Of all the windows on the screen, only one can be active - actually communicating with you - at one time. The active window ID number is displayed in reverse video in the middle of the top row of the screen.

Normally, the way the windows come spread out on the screen is best for most users. If you prefer to move them on top of each other (this is called "nesting") or otherwise rearrange them, you can do so by pressing <Scroll Lock>, and then using your cursor keys (which are in the numeric keypad). To return to normal operation, press <Scroll Lock> again to toggle it OFF.

With two or more windows on top of each other, the screen becomes similar to a desktop with several sheets of paper on top of each other. You can "push" the top window to the bottom of the stack by pressing <Ctrl-P>, and can repeat this as often as you want to cycle through all the visible windows on one screen. Alternatively, if you know what window you want to place on top, press <Alt> plus that window ID number - for example, <Alt-1> or <Alt-3>.

7.2: INPUT REDIRECTION

You can use the input redirection capability of DOS to set up unattended tape operations. Using exact keystroke representations, you can write a batch file containing the complete sequence of commands you want. Once the batch file is executed, the program will run by itself, with no further operator attention required.

Most of the keys on your keyboard are represented in the computer by a corresponding ASCII character code. However, certain nonprintable keys (for example, the function keys) do not have ASCII codes and are therefore represented by escape codes.

Each escape code consists of a semicolon (;) followed by an ASCII character. The most commonly used of these is ;M, which represents a carriage return.

TABLE 1
ESCAPE CODES

Keyboard Function		Escape Code	Keyboard Function		Escape Code
	;	;;	Page Up		;<
F1		;1	Page Down		;>
F2		;2	Cursor Right		;r
F3		;3	Cursor Left		;l
F4		;4	Cursor Down		;d
F5		;5	Cursor Up		;u
F6		;6	Del		;b
F7		;7	Print Screen		;p
F8		;8	Home		;h
F9		;9	End		;e
F10		;0	Switch to Keyboard		;k
Insert	Off	;i0	Alt	Up	;a0
	On	;i1		Down	;a1
Caps	Off	;c0	Ctrl	Up	;x0
	On	;c1		Down	;x1
Num Lock	Off	;n0	Left Shift	Up	;;{0
	On	;n1		Down	;;{1
Scroll Lock	Off	;s0	Right Shift	Up	;;}0
	On	;s1		Down	;;}1

The following are standard ASCII control codes:

Keyboard Function	Escape Code	Keyboard Function	Escape Code
BEL	;G	BS	;H
HT	;I	LF	;J
VT	;K	FF	;L
CR	;M	DC1	;Q
DC2	;R	DC3	;S
DC4	;T	ESC	;[
CR	;M		

ESCAPE CODES (continued)

Keyboard Function	Escape Code	Explanation
Qualifiers	;q00000000	where 00000000 are the 8 bits defining the 0 or 1 status of above 8 keys in the order listed above.
Omit Characters	;o00	where 00 is a 2 digit decimal value of the number of characters to omit next.
Ignore to end of line	::	Ignore all characters up to and including the next CR or LF.
Key Delay	;t00000000.00	where 00000000.00 is a decimal number specifying the number of seconds delay between each key input. The first seven digits are optional while the digit before the decimal and the 2 digits after the decimal are required.

For an example of input redirection, see DEMO below.

7.3: DEMO

To run a self-demonstration of the tape software, type:

```
tape<demo <Enter>
```

The program will run from the input file DEMO, which is provided with the tape software.

7.4: CHECK TAPE FOR BATCH FILES

A program called CHK_TAPE is included, mainly for the benefit of users who write their own batch files.

This program checks to see if the tape is mounted and writable. It prints a message and returns an error level reflecting the tape's condition.

The error levels returned by CHK_TAPE are:

- 0 Tape system is ready and tape is writable
- 1 Command syntax error
- 2 Tape is write-protected
- 3 Tape is not mounted or power is not on
- 4 Tape system error

The syntax of CHK_TAPE is:

CHK_TAPE [t] [c] [m]

where:

t = Do not print program title

c = Do not print tape configuration information

m = Do not print tape status message

A sample batch file MOUNTAPE.BAT is included which shows how to use the CHK_TAPE program.

7.5: MENCOLOR

This program is provided for users who have composite monitors which cannot display certain character attributes. The Menu and Help windows of the tape software are stored in files with the extensions .MEN and .HLP respectively. MENCOLOR will read in these files, convert the windows to a monochrome color scheme (or the colors of your choice) and write the results back to the original files.

WARNING: MENCOLOR will overwrite your original files! Before you run MENCOLOR, save a backup copy of these file(s) somewhere else!

To convert all your menu and help windows for use with a composite monitor, change to your tape software directory and type:

```
MENCOLOR *.MEN *.HLP <Enter>
```

The syntax of the MENCOLOR command is:

```
MENCOLOR [-COLORTAB] FILE1 [FILE2...]
```

COLORTAB is the name of the color table file, which contains the desired color mapping in the syntax OLD-COLOR=NEW-COLOR. OLD-COLOR and NEW-COLOR are represented by their hexadecimal color codes. If no COLORTAB is specified, a default monochrome mapping scheme is used.

FILEn is the full path and name of the window file(s) to be converted.

7.6: EVERSONG

From the Main Menu, press the key "s" to make the software play a series of three songs. Press "s" again to stop.

7.7: ESCAPE TO DOS

At any point in the tape software you can press <Ctrl-D> to make the tape software suspend its operation and return you to your DOS prompt. You can then enter any DOS command(s). When you are ready to resume the tape operation, type:

exit <Enter>

We recommend that you not use this feature in the middle of a restore operation.

7.8: TOGGLE CLOCK DISPLAY

Normally the tape software displays the time and date (as read from the system clock) in the upper right hand corner of the screen. You can toggle this display ON and OFF by pressing <Ctrl-K>. The benefits of turning OFF the clock are:

1. Reduces screen snow and noise if your display card is not flicker-free
2. Speeds up the tape operation slightly

If you have disabled the clock interrupt vector then the clock display will always be off.

7.9: SCREEN REDRAW

If you see any junk on your screen, press <Ctrl-R>. This will re-draw the screen and eliminate the junk.

Chapter 8: How to Backup a Failing Hard Disk Drive

A major purpose of streaming tape backup is to prevent data loss in the event of a complete (or partial) hard disk failure. If you have any reason to suspect a problem with your hard disk drive, we strongly recommend that you follow these steps immediately:

1. **DO NOT FORMAT YOUR HARD DISK**, restore data from a previous backup, or attempt any other sort of disk repair until you have followed Steps 2-6, below.
2. Locate, label, and write-protect your most recent backup tape. Figures 1 and 2 show you how to write-protect a cartridge and cassette tape respectively:

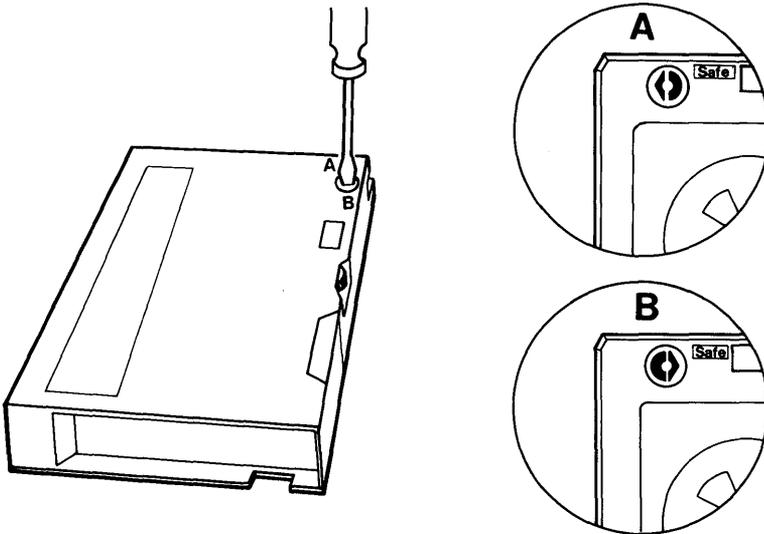


Figure 1: Write-Protecting a Cartridge Tape

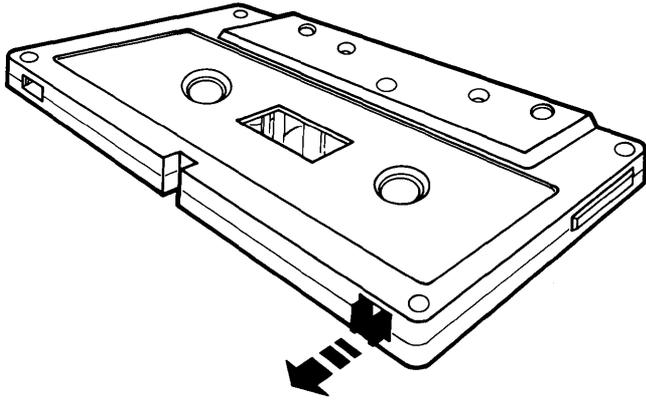


Figure 2: Write-Protecting a Cassette Tape

3. Perform a complete file-by-file backup of the hard disk drive. If necessary, you can boot the computer and run the tape software from diskettes. (If you use the Advanced User Interface mode, leave Preserve Archive Bit set to Y, and if you use the File Backup Option Menu, be sure to create your log file onto another disk before you start to back up.) Use a tape that is not part of your regular backup rotation.

Label the tape clearly to prevent its accidental re-use.

4. Perform a physical image backup of the hard disk. Use a separate tape that is not part of your regular backup rotation. When finished, write-protect and label the tape.
5. Perform a complete file-by-file compare, using the tape backed up in Step 3, above.

-
6. Perform an image compare, using the tape backed up in Step 4 above.
 7. If possible, restore your files to another hard disk drive in another system.
 7. Proceed with whatever disk repair or replacement steps are necessary. Again, we recommend that you NOT re-format your hard disk except as a last resort.
 8. When you have a working hard disk in your system, restore your data and resume using the system.

NOTE: If you are having a hard disk problem and are not sure what to do, we strongly encourage you to seek help from your Everex dealer, or from our Technical Support staff, rather than risk losing your valuable data. Please do nothing that may aggravate the problem, or delay until it is too late for us to help you.

Appendix A: Using Excel Streaming Tape in a Novell Network

Because of the complexity of the Novell network system, we must assume that you are already familiar with the terms and concepts of the Novell security. If not, please refer to the Novell manual before reading this Appendix.

Everex provides a special utility program NETINFO.EXE, for our streaming tape users who are also Novell network users or supervisors. NETINFO has three main functions:

- Each user can create a customized file FBACKUP.CFG which lists the inaccessible files on your drive(s) for automatic exclusion during file-by-file backup.
- The supervisor can copy the bindery files into a regular data file for backup and reconstruction. Bindery files contain part of the network security information and are normally inaccessible.
- The supervisor can also gather all the trustee information into a file for backup. Trustee information is the remainder of the network security system not stored in bindery files.

NETINFO.EXE works entirely within the existing confines of the network security system. No one can use NETINFO in conjunction with any file or directory to which he or she does not normally have access. Therefore, in order to perform a complete file server hard disk backup, you must log in as the Supervisor (or have security equivalence to the Supervisor), so that you can access all the directories and files.

A.1 HOW TO BACK UP NOVELL NETWORK FILES AND SECURITY INFORMATION

For a regular network user, it should suffice to back up only his/her own data and program files, excluding the Novell security information. Before file backup, run:

NETINFO -f

to create the file FBACKUP.CFG to skip the inaccessible files on your drive(s).

A network supervisor can perform all three functions listed above, by running:

NETINFO -fcg

- c Copy all bindery files into a new file NETINFO.DAT. (NOTE: Make sure that there is no activity on the network before you run this.)
- g Gather the network security files into the file NETINFO.DAT.

A.2 SYNTAX OF NETINFO

The syntax of the program NETINFO.EXE is:

NETINFO [FILE] [-f|c|b|g|d|r|l] DRIVE: [PATH] [/s|/f|/v] ...] ...

where:

FILE The output file of the -c and -g options. This is also the input file of the -b, -l, and -r, options. If FILE is not specified, the default filename NETINFO.DAT is used.

DRIVE Any network drive or volume name (e.g. F, G, SYS, etc.)

PATH Network directory path name.

-f Creates the file FBACKUP.CFG to exclude inaccessible bindery and system files from backup of network mapped drive

-c Copies bindery files into FILE

-g Gather security files of network directory path into FILE

-b Restores bindery files from FILE

-r Restore security files of a network directory path from FILE

-
- d Display security files of a network directory path

 - l List security files of a network directory path from FILE

 - /s Include all subdirectories of specified directory path

 - /f Include all files under specified directory path (and all files of subdirectories if /s is also specified). If /f is not specified, NETINFO stops at the directory level and does not process individual file information (e.g. owner ID, creation time and date, etc.)

 - /v Include the mapped volume information of the specified network drive

NOTE: For an input drive, mapping is included. If the input is a volume, mapping is not included.

A.3: NETINFO FUNCTION DESCRIPTIONS

-f

Creates the file FBACKUP.CFG for the tape software to exclude inaccessible bindery files and system files.

FBACKUP.CFG excludes the following files:

```
X:\DIRSTAMP.SYS
X:\SYSTEM\NET$MSG.SYS
X:\SYSTEM\NET$SPL.QUE
X:\SYSTEM\NET$BIND.SYS
X:\SYSTEM\NET$BVAL.SYS
X:\SYSTEM\NET$PASS.SYS
X:\SYSTEM\NET$GRP.SYS
```

where X is the network drive name.

If you do not specify a DRIVE name, -f processes all the network mapped drives by default.

Example: NETINFO -f F: G:

-c

Copies bindery files into new file NETINFO.DAT (or other filename specified by user). The bindery files for Advanced NetWare are:

SYS:\SYSTEM\NET\$BIND.SYS
SYS:\SYSTEM\NET\$BVAL.SYS

and for NetWare are:

SYS:\SYSTEM\NET\$PASS.SYS
SYS:\SYSTEM\NET\$GRP.SYS

Example: NETINFO -c

-b

Restores bindery files from FILE.

NOTE: We strongly recommend that you restore bindery files before directories or file security information, because the system security files is kept in bindery files and may have been changed since you performed the backup. In addition, because the bindery files contain the physical network address, the hardware that you use to restore must be set to the same address as the hardware you used to back up. (Some brands of the network hardware supported by Novell do not have physical network addresses at all.)

-g

Gathers security files of a network directory path into FILE. The path specification is not necessary. If no path is specified by the user, NETINFO will gather all the security files of every path, starting from the root directory of each volume in the file server. For a user-specified network directory path, the three options /v, /s, and /f can be used to gather volume, subdirectory and file security files.

NETINFO.EXE also records the statistics information for each volume into FILE when you gather security information. This includes volume name, sectors per block, the number of available blocks, the number of unused blocks, the number of directory entries, and the number of unused directory entries. This information will be useful when you want to reproduce the exact size and directory entries of volumes so that the file server will have the exact volume spaces as it did before backup.

Example: NETINFO -g SYS:\s/f/v VOL1:\s/f/v

-r

Restore security files of a network directory path from FILE back to the corresponding network directory path. If there is no path specified, it restores all the security files. If the network directory path does not exist in the network, it prompts you for the creation of that path and then restores security files to it.

Example: NETINFO -r SYS

-d

Displays security files of a network directory path specified by the user. If no path is specified, it displays all the security files for each volume in the file server.

-l

List security files of a network directory path from FILE. If no directory path is specified, it lists all security files.

A.4: HOW TO RESTORE NOVELL NETWORK FILES AND SECURITY INFORMATION

Before you can restore data from tape, the target hard disk must be up and running according to Novell's instructions. You must restore to the same file server name that was backed up.

Excel Streaming Tape software backs up network data according to mapped drive names or directories. It does not see the network volume structure. Therefore, if you have backed up a disk and later want to restore data to its original volume, you must first re-create the volume structure and drive mapping that existed at the time of backup.

For example, if your file server contains a volume VOL1 and you want to back up the entire volume, you might first map drive letter G: to VOL1. Then, when setting up your file-by-file backup, you would specify G:*.*, with sub-directories

included. As a result all the files on VOL1 would be recorded on the tape as drive G:.

If you later wanted to restore this data to its original volume, you would again map drive G: to volume VOL1 and proceed to restore the tape data to G:.

If, on the other hand, you later wanted to restore the tape data to a different volume VOL2, you would map drive G: to VOL2, and again proceed to restore the tape data to G:.

When the new hard disk is up and running, log in as the Supervisor (or with security equivalence to the Supervisor) from a workstation. Re-map the network drives that existed at the time of backup. Restore all the data and program files from your backup tape to the hard disk. Then run:

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NETINFO -br
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to reconstruct the security information.

Appendix B: Care & Rotation of Tapes

Streaming tapes are a magnetic medium, similar to diskettes. To protect and prolong their useful life, many of the same precautions should be observed.

Store your tapes in their original boxes, and keep them away from the following:

- Direct sunlight or ultraviolet light
- Magnetic fields
- Excessive heat or humidity
- Dust and smoke
- Mechanical stress or impact

If a tape has been unused for a long time, you might need to retension it before you can successfully read or write data.

For maximum data security, as well as long-term record keeping, Everex strongly recommends a ten-tape rotation schedule. Like everything else, the recording ability of a tape may decrease with use. By consistently rotating the tapes, you insure that no tape is inferior to the others in stock. If you follow the tape rotation schedule attached below, you will have tapes available at intervals throughout a three months period; this can prove invaluable if a previously undiscovered error is found in your data.

You should perform a complete file-by-file and/or image backup at least once a day, or more often if special circumstances warrant. You should have ten sets of tapes, each set sufficient to hold one day's backup. (For example, if

you have a 60MB tape drive and only one 20MB hard disk, one tape is sufficient; if you have an 80MB hard disk, you need two tapes per tape set.) Never record more than one day's backup on one tape set.

Number your ten tape sets from 1 through 10. (If you use more than one tape per set, number the individual tapes 101, 102, ..., 201, 202, ... etc.) Following this schedule, do a complete backup every weekday, using the tape number indicated on the schedule. Pull out these pages and photocopy them as often as necessary. Each day, the user who performs the backup should fill in the date and his/her initials, to keep a running record of backups. Note that on each page, you should work down the left column for the first four weeks, then down the right column for the next four weeks, then continue to the next page. The schedule forms a loop: when you reach the bottom of page 5, start over on page 1.

PAGE 1

TAPE		USER		TAPE		USER	
DAY	SET	DATE	INIT	DAY	SET	DATE	INIT
MON	1	_____	_____	MON	2	_____	_____
TUE	2	_____	_____	TUE	3	_____	_____
WED	3	_____	_____	WED	4	_____	_____
THR	4	_____	_____	THR	5	_____	_____
FRI	5	_____	_____	FRI	6	_____	_____
MON	1	_____	_____	MON	2	_____	_____
TUE	2	_____	_____	TUE	3	_____	_____
WED	3	_____	_____	WED	4	_____	_____
THR	4	_____	_____	THR	5	_____	_____
FRI	6	_____	_____	FRI	7	_____	_____
MON	1	_____	_____	MON	2	_____	_____
TUE	2	_____	_____	TUE	3	_____	_____
WED	3	_____	_____	WED	4	_____	_____
THR	4	_____	_____	THR	5	_____	_____
FRI	7	_____	_____	FRI	10	_____	_____
MON	1	_____	_____	MON	2	_____	_____
TUE	2	_____	_____	TUE	3	_____	_____
WED	3	_____	_____	WED	4	_____	_____
THR	4	_____	_____	THR	5	_____	_____
FRI	8	_____	_____	FRI	1	_____	_____

PAGE 2

TAPE		USER		TAPE		USER	
DAY	SET	DATE	INIT	DAY	SET	DATE	INIT
MON	3	_____	_____	MON	4	_____	_____
TUE	4	_____	_____	TUE	5	_____	_____
WED	5	_____	_____	WED	6	_____	_____
THR	6	_____	_____	THR	7	_____	_____
FRI	7	_____	_____	FRI	10	_____	_____
MON	3	_____	_____	MON	4	_____	_____
TUE	4	_____	_____	TUE	5	_____	_____
WED	5	_____	_____	WED	6	_____	_____
THR	6	_____	_____	THR	7	_____	_____
FRI	10	_____	_____	FRI	9	_____	_____
MON	3	_____	_____	MON	4	_____	_____
TUE	4	_____	_____	TUE	5	_____	_____
WED	5	_____	_____	WED	6	_____	_____
THR	6	_____	_____	THR	7	_____	_____
FRI	9	_____	_____	FRI	8	_____	_____
MON	3	_____	_____	MON	4	_____	_____
TUE	4	_____	_____	TUE	5	_____	_____
WED	5	_____	_____	WED	6	_____	_____
THR	6	_____	_____	THR	7	_____	_____
FRI	2	_____	_____	FRI	3	_____	_____

PAGE 3

TAPE		USER		TAPE		USER	
DAY	SET	DATE	INIT	DAY	SET	DATE	INIT
MON	5	_____	_____	MON	6	_____	_____
TUE	6	_____	_____	TUE	7	_____	_____
WED	7	_____	_____	WED	10	_____	_____
THR	10	_____	_____	THR	9	_____	_____
FRI	9	_____	_____	FRI	8	_____	_____
MON	5	_____	_____	MON	6	_____	_____
TUE	6	_____	_____	TUE	7	_____	_____
WED	7	_____	_____	WED	10	_____	_____
THR	10	_____	_____	THR	9	_____	_____
FRI	8	_____	_____	FRI	1	_____	_____
MON	5	_____	_____	MON	6	_____	_____
TUE	6	_____	_____	TUE	7	_____	_____
WED	7	_____	_____	WED	10	_____	_____
THR	10	_____	_____	THR	9	_____	_____
FRI	1	_____	_____	FRI	2	_____	_____
MON	5	_____	_____	MON	6	_____	_____
TUE	6	_____	_____	TUE	7	_____	_____
WED	7	_____	_____	WED	10	_____	_____
THR	10	_____	_____	THR	9	_____	_____
FRI	4	_____	_____	FRI	5	_____	_____

PAGE 4

TAPE		USER		TAPE		USER	
DAY	SET	DATE	INIT	DAY	SET	DATE	INIT
MON	7	_____	_____	MON	10	_____	_____
TUE	10	_____	_____	TUE	9	_____	_____
WED	9	_____	_____	WED	8	_____	_____
THR	8	_____	_____	THR	1	_____	_____
FRI	1	_____	_____	FRI	2	_____	_____
MON	7	_____	_____	MON	10	_____	_____
TUE	10	_____	_____	TUE	9	_____	_____
WED	9	_____	_____	WED	8	_____	_____
THR	8	_____	_____	THR	1	_____	_____
FRI	2	_____	_____	FRI	3	_____	_____
MON	7	_____	_____	MON	10	_____	_____
TUE	10	_____	_____	TUE	9	_____	_____
WED	9	_____	_____	WED	8	_____	_____
THR	8	_____	_____	THR	1	_____	_____
FRI	3	_____	_____	FRI	4	_____	_____
MON	7	_____	_____	MON	10	_____	_____
TUE	10	_____	_____	TUE	9	_____	_____
WED	9	_____	_____	WED	8	_____	_____
THR	8	_____	_____	THR	1	_____	_____
FRI	6	_____	_____	FRI	7	_____	_____

PAGE 5

TAPE		USER		TAPE		USER	
DAY	SET	DATE	INIT	DAY	SET	DATE	INIT
MON	9	_____	_____	MON	8	_____	_____
TUE	8	_____	_____	TUE	1	_____	_____
WED	1	_____	_____	WED	2	_____	_____
THR	2	_____	_____	THR	3	_____	_____
FRI	3	_____	_____	FRI	4	_____	_____
MON	9	_____	_____	MON	8	_____	_____
TUE	8	_____	_____	TUE	1	_____	_____
WED	1	_____	_____	WED	2	_____	_____
THR	2	_____	_____	THR	3	_____	_____
FRI	4	_____	_____	FRI	5	_____	_____
MON	9	_____	_____	MON	8	_____	_____
TUE	8	_____	_____	TUE	1	_____	_____
WED	1	_____	_____	WED	2	_____	_____
THR	2	_____	_____	THR	3	_____	_____
FRI	5	_____	_____	FRI	6	_____	_____
MON	9	_____	_____	MON	8	_____	_____
TUE	8	_____	_____	TUE	1	_____	_____
WED	1	_____	_____	WED	2	_____	_____
THR	2	_____	_____	THR	3	_____	_____
FRI	10	_____	_____	FRI	9	_____	_____

START OVER ON PAGE 1

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