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System Commands
Reference Manual

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Chapter 1 - Introduction to the Manual

The purpose of this manual is to provide information on every command on the AMOS system. In writing these reference sheets, we've assumed you are already familiar with the AMOS system. If this is not true, please read your *AMOS User's Guide*.

This manual does not contain reference sheets for any AMOS products sold separately from the operating system, such as AlphaWRITE, AlphaCALC, etc. These products come with their own documentation (sometimes in the form of reference sheets that may be inserted into this manual, if you wish).

For detailed information on the system language and text processors, see the specific manuals for those processors.

CONCEPTS

Below we define several of the terms that appear frequently in the command reference sheets. For more information on system concepts, see your *AMOS User's Guide*.

AMOS Command Level

When you are at AMOS command level, you are communicating directly with AMOS (the Alpha Micro Operating System) and not with a program AMOS is executing.

AMOS Prompt

When you're at AMOS command level, you see the AMOS prompt symbol, which tells you the operating system is ready for you to enter a command. This prompt may be the system default, a period (.), or it may be defined using SET.

Command Line

Whenever you enter a command to AMOS, you include the name of the command optionally followed by device and/or file specifications, option switches, etc. The entire input line is called a command line.

Command File

A command file is an ASCII text file containing valid AMOS system commands and file specifications. It can contain most commands and data you can enter at AMOS command level (including the name of another command file). As AMOS processes a command file, it performs the functions called for by each line of the file. Command files can also contain several special symbols that affect the way the file is displayed on the terminal screen as it is processed, and that allow the file to ask for input from the user. A special kind of command file, called a DO file, allows you to specify text arguments which AMOS substitutes in place of special parameter symbols.

Defaults

When you leave information out of a command line, AMOS often has a set of information it substitutes for the missing items. For example, if you don't tell AMOS what account a file is in, it usually assumes it is in the account you are currently logged into.

Defaults vary among commands. Check the reference sheet for a specific command to see what defaults it uses. In particular, the special commands called wildcard file commands handle defaults differently than other commands on the system.

File Specification

Data on a disk is organized into logically-related groups called files. Whenever you want to identify a file to an AMOS command, enter that file's specification, which includes its name, and where it is located, if necessary.

Re-entrant

A program is *re-entrant* when it can be used by more than one user at a time, and is therefore able to be loaded into System Memory, where it can be shared by all users. Re-entrant programs are also *re-usable*.

Re-usable

A program is *re-usable* when it can be interrupted during its operation, and then resumed again, or when it can be run again after it has run. Since AMOS is a multi-user system, most of its programs are *re-usable*. Re-usable programs cannot be loaded into System Memory (unless, of course, they are also re-entrant).

Switch (or Option)

Many AMOS commands and programs allow you to select among several options by including switches on a command line. A switch is a slash (/) followed by one or more characters. You can sometimes include several switches on one command line.

The specific form switches take varies depending on the particular command. Some commands expect every single character after a slash to represent a different switch (e.g., MAP/FSR); others require each switch begin with a new slash (e.g., PRINT NET.BAS/COPIES:2/BAN/HE). See the reference sheet for a particular command to see the switches for it.

Wildcard

A wildcard is a special symbol appearing in a file specification. Wildcards allow a file specification to represent more than one file. For example, the wildcard symbol * in this file specification:

```
F*.TXT RETURN
```

will select all .TXT files whose names begin with F, regardless of the rest of the file name.

The use of wildcard symbols varies among commands. Some commands do not recognize wildcards; others handle wildcards differently than do the rest of the commands on the system. See a command's reference sheet to see how it handles wildcards.

Wildcard File Command Switches

Wildcard file commands distinguish between two types of switches: *file switches* and *operation switches.* If a file switch is directly after a file specification, it affects only that file. For example:

```
ERASE MTDVR.M68,MTDVR.LIT/QUERY,MTDVR.OBJ RETURN
```

tells ERASE to ask for confirmation before erasing MTDVR.LIT. It erases the other two files without asking for confirmation.

An operation switch affects all files on the command line, no matter where it is placed. For example, the /WIDE option with the DIR command affects the directory display for all specified files, no matter where it appears on the command line.

Wildcard file commands allow you to set the default switch by placing the switch in front of a file specification. For example:

```
ERASE/Q MTDVR,MTDVR.OBJ/NOQ,SRCFIL.BAS RETURN
```

tells ERASE to ask for confirmation before erasing the first and third files specified on the command line.

See your *AMOS User's Guide* for more information on wildcard file command switches and default switches.

CONVENTIONS USED IN THIS MANUAL

This manual conforms to the other Alpha Micro publications in its use of a standard set of graphics conventions. We hope these graphics simplify our examples and make them easier for you to use. Unless stated otherwise, all examples of commands are assumed to be entered at AMOS command level.

SYMBOL MEANING

devn: Device-Name. The "dev" is the three letter physical device code, and the "n" is the logical unit number. Examples of device names are DSK0:, DSK5:, WIN1:, and MTU0:. Usually, device names indicate disk drives, but they can also refer to magnetic tape drives and video cassette recorders.

filespec File Specification. A file specification identifies a specific file within an account. A complete filespec is made up of the devn:, the filename, the file extension, and the project-programmer number. For example:

```
devn:filename.ext[p,pn]
```

or

```
DSK0:SYSTEM.INI[1,4]
```

[p,pn] This abbreviation represents an account on a disk you can store files and data in. An actual disk account number looks like this: [100,2] or [1,4]. Disk account specifications are sometimes referred to as "Project-programmer numbers."

{ } Braces are used in some examples to indicate optional elements of a command line. In the example:

```
DIR{/switch}
```

the braces tell you "/switch" is not a required portion of the DIR command line.

/ The slash symbol precedes a command line switch or "option request." For example:

```
DIR/WIDE:3 RETURN
```

This command requests a directory display of the disk account you are currently logged into. The switch (/WIDE:3) indicates you want the display to be three columns wide.

TEXT Bold text in an example of user/computer communication represents the characters you type.

`TEXT` Text like this in an example of user/computer communication represents the characters the computer displays on your terminal screen.

KEY In our examples, the keycap symbol appears whenever you need to press a certain key on your terminal keyboard. The name of the key you need to press appears inside the keycap symbol, like this: RETURN. If you need to press the TAB key, you would see TAB, or the ESCAPE key, ESC. (Sometimes the ESCAPE key is labeled ESC or ALT MODE.)

CTRL/KEY This indicates a control sequence you press on the keyboard. The CTRL key is pressed and held down while the indicated key is also pressed.

^ This symbol in front of a capital letter means the letter is a "control character."

For example, when you press CTRL/C, it appears on your screen as `^C`. (^C is the control character used like the CANCEL key to cancel most programs and return you to AMOS command level.)

✋ This symbol means "halt!" It indicates an important note you should read carefully before going further in the documentation. Usually, text next to this symbol contains instructions for something you MUST or MUST NOT do, so read it carefully.

SYMBOL	MEANING
✋	This symbol means "hint." It indicates a helpful bit of information, or a "short cut" that could save you time or trouble.
☝	This symbol means "remember." It indicates something you should keep in mind while you are following a set of instructions.

Chapter 2 - Introduction to AMOS Commands

Each reference sheet in this manual gives you detailed information on the use of a specific command. Before getting into the use of particular commands, however, it is a good idea to discuss exactly what we mean by the term *command.*

A command is simply a specification that selects a disk file. AMOS looks for the file, and if it finds it, it loads it into memory (if it is not already in memory) and executes it. The file selected by a command must be either a machine language program (usually identified by a .LIT file extension) or a command file (identified by a .CMD or .DO extension.)

Because the programs specified by commands are not actually part of the operating system, but are simply files on the disk, you can add to the commands AMOS recognizes by creating your own machine language programs and command files. When you enter a command at AMOS command level, AMOS performs a thorough search procedure as it looks for the program or command file specified by the command. It looks in various accounts on the System Disk and on the device you are logged into. For example, if you enter:

```
RECALL RETURN
```

AMOS follows this search path when looking for a command:

1. Look for RECALL.LIT in system memory (RES:).
2. Look for RECALL.LIT in user's memory partition (MEM:).
3. Look for RECALL.LIT in DSK0:[1,4].
4. Look for RECALL.CMD in system memory (RES:).
5. Look for RECALL.CMD in user's memory partition (MEM:).
6. Look for RECALL.CMD in DSK0:[2,2].
7. Look for RECALL.LIT in current account.
8. Look for RECALL.CMD in current account.
9. Look for RECALL.LIT in user's project library account.
10. Look for RECALL.CMD in user's project library account.
11. Look for RECALL.DO in user's memory partition (MEM:).
12. Look for RECALL.DO in current account.
13. Look for RECALL.DO in user's project library account.
14. Look for RECALL.DO in DSK0:[2,2].

At the end of its search, if it still has not found the file, AMOS echoes the command back to you enclosed in question marks.

COMMANDS TO BE USED WITH CAUTION

This section is a quick reference to those commands you should use with caution. Some of these commands can destroy the contents of your disk if used improperly. Others can bring other users on your system to a halt or must only be used under certain conditions. See the particular reference sheet for more information.

Commands That Can Destroy Disk Contents

The following commands may wipe out some or all of your data if used improperly:

BADBLK BDRESCLEAR CLEAR CRT410
CRT415 CRT420 CRT520 DIRSEQ
DSKANA DSKCPY DSKDDT DSKPAK
DVDRES FIXLOG FMSFLP FMTDVD
FMTFLP FMTSCZ FMTS2 FMT210 MOUNT
FMTFLP FMTSCZ FMTS2 FMT210 MOUNT
QDT RESTOR SYSACT VCRRES XMOUNT

System Operator Commands

You must be logged into the System Operator's account, DSK0:[1,2], to run these commands:

CLEAR CRT415 CRT420 CRT520 FMSFLP
FMTDVD FMTFLP FMTSCZ FMTS2 FMT210
MONTST MUSER QDT

You must be logged into [1,2] to run:

ASCDMP DSKANA DSKCPY DSKDDT DSKDMP
DSKPAK FIXCRC HASHER SYSACT

Access Limitations

These commands lock up all other users on the system while they are running:

FMTDVD FMTFLP FMT210 MONTST
STRSAV

These commands may only be used when no other user is accessing the affected logical disk or disk controller:

ACD
BACKUP
BAKDIR
BDRES
CRT415
CRT420
CRT520
DBD
DIRSEQ
DSKCPY
DSKPAK
DVD
DVDRES
FMSFLP
FMTDVD
FMTSCZ
FMTS2
MAKACD
MAKBD
MAKDVD
MFDSEQ
MOUNT
RESTOR
SYSACT
VCRDIR
VCRRES
VCRSAV
XMOUNT

Chapter 3 - File Specifications

For more information on any AMOS system concepts discussed in this chapter, see your *AMOS User's Guide*.

Most AMOS commands ask you for one or more file specifications on a command line. The file specification identifies a file to AMOS, and takes this form:

```
devn:filename.extension[p,pn]
```

devn: Three letters and a number that select a logical unit of a physical device. This specification tells AMOS the device the specified file resides on. The device specification and the filename are separated by a colon.

devn: usually identifies a disk (e.g., DSK0:, the System Disk), but can identify a streaming tape drive (e.g., STR0:) or a special device (such as system memory, RES:).

Several commands also recognize a different type of device called an "ersatz device." Ersatz devices identify specific accounts on the System Disk. For example, the ersatz device BAS: identifies the System AlphaBASIC Language Library account, DSK0:[7,6]. You may also define your own Ersatz names. For more information on ersatz devices, see your *System Operator's Guide.*

filename A one- to six-character file name. AMOS usually considers upper and lower case letters in a filename to be the same, but some programs require that you enter filenames as all upper case. If you enter more than six characters, AMOS may not (depending on the command you are using) process any extension or PPN that follows the name.

extension Zero to three characters that follow the filename and give information to the command about the contents of the file. The filename and extension are separated by a dot.

[p,pn] Identifies the account in which the file resides. When it is part of a file specification, always enclose the account number within square brackets. An example of a typical file specification:

```
DSK2:PROJCT.TXT[100,2]
```

the device specification, DSK2:, tells AMOS the file is on logical unit DSK2 of the physical device DSK; the filename PROJCT identifies the file; the extension .TXT further identifies the file (and tells AMOS it contains text data); and the account number [100,2] specifies the account on DSK2: where AMOS can find the file.

Chapter 4 - Defaults and Wildcard Symbols

If you leave out elements of a file specification, most commands can fill in some of the missing information for you. The assumptions commands make about missing file specification elements are called *defaults.* The defaults a command uses depends on the specific command. Each reference sheet in this manual lists the defaults used by the command if they differ from the standard system defaults.

STANDARD SYSTEM DEFAULTS

All AMOS commands use the standard file specification defaults below. Several other commands (the wildcard file commands) also assume additional default information.

- If you leave out a device and unit number from a specification, AMOS assumes you want to access a file on the device you are currently logged into.
- If you leave out the device unit number (e.g., DSK:PAYROL.LIT[23,4]), AMOS uses the default unit number zero. The specification above, then, selects file DSK0:PAYROL.LIT[23,4].
- If you leave out the PPN, AMOS uses as the default the account you are currently logged into.
- If you leave out a file extension, the default extension depends on the command you are communicating with. For example, TXTFMT assumes a .TXT extension; ERASE assumes an empty extension.

The wildcard file commands handle file specification defaults differently than the rest of the commands on the system. See your *AMOS User's Guide* for information on these commands.

WILDCARD SYMBOLS

This section discusses special symbols in file specifications. A basic specification selects only one file. For example:

```
DSK1:CRLF.M68[300,2]
```

elects the file CRLF.M68 on device DSK1: in account [300,2]. Wildcard symbols allow one file specification to select several files. For example:

```
*.TXT
```

selects all files in the account and device you are logged into having .TXT extensions, regardless of name. Not all AMOS commands recognize wildcard symbols. All of the commands able to process wildcards recognize the standard system wildcards. In addition, wildcard file commands have an advanced wildcarding ability not shared by the rest of the commands on the system.

STANDARD SYSTEM WILDCARD SYMBOLS

*	Matches any symbol or group of symbols in a filename or extension. STOCK.* selects all files in your account having the name STOCK, regardless of extension.

You may precede the ***** with one or more symbols (e.g., F1*.M68), but within that name or extension, no symbols may follow the *.

?	Matches any one symbol in a filename or extension. ???DSK.M68 selects any file name of six characters ending with "DSK" and has an .M68 extension, such as PACDSK.M68, DIRDSK.M68, and ARTDSK.M68.

You may place characters before or after ?s. If ?s appear at the end of a filename or extension, that many or fewer characters can match the ? symbols; otherwise, the number of characters matching these wildcard symbols exactly equals the number of ?s.

ALL:	Matches all device names on the system.

Dev:	Matches all devices of the same name. For example, DSK: would represent DSK1:, DSK2:, etc.

[ ]	Matches all accounts on the specified device.

Chapter 5 - Input/Output Redirection

Any command in AMOS that allows switches before the file specification can use Input/Output Redirection. This lets you redirect the input and/or output of an AMOS command—take input from or send output to a file or another program rather than your terminal.

In order to use redirection, redirection must be on for your job (this is the default condition). If you use redirection and it does not work, use the SET REDIRECTION command (see the SET reference sheet). You can also use the REDIR command, as mentioned below.

If you use I/O redirection with the AMOS line editor, your TRMDEF statement cannot have buffers larger than 200 bytes or a line editor setting of more than 20.

REDIRECTION SYMBOLS

>	Send output to the following file.
>>	Append output to the end of the following file.
<	Input the contents of the following file into the AMOS command.
|	Place the output of the following file into the input of the AMOS command.
#	Removes terminal dependent escape sequences from the redirected data. Must be the first symbol following REDIR on the line.
\	Quotes the character following it so it is not interpreted as a command.

The default extensions are .INP for input files and .LST for output files.

USING REDIRECTION

To use redirection, enter the AMOS command followed by the redirection symbol and the redirection command. For example:

```
SYSTAT/N >OUT.LST RETURN
```

The above command places the output of SYSTAT into the file OUT.LST. Another example:

```
VUE INPUT.TST <VUECMD.INP RETURN
```

The above command takes the contents of VUECMD.INP and uses it as input to the VUE program. You can also combine the kinds of redirection. For example:

```
VUE INPUT.TST <VUECMD.INP >OUT.LST RETURN
```

If you are redirecting input from a file, and the end of the file is reached, the input source reverts to the keyboard.

I/O redirection can both execute DO files and be used within CMD or DO files. Because input redirection works regardless of terminal input mode, redirection works where DO files won't—for example, connecting across a network, running VUE, etc. I/O direction uses process spawning. This means you must have extra jobs available on your system (allocated in a JOBS statement in your system initialization command file). Redirection reduces the size of your memory partition by about 8K while it is being used.

Some programs, such as AlphaWRITE, use terminal features that require responses back from a real terminal. Since I/O redirection does not provide such responses, these programs will hang. You can free it (at least until the next time it asks for a response) by using CTRL/F (ACK).

✋ If a program is run with the # option, and that program requests the number of rows and columns on the terminal, it receives a value of zero for both. This is technically correct, but it causes some programs to lock up.

With redirection you can use "piping"—redirecting the output of one program into the input of another. For example:

```
REDIR ERSATZ | TYPE/P RETURN
```

This command takes the output of the ERSATZ program (typically a very long list) and feeds it to the TYPE command which, because of /P, lets you see a paginated display on your terminal.

This example:

```
#PROCES >OUTPUT.LST RETURN
```

runs the command file PROCES and sends the output (minus terminal-dependent escape sequences) to OUTPUT.LST.

In another example:

```
REMOVE \<THE MEMO\> >OUTPUT.LST RETURN
```

the phrase `<THE MEMO>` is an argument for the REMOVE.DO file. If you left out the "\" before the < and > brackets (needed to indicate to the .DO file that THE MEMO is one argument, not two), the command would try to find a file called THE to get input for REMOVE.DO. The above command calls REMOVE.DO with THE MEMO as an argument, and puts the results in OUTPUT.LST.

☝ The REDIR command forces redirection if NOREDIRECTION has been set for your job. REDIR is useful in command files when it is not known if redirection is on or off. See the REDIR reference sheet for more information. That reference sheet also includes a list of messages you may get when using redirection.

Chapter 6 - System Commands List by Function

The rest of this manual consists of reference sheets explaining the use of each system command. We have organized these sheets alphabetically to help you find them quickly. Below is an alphabetically ordered list of all AMOS commands. We also provide a functional summary of the AMOS commands, so if you are not familiar with the name of a specific command, but know its function, you will be able to find it.

AlphaTCP commands do not have reference sheets in this manual, and are not included in the lists in this chapter. For information on AlphaTCP commands, please see the *AlphaTCP User's Guide* and the *AlphaTCP Administrator's Guide*.

Commands marked with an asterisk (*) in the list are included for compatibility with older software only; we recommend you do NOT use them.

ALPHABETIC LIST OF AMOS COMMANDS

ACD	ADJIT	AGREP	AMSCFG	APPEND
ASCDMP	ATTACH	BACKUP*	BADBLK	BAKDIR*
BASBP	BASIC	BASICP	BASICX	
BATCH	BAUD	BDRES	BITMAP	
CACHE	CAL100	CBDS	CBEN	
CDIR	CLEAR	CMP	COMPAT	
COMPIL	COMPLP	CONT	COPY	CPMCPY
CPMDIR	CREATE	CRT410	CRT415	CRT420
CRT520	CRT610	CRT620	CTYPE	DATE
DB	DBD	DEL	DEVTBL	
DING	DIR	DIRBD	DIRSEQ	
DO	DOSDEL	DOSDR	DOSEXP	
DOSIMP	DOSMKD	DOSRMD	DOSTYP	DSKANA
DSKCPY	DSKDDT	DSKDMP	DSKFIL	DSKPAK
DUMP	DVD	DVDRES	ERASE	ERSATZ
ESLSI	ESNIC	EXP	FILCOM	FILDMP
FILTAP	FIX	FIXCRC	FIXFLP	FIXLOG
FIXTRN	FIX210	FIX219	FIX420	FLPDIR
FLPWIN	FMSFLP	FMTDVD	FMTFLP	
FMTSCZ	FMTS2	FMT210	FMT219	FORCE
FREE	FWUPD	GETVER	GLOBAL	HASHER
HELP	ISMBLD	ISMDMP	ISMUTL	ISOCD
JOBALC	JOBPRI	JOBS	KILL	LABEL

LDVSTS LIBLIT LINCNT LNKLIT LOAD
LOG LOGOFF LOGON LOKUTL
MAKACD MAKBD MAKDVD MAKE
MAKQUE MAP MEMORY MENU
MFDSEQ MK MONGEN MONHSH
MONTST MOUNT MTBOOT MTUDIR MTURES
MTUSAV MUSER M68 OSINST PARITY
PASS PATCH PLAYCD POP PPN
PRINT PRNT PUSH QDT QUEUE
RADMON REDALL REDIR RENAME RESTOR*
REWIND RNDRED RUN RUNP RUNX
SAVE SCSI SCZCSH SCZERR SCZPIC
SENDT SET SETJOB SETPEN SHELL
SI SIZE SKIP SLEEP SLEEPR
SMEM SORT SRCCOM STAT STAT1
STRDIR* STRRES* STRSAV* SUBMIT SYMLIT
SYSACT SYSLOG SYSTAT SYSTEM TAPDIR
TAPE TAPFIL TAPLOG TDVDEF TIME
TMODE TRMDEF TXTFMT TYPE U
UTC VCRDIR VCRRES VCRSAV VDKUTL
VER VERIFY VUE WAIT WINFLP
WRDCNT WRMGEN XED XMOUNT XY
640INI

FUNCTIONAL SUMMARY OF COMMANDS

Commands that do several functions appear under more than one heading.

Directory and Account Commands

BAKDIR* DIR DIRSEQ DOSDR DOSMKD
DOSRMD FLPDIR LOG LOGOFF LOGON
MUSER PASS POP PPN PUSH
STRDIR* SYSACT TAPDIR VCRDIR

File Commands

ASCDMP APPEND CMP COPY CREATE
DEL DIR DIRSEQ DSKDMP DSKFIL
ERASE EXP FILCOM FILDMP ISOCD
LINCNT LOAD MAKE PRINT PRNT
SAVE SIZE SORT SRCCOM VUE
WRDCNT XED

Wildcard File Commands

AGREP APPEND BACKUP* BAKDIR* COPY
DEL DIR DIRSEQ DOSDEL DOSDIR
DOSEXP DOSIMP DVDRES ERASE FILTAP
FLPDIR FLPWIN MAP MTUDIR MTURES
MTUSAV PRINT PRNT RENAME RESTOR*
STRDIR* STRRES* STRSAV* TAPDIR TAPFIL
VCRDIR VCRRES VCRSAV WINFLP

Disk and File Copy Commands

APPEND BACKUP* BDRES CMP
COPY DOSEXP DOSIMP DSKCPY
DVDRES EXP FILTAP FLPWIN
MTUDIR MTURES MTUSAV RESTOR*
STRRES* STRSAV* TAPFIL VCRRES
VCRSAV WINFLP

Text Processing Commands

AGREP CMP EXP LINCNT TXTFMT
VUE WRDCNT XED

Language Processor Commands

BASBP BASIC BASICP BASICX COMPIL
COMPLP DB FIX GLOBAL LIBLIT
LNKLIT M68 RUN RUNP RUNX
SYMLIT

Job and Terminal Handling Commands

ADJIT ATTACH BAUD DING FORCE
JOBALC JOBPRI JOBS KILL LOG
LOGOFF LOGON SEND SET SETJOB
SLEEP TDVDEF WAIT XY

Memory Partition Commands

DEL LOAD MAP MEMORY SAVE
SMEM

Analysis and Certification Commands

BADBLK CLEAR CRT410 CRT415 CRT520
CRT610 CRT620 DSKANA FIXCRC FMTSCZ
FMTS2 HASHER REDALL RNDRED VERIFY

Magnetic Tape Unit Commands

FILTAP MTBOOT MTUDIR MTUINI MTURES
MTUSAV REWIND SET SKIP TAPE
TAPDIR TAPFIL TAPLOG 640INI

Backup Commands

BACKUP* BAKDIR* CRT610 DVDRES MAKACD
MAKBD MAKDVD MTUDIR MTURES MTUSAV
RESTOR* STRDIR* STRRES* STRSAV* VCRDIR
VCRRES VCRSAV WRMGEN

System Information Commands

AMSCFG ATTACH BADBLK BITMAP COMPAT
DATE DEVTBL DUMP ERSATZ ESLSI
ESNIC FREE GETVER HELP JOBALC
JOBPRI JOBS LABEL LDVSTS LOKUTL
MEMORY MONHSH PPN QUEUE SCSI
SCZCSH SCZERR SET SI SMEM
STAT STAT1 SYSLOG SYSTAT SYSTEM
TIME TRMDEF UTC VER

System Maintenance Commands

ADJIT BADBLK CACHE CAL100 CBDS
CBEN COMPAT DATE DIRSEQ DSKANA
DSKDDT DSKPAK FIXCRC ISMUTL LOKUTL
MFDSEQ MONGEN MONTST MUSER OSINT
PASS PATCH QDT SET SYSACT
SYSLOG TIME TMODE VDKUTL WRMGEN

ACD

FUNCTION

Makes the logical devices on an AMOS CD accessible without being defined in a DEVTBL statement in your system initialization command file.

CHARACTERISTICS

ACD is re-entrant and re-usable. It temporarily takes control of the SCSI bus, preventing other users from accessing it while you connect or disconnect the CD-ROM drive.

To make the CD-ROM always usable, you can add the ACD command to your system initialization command file. See the *System Operator's Guide to the System Initialization Command File* for more information.

For more information about using AlphaCD, see the *AlphaCD Installation Instructions*, which come with AlphaCD.

FORMAT

```
ACD {/U}
```

OPTIONS

/U Unload. Use this switch to temporarily prevent other users from accessing the SCSI bus while you disconnect the CD-ROM drive or switch CDs. It also removes the ACDxxx: device table entries created by ACD.

OPERATION

If you need to attach a CD-ROM to your computer, follow the instructions below:

1. Before attaching your CD-ROM drive to the computer, type SCSI RETURN to see what SCSI IDs are available on your computer.

2. Follow the instructions for your CD-ROM drive to set the drive’s SCSI ID to an available ID.

3. Make sure no one is using the computer and power it down following the instructions in your Owner’s manual.

4. Attach the CD-ROM drive to the external SCSI connector or an available connector on an external SCSI cable. Be sure not to exceed the allowed length of the physical SCSI bus. This is especially important on the Wide SCSI-2 bus.

5. Turn on power to the CD-ROM drive and power up the computer.

Insert the correct media into the CD-ROM, then type

```
ACD RETURN
```

ACD locates the CD-ROM drive and displays the number of logical units on the drive, the number of queue blocks used while the CD is attached (normally less than 100), and the name of each logical device on the CD.

If there is no CD in the drive, the program displays:

```
?There is no CD-ROM installed in the CD-ROM drive
```

and exits.

If the CD-ROM disk driver, ACD.DVR, has been loaded into system memory by the SYSTEM command in the system initialization command file, the AlphaCD is accessible to all users after ACD has exited successfully. Otherwise, the AlphaCD is available only to the user entering the ACD command. In the latter case, ACD displays:

```
"%WARNING - ACD.DVR is not loaded in system memory,
      therefore this job will be the only one able to
      access AlphaCD."
```

If you want to detach the CD-ROM drive or switch to another CD, use the /U switch:

```
ACD/U RETURN
```

To remove the CD-ROM from the computer after you have finished using it, remove the media from the CD-ROM. Then make sure you power down the computer before unplugging it from the SCSI bus.

MESSAGES

?AlphaCD is already installed

You've used the ACD command, but the CD-ROM drive is already installed on the SCSI bus. ACD has no effect.

CD-ROM drive found at SCSI id: <#>

ACD is confirming the SCSI ID of the CD-ROM it is about to use.

?CD-ROM is not an AlphaCD - insert an AlphaCD and try again

ACD cannot read AMOS device information from the CD-ROM disk. Remove the CD disk from the drive and make sure it is an AlphaCD, clean, and not scratched. Re-insert the disk and try ACD again. If the problem still occurs, either the disk is unreadable, it does not contain AMOS information, or the CD-ROM drive needs cleaning or maintenance.

?FATAL ERROR - can't locate DVR:ACD.DVR Reboot the system and copy
?   ACD.DVR into DVR: before using ACD again.

ACD cannot find a necessary companion file, ACD.DVR in the DVR: account (usually DSK0:[1,6]). Reboot the system and copy the needed file into DVR:.

?Impossible error - can't find ACDn: entries in DEVTBL
?Impossible error - freeing queue blocks that aren't allocated

ACD detected a system problem when unmounting the CD-ROM. Reboot the system.

Invalid command line - ACD to install or ACD/U to un-install.

ACD did not understand the command line you entered.

?No free SCSI addresses - you must remove at least one SCSI peripheral
?in order to access AlphaCD

All available SCSI IDs are in use, and there is no CD-ROM drive attached. (The SASI bus supports only four SCSI devices; the SCSI-2 bus supports seven; and the Wide SCSI-2 bus supports 15.) To use a CD-ROM drive, power down your computer, remove one of the devices from the SCSI bus, and attach the CD-ROM.

?Not enough contiguous queue blocks to create device table
?You must allocate more via the QUEUE statement in your system
?   initialization command file

ACD uses a system resource called queue blocks to temporarily create device table entries describing the logical units on the CD-ROM disk. ACD cannot allocate enough contiguous blocks. As queue blocks are a dynamic, system-wide resource, either try again in a few seconds, or increase the number of queue block entries allocated by the QUEUE command in your system initialization file and reboot the system.

Using AM-PC CD-ROM interface

ACD found and is using an "ACD=" line in the AMPC.INI file.

?You must install a SCSI dispatcher prior to using this program.

If your system uses the SCSI-2 or Wide SCSI-2 bus, you must install a SCSI dispatcher to use ACD.

ADJIT

FUNCTION

Displays and changes the values in the dynamic job scheduling priority table.

CHARACTERISTICS

When dynamic job scheduling is on, the length of the time slice given to each job varies continually based on the number of jobs currently in the run queue. The dynamic job scheduling priority table sets the length of the time slice each job receives depending on the number of jobs in the queue. ADJIT displays the priority table and lets you change the time slice length for any queue size.

The priority values take effect only when dynamic job scheduling is on. You can turn dynamic job scheduling on and off using the SET command.

OPERATION

To see the dynamic job scheduling priority table, type:

```
ADJIT RETURN
```

This shows, in columns, the current time slice settings for each queue size. Generally, the settings for smaller size queues are higher than for larger queues—the fewer jobs that are waiting for attention, the more time each job gets.

The maximum setting is 40. To change a setting, type the queue size you want to change the value for, RETURN, then type the setting you want and RETURN.

To leave the ADJIT screen, type **END** RETURN or press CTRL/C.

The values you enter are changed only in memory. When you reboot the system, the priority settings will return to their default values.

MESSAGES

?Error - feature not supported by this release

Your current AMOS monitor doesn't support dynamic job scheduling.

AGREP

FUNCTION

Searches all files in the local account for an ASCII string.

CHARACTERISTICS:

AGREP is re-entrant and re-usable. AGREP is a quick way to find a string of characters in a set of files without having to VUE each in turn. You may search in a binary file, but only for ASCII characters. AGREP will not search in random files.

OPTIONS

/D	Sends file name(s) and number of occurrences to SEARCH.DIR.
/F	Turn on folding. All characters compared without regard to case.
/L	Send output to SEARCH.LST.
/N	Turn off screen auto-paging.
/T	Turn on token mode search.

OPERATION

Enter `AGREP` RETURN in the account you want to search. You are then prompted for the search string, which can be any length sequence of printable characters, including blanks and tabs. There are no wildcard characters. When you press RETURN, you are prompted for the file(s) to be searched (the files must be in your current account). Enter the files to be searched, and any options. For example:

```
AGREP RETURN
String to search for: INVENTORY'CONTROL RETURN
Files to search: *.BP/F
```

As shown, you can use wildcards in the files to search.

Each line containing the search string is displayed on the screen. If there are more than 24 occurrences, AGREP displays one screen at a time (unless you use /N). If the display pages, press any character to continue to the next page. You may use CTRL/C at any time to stop the search.

You may specify a file that contains the files to be searched by using an at sign (@). For example:

```
AGREP RETURN
String to search for: INVENTORY'CONTROL RETURN
Files to search: @FILES.TXT
```

In this case, AGREP would search for the string in the files listed in the file FILES.TXT. If just an @ is entered, AGREP looks for a file called SEARCH.DIR to use as a list of files.

MESSAGES

Besides standard AMOS file messages, you may see:

?File open error, error code = [code]

See the code explanation in the Monitor Calls Manual.

?Invalid switch

You entered an invalid command line switch. Use one of the valid options only.

?Output specification not allowed

You cannot enter an output file specification in the line defining the files to be searched. Use the /D or /L option instead.

AMSCFG

FUNCTION

Analyzes and reports on the configuration of a running system.

CHARACTERISTICS

AMSCFG is re-entrant and re-usable. It scans system memory locations and system tables set up by AMOS at bootup time and by other products as they initialize. AMSCFG sends a report of the system configuration either to the screen or a disk file. You can control the level of detail in the report by using command line switches. The disk file is a standard ASCII sequential file, which you can view by using programs such as TYPE, VUE or XED.

AMSCFG is an unsupported product from Alpha Microsystems. It is supplied as-is without any warranty.

FORMAT

```
AMSCFG {/switch{,/switch}}
```

switch is an option request.

DEFAULTS

AMSCFG defaults to continuous screen output and summary information on each section reported, with no system resident or installed program information.

OPTIONS

/A	Report on AlphaBASE job usage, if any.
/D	Display disk information. Same as /DF
/DS	Do not report on each logical unit individually. Summarize information by physical unit only.
/DF	Output full device information per logical unit, together with a summary per physical unit.
/DL	Output disk label information as well. Forces /DF.
/F:fname	Output the report to a file named ***fname***. Unless you also use the /K switch, if the file already exists, it is not overwritten and the program aborts. Default extension is .CFG.
/H:text	Output ***text*** as a header at the top of each printed page. Ignored for screen output.

/H Prompt for the printed page header separately. Ignored for screen output.

/IDV Output details on used .IDVs.

I:fname Include a printout of the contents of the file named ***fname*** at the end of the report.

/IP:fname As /I:fname, but starting each file at the top of a new page.

/J Output detailed job table information.

/K Used with the /F:fname option. If the file named ***fname*** already exists, delete it without further ado.

/L:n Output ***n*** printed lines per page. Ignored for screen output, see the /P option.

The defaults for the /LL, /LR, /LDP, /LTS, /LDF, and /LTF switches are those defined in the job's active language definition file.

/LL:c Set the left PPN symbol to ***c***.

/LR:c Set the right PPN symbol to ***c***.

/LDP:c Set the decimal point character to ***c***.

/LTS:c Set the thousands separator to ***c***.

/LDF:n Set the date format: 0=MDY, 1=DMY, 2=YMD.

/LTF:n Set the time format: 0=12 hour clock, 1=24 hour clock

/N Output detailed AlphaNET node and AlphaTCP information.

/NOA Suppress AlphaBASE job totals.

/NODL Suppress disk label information.

/NOF Suppress FOLDERS device information.

/NOJ Suppress job detail.

/NON Suppress network detail.

/NOR Suppres system memory content detail.

/NOT Suppress terminal detail.

/NOTDV Suppress terminal driver information.

/NOX Suppress installed program information

/P Pause at the end of each screenful of information and wait for a key to be pressed. Screen length is determined by the terminal’s TRMCHR settings. Ignored for file output—use the /L:n option to specify the number of lines per page for printed output.

/R Output information on system resident modules.

/S Output details on information held in the System Communications Area, and certain details on hardware settings.

/T Output information on terminal definitions.

/TDV Output full information on used terminal drivers.

/X Report details on certain installed programs.

/* Output the fullest possible report. Can be used with the /NOxxx options.

/? Output a brief help screen.

OPERATION

Enter AMSCFG followed by the option switches you want. For example:

1. To output full information to a file called SYSTEM.CFG, erasing any existing SYSTEM.CFG file, with a header of "Joe's system":

```
AMSCFG/*/F:SYSTEM/K/H:Joe's System RETURN
```

2. Same as above, but ignore terminal driver and FOLDERS information:

```
AMSCFG/*/F:SYSTEM.CFG/K/H:Joe's System/NOTDV/NOF RETURN
```

3. Output the same detail to the screen, pausing between screenfuls:

```
AMSCFG/*/P/NOTDV/NOF RETURN
```

4. Output the same detail to a file called SYSTEM.CFG, entering a page header separately:

```
AMSCFG/*/NOTDV/NOF/F:SYSTEM.CFG/H RETURN
```

AMSCFG will then prompt you for the header:

```
Enter header:
```

AMSCFG does most of its work by scanning tables set up by system or application software. The only hardware scanning is for SSDs, boot PROM revisions, CPU settings and devices connected to the SCSI bus. If a device has not been set up by software (usually in the system initialization file), AMSCFG will generally not report the presence of the device. AMSCFG only detects Herbie controllers (AM-515, AM-520 and AM-522s) by looking at .DVR files and comparing fields with standard Alpha Micro-defined IO memory space locations. .DVRs using non-standard locations, or third-party drivers that occupy that address space, may be misreported.

Settings descriptions are taken from the appropriate manuals. In particular, the message `May be on VME bus` is particularly unreliable, as the software setting more accurately reflects the use of particular hardware components on the CPU motherboard.

Reported sizes are rounded to the nearest whole number (or nearest tenth if a decimal point is displayed). In some circumstances, adding individual items may not equal the displayed total, due to rounding errors. The total figure is more accurate than the sum of the items, as it is based on the sum of individual byte or block counts, not on the accumulation of rounded values.

Certain early versions of the monitor (especially prior to AMOS 1.3D) may not report certain fields fully or properly.

AMSCFG knows about the following third-party products in their released versions of October 1995. Earlier or later versions of these products may produce incompatibilities with AMSCFG.

Alpha Microsystems does not support AMSCFG handling of other software versions, but welcomes user feedback of any problems:

Interlink Systems, Inc. SuperDisk
Soft Machines, Inc. FOLDERS
U.A. Systems, Inc. AlphaLAN
Alpha Base Systems, Inc. AlphaBASE and Metropolis
ProVUE Development, Inc. SuperVUE

It is not possible to consistently locate SuperVUE modules by looking in system files. If SuperVUE is installed in a different account than DSK0:[1,20], AMSCFG will not find the files.

Any trademarks are the property of their respective holders.

FOLDER devices do not affect the figures for disk capacity for the logical device on which the folder resides (or for total disk space). The logical's disk capacity and free space counts reflect the fact that FOLDER is an allocated contiguous file, and so takes up room on the logical unit. The fact that the FOLDER may contain free space is not germane to the logical's statistics.

The /IDV and /TDV switches report on only those drivers that are actually in use by physical terminals on the system. Drivers attached to the appropriate system chain but not referenced through the terminal definition chain are not reported on in detail.

AMSCFG cannot tell from where a particular file has been loaded. AMSCFG always assumes the Alpha Microsystems' specified default. If you have loaded a file from a different account, or renamed or copied a file to a different name, AMSCFG may incorrectly report a setting. AMSCFG does, however, always display the unambiguous filename of the file on which it is reporting.

If non-Alpha Microsystems' products are used in the running system, AMSCFG may not report correct information. Alpha Microsystems does not support AMSCFG in such circumstances.

MESSAGES

%Bad 'include' filename or out of memory

AMSCFG could not read the include file specified by the /I or /IP command. Either the file does not exist or you do not have enough memory in your partition.

%Cannot find file <name>

AMSCFG cannot locate a file you requested be appended to the report with the /I or /IP switch. Re-enter the command line.

Cannot INIT buffer - cannot read file

AMSCFG cannot process a file. Try increasing your memory allocation and rerunning AMSCFG.

Cannot read file any further

AMSCFG had a problem reading a file. Usually this means there is a device error on the disk. Contact your System Operator.

Could not hash file

AMSCFG could not produce a hash total for this file. Either you have run out of memory or there is a problem reading the file from the disk. Contact your System Operator for assistance.

%filename is a contiguous file. Cannot include!

AMSCFG can print only sequential files.

%Illegal switch settings

One of the switches you used had an invalid option setting. Check the command line and try again.

%Illegal value in date format setting.

The /LDF:n value is invalid. Enter a value of 0-2 only.

%Illegal value in time format setting.

The /LTF:n value is invalid. Enter a value of zero or one only.

%Invalid command line

AMSCFG could not understand your command line. Identify the error and retype the corrected line.

%No queue blocks available

AMSCFG needs queue blocks for its internal operation. Ask your System Operator to increase the number of queue blocks allocated by AMOS at system initialization time.

Report is in filename

A reminder of the name of the report file you selected with the /F command.

%Program aborted by CTRL/C

You stopped the program by pressing CTRL/C.

APPEND

FUNCTION

APPEND combines one or more source files into a single file.

CHARACTERISTICS

APPEND is re-entrant and re-usable. You cannot create a file in an account outside of the project you are currently logged into, unless you are logged into [1,2].

You may use APPEND to combine sequential files of any type. You can append one file onto the end of another file by specifying the same specification for the new file as one of the old files you are combining. APPEND does not change the contents of the old files (unless the new file has the same name and extension as one of the old files).

FORMAT

```
APPEND newfilespec=filespec{,filespec(s)}
```

newfilespec specifies the new file that will hold the contents of the combined files, and the ***filespec(s)*** are the files you want to merge.

DEFAULTS

Assumes the account and device you are currently logged into and a null file extension (i.e., a no-character extension) for the new file specification.

Assumes the extension of the new file specification for the first file specification, and then assumes for each subsequent file specification the actual or assumed extension of the previous file specification.

OPERATION

Enter APPEND and the specification of the new file, an equal sign, and one or more specifications of files you want to merge. For example:

```
APPEND ASMBLR.M68=PARSE.M68,SCAN,TABLE,CNVRT RETURN
```

When APPEND has written the combined contents of the old files into the new file, you are returned to AMOS.

EXAMPLES

If you enter:

```
APPEND ASMBLR.M68=PARSE,SCAN,TABLE,CNVRT RETURN
```

APPEND assumes the default extension of .M68 for each of the files PARSE, SCAN, TABLE and CNVRT because that is the extension of the new file ASMBLR. If you enter:

```
APPEND ASMBLR=PARSE,SCAN,TABLE,CNVRT RETURN
```

APPEND assumes that the extension of the file ASMBLER is a null extension (ASMBLR.), an extension having no characters. APPEND assumes, by default, that the extensions of PARSE, SCAN, TABLE and CNVRT are also null extensions. If you enter:

```
APPEND EXAMPL.TXT=INTRO,SAMPL1.BAS,SAMPL2,CLOSE.TXT RETURN
```

APPEND creates the new file EXAMPL.TXT to include INTRO.TXT (the extension is assumed to be the same as the new file specification), SAMPLE1.BAS, SAMPL2.BAS (the extension is assumed to be the same as the previous file specification, SAMPL1.BAS), and CLOSE.TXT.

MESSAGES

Cannot OPEN [filespec] - file not found

Check your syntax, or use DIR to locate the file.

?Command error

Check your syntax and try again.

?File specification error

Check your syntax and try again.

?You may not append to files on device MEM:

You cannot change the size or contents of a module in user memory by using the APPEND command.

ASCDMP

FUNCTION

ASCDMP displays the data in physical disk blocks in ASCII form on your terminal.

CHARACTERISTICS

ASCDMP is re-entrant and re-usable. It displays all printable ASCII characters in the block, including HT, LF, CR, and FF. All non-printable characters display as periods (.). Enter the number of the disk block you want to display in the same number base the system is using for your numeric displays (usually octal). You can change the system display base to hexadecimal by using the SET command.

You must be logged into DSK0:[1,2] to use ASCDMP.

FORMAT

```
ASCDMP {devn:}{physical-block-number}
```

devn: is the device name and ***physical-block-number*** is the number of the physical block on the disk you want to display.

DEFAULTS

devn: defaults to DSK0:. The physical-block-number defaults to zero.

OPERATION

Log into OPR: (DSK0:[1,2]) and enter ASCDMP optionally followed by a device specification and physical block number. For example:

```
LOG OPR: RETURN
ASCDMP DSK2:200 RETURN
```

To find out what blocks are contained in a specific file, use DSKFIL.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see the devices defined on your system.

?Cannot read [device-name] - disk not mounted

MOUNT the disk and try again.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

ATTACH

FUNCTION

Connects a job to a terminal, or displays the jobs and terminals attached on a system.

CHARACTERISTICS

ATTACH is re-entrant and re-usable. When the system is reset or powered up, it automatically attaches the first job to the first terminal defined in your system initialization command file. Except for that special case, however, the system does not automatically attach any jobs to terminals. If you want a job to be able to use a terminal for input and output, you must explicitly attach the job and the terminal by using the ATTACH or SETJOB command.

If you want to attach a job and a terminal already linked to other units, the ATTACH command detaches the job and the terminal from their previous attachments. Then it will attach the freed job and terminal to each other. This is the only way you can detach jobs and terminals (i.e., by attaching them to something else).

If you want to attach a terminal to a job logged into an account, ATTACH asks you for the password of that account, if one exists, before it attaches the specified job and terminal. You can attach your terminal to a job, but be careful the job has some memory allocated to it or you will not be able to do much.

A typical use for ATTACH might be to attach a printer to a job as a terminal so you can get a paper copy of the program's output.

FORMAT

```
ATTACH {terminal,}{job}
```

If you specify a terminal, you should also specify a job. If you specify a job alone, it will attach that job to your own terminal.

OPERATION

To find out what jobs and terminals are attached to each other, enter ATTACH. For example:

```
ATTACH RETURN
TERM1 attached to JOBA
TERM2 attached to JOBC
DUKE attached to SPOOL
```

To attach your terminal to a specific job, add a job name. For example:

```
ATTACH JOBA RETURN
```

To attach a specific job to a specific terminal, enter ATTACH followed by the terminal name, a comma, and the job name. For example:

```
ATTACH TERM1,JOB4 RETURN
```

The terminal names are set by the TRMDEF commands in your system initialization command file. To see the names of all of the terminals on the system, enter TRMDEF at AMOS level. The first column on the left of the display lists all of the terminals.

MESSAGES

?Account not found on login disk for specified job

You attempted to attach a terminal to a job logged into an account which no longer exists on the device specified (or the default device). See what can be done to log the job into another account.

?Bad password

You did not specify the correct password. Check your spelling and try again.

?Nonexistent job

You tried to attach a terminal to a job not defined on your system. Check your typing or use SYSTAT to see a list of the jobs defined on your system.

?Nonexistent terminal

You tried to attach a job to a terminal not defined in a TRMDEF command in your system initialization command file. Use the TRMDEF command to see a complete list of all of the terminals defined on your system.

BACKUP

FUNCTION

The BACKUP command copies files from a hard disk drive to the specified backup device along with their disk device and account specifications, and the date and time of the backup.

The BACKUP, BAKDIR, and RESTOR commands are included only for compatibility with earlier operating system versions. Do **NOT** use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

CHARACTERISTICS

BACKUP is re-entrant and re-usable, and a wildcard command. Files can be copied from any disk account to the backup medium regardless of the account logged into. No account passwords are copied.

You use BACKUP in combination with BAKDIR (which displays a directory of files on backup media) and RESTOR (which copies files from backup media to a hard disk).

When you are using a VCR (except with the /TRANSFER option), BACKUP locks up all other users on your system. Notify other users before using BACKUP.

BACKUP can be set up to use a default backup device. This is useful if you normally use one device for most or all of your backups. When this default is in effect, you don't have to tell BACKUP what device you wish to use, thus saving a step in the backup process. To set a device as the default, define an ersatz device called BACKUP: in your ERSATZ.INI file. For example:

```
BACKUP: = MTU0:
```

Define the device you want as your default backup device after the name. If you want to use another device after the default device has been set, you can use the /OVERRIDE switch to be prompted for the device name. If you don't have a default device and you don't use /OVERRIDE, BACKUP presents a menu of available devices to select from.

FORMAT

```
BACKUP{/switch} {filespec,filespec(s)}{/switch}
```

switch is an option request, and ***filespec(s)*** specify the files to be transferred.

DEFAULTS

The default filespec is *.* and the device and account you are logged into. For video tape backup, the default number of copies is 5.

OPTIONS

All switches may be abbreviated to any unique characters. Placing NO before a switch turns that switch off. The default switches are /NOAPPEND, /NOBOOT, /NOHASH, /NOQUERY, /NOSUPPRESS, and /NOTRANSFER.

/AFTER:date&time Back up only files modified after specified date and time. Operation switch.

/APPEND Add files to end of backup medium (floppy disks only). Operation switch.

/BEFORE:date&time Back up only files modified before specified date and time. Operation switch.

/BOOT Generate warm boot tape (not for floppy disks). Operation switch.

/COPIES:n n+5 extra copies of each data block. Default for n is 0 (5 extra copies). VCR only, operation switch.

/HASH Calculate a hash total. Operation switch.

/QUERY Confirm files before backup. File switch.

/MODIFIED Back up only files modified since last backup. Operation switch.

/OVERRIDE Used to override the default backup device (if one exists). You are prompted for the name of the device. Operation switch.

/SUPPRESS Suppress "files selected" display. File switch.

/TRANSFER Back up without locking out other users, using at least 20 extra copies. VCR only. To use more than 20 extra copies, use /COPIES:n switch also and set n to more than 15. Operation switch.

/VOID Use when transferring files between systems connected by video cables. Operation switch.

/WAIT:+@HH:MM Wait specified time before backup begins. VCR only. Operation.

If you inadvertently enter both /QUERY and /SUPPRESS, /QUERY takes precedence and the /SUPPRESS switch is ignored.

In the /AFTER and /BEFORE switches, you must specify dates and times in the following format:

```
/switch:{month-day-year}{@hour:minute{AM/PM}}
```

You must specify either a date, a time, or both. Specifying a time without a date defaults to the current date, while a date without a time defaults to zero time (midnight).

The argument for /WAIT must be a relative number of hours and minutes from the current time:

```
/WAIT:+@hours:minutes
```

OPERATION

Enter BACKUP followed by the desired file specifications. For example:

```
BACKUP DSK0:MEMO.TXT[150,0],DSK1:TEST.M68[100,3] RETURN
```

BACKUP responds with a menu of the available backup devices. After you make your selection, BACKUP asks you to confirm that the device specification is correct. If it is, press RETURN. If not, enter the correct specification.

BACKUP then gives you step-by-step instructions for completing the backup. These instructions vary according to the type of backup device you are using.

MESSAGES

?All "date and time" switches must be in absolute format.

See the rules above for specifying dates and times, and try again.

?Attempt to initiate device handler failed, error code n

Check to see if the number of jobs defined in your system initialization file is enough to include one for the device handler task. The error codes are:

```
1 = Job table is full
4 = %HNDLR task already exists
```

If you see #1, add more jobs in the JOBS command in your system initialization file. If you see #4, it means someone else is running BACKUP, RESTOR or BAKDIR.

?BACKUP media not compatible with current software.

The backup medium you are using is not compatible with the current version of your software. See your System Operator for help.

?Cannot be logged onto the backup device

Check your entry for errors. Make sure you used a colon after the device name.

?Cannot open message socket. ITC error: n

See your *AMOS Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently. Make sure you have a MSGINI line in your system initialization file.

?Cannot use [ersatz name] - ersatz name not found

Check your syntax, or define the ersatz name in your ERSATZ.INI file.

?Cannot use [device] - [AMOS error message]

Either your ersatz default device definition or the device you specified after /OVERRIDE was incorrect. Using the AMOS error message as a clue to what is wrong, check the appropriate entry and correct it.

?Can't find device handler in DEVTBL

See your Alpha Micro dealer for help.

%Device specified is not a supported backup device

Check your entry for errors. Make sure you used a colon after the device name.

?Diskette is full

Place a new diskette in the drive and continue the backup.

?End of media detected.

The device handler detected the end of a streaming tape cartridge before completing the backup—there was not enough room on the tape for all the files you specified. Use a larger capacity backup device or split your backup into two or more sections.

?End of media detected on a split file.

Place a new diskette in the drive and continue the backup.

?Fatal error, aborting device handler task

This is an informative message that occurs after some other fatal error, and indicates the device handling task is also aborting.

?Fatal error, illegal message code n received from device handler.

The main task received an error it did not understand from the device handler. Try again—if the problem persists, see your Alpha Micro dealer for help.

?Fatal error, ITC error code [n]

See your *Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently.

%Field size exceeded. Re-enter.

You've exceeded the length of the current field. Make a shorter entry.

%No supported backup devices found

Your system is not set up for any of the three supported backup devices, so you can't specify a device.

?Program aborted by device handler.
?Device not ready.

The medium you are trying to back up to is write protected. Either switch media or write-enable the medium you're using.

?Tape is full

The streaming tape drive is full. BACKUP then tells you how many of the files you requested were actually backed up.

?Unable to run device handler task

The device handler failed to communicate with the main task after it was spawned. See your System Operator or Alpha Micro dealer for help.

?Unspecified error received.

The main task received an error it did not understand from the device handler. Try again—if the problem persists, see your Alpha Micro dealer for help.

?VCR failed to respond to command.

The problem could be in the VCR remote control, the remote control cable, or the computer. Make sure the cable is properly connected—if it is, try to determine if it's the VCR or computer so you can get it fixed.

?WAIT switch format error detected.

The amount of time specified with the WAIT switch must be relative. For example, /WAIT:+@2:30 would cause the VCR backup to start two and a half hours after you enter the BACKUP command.

?Warm Boot Monitor [monitor-name] not found.

Make sure you specified the monitor correctly, or use DIR to locate the file.

%WARNING -- Device handler task failed to respond. Reboot system.

Reboot your system. There should be no damage to your data.

BADBLK

FUNCTION

Lets you view the list of defects (bad blocks) for a disk device. For most disks, you can add or delete bad blocks from the list.

CHARACTERISTICS

BADBLK is re-entrant and re-usable. It reads the list of disk defects created by a disk certification program. Depending on the type of disk, this list is either in the file BADBLK.SYS[1,2], or handled by the drive internally on a portion of the disk reserved for that purpose. In either case, the list is created when the disk is certified.

Certifying a disk is a serious procedure which you should do only if you have a situation where the data on the disk is not recoverable. In cases where you need to modify the list of disk defects, we strongly recommend you use BADBLK rather than re-certifying the disk.

For disks which use BADBLK.SYS[1,2], BADBLK also verifies the file's hash total (a value based on the file's contents that checks the validity of the data in the file).

While AM-520 and AM-522 controlled disks do have BADBLK.SYS[1,2] files, these files are not used by the operating system. Defects are handled internally by the disk controller. You can still use BADBLK to update the defect list.

To use BADBLK on a SCSI disk, the disk must be connected to the SCSI bus. You cannot use BADBLK on a SCSI disk connected to an AM-515 disk controller.

For a discussion of when to use BADBLK to create or modify the BADBLK.SYS file, see your *System Operator's Guide*.

FORMAT

```
BADBLK devn:
```

OPERATION

When used from an account other than OPR:

Enter BADBLK and the logical device you want a bad block list for. For example:

```
BADBLK PLD0: RETURN
```

BADBLK displays the serial number of the device, the number of blocks or tracks marked as bad, and lists the bad blocks or tracks.

Block numbers are octal or hex depending on your current output radix. Track and head numbers are decimal.

When used from OPR:

For most Winchester disk systems, you can add blocks to the bad block list for the device. For non-SCSI devices, you can also delete blocks from the list or modify the serial number of the device. Some disks also let you create a BADBLK.SYS[1,2] file if it doesn't already exist.

To perform any of these functions, be sure you are logged into DSK0:[1,2] and enter the BADBLK command. For example:

```
LOG OPR RETURN
BADBLK DSK2: RETURN
*
```

The * is the BADBLK prompt. There are general commands you can use with all disks:

E	Write out new information and exit.
H	Help (list instructions).
L	List bad blocks/tracks
S	Modify serial number.

Other commands depend on the type of device you have—enter H to see a menu for your device.

Adding and Deleting Bad Blocks

If you consistently receive messages stating a certain block has an error, such as:

```
Error 5 Drive 2 Block 4 (Cylinder 3 Head 2 Sector 1)
```

you may want to add that block to the bad block list.

Except for SCSI devices and AM-520/AM-522 controlled drives, before using the A, D or M commands, back up the entire ***physical*** device you are going to be changing. Modifying the bad block list destroys all the data on the physical disk!

When you add a block to the defect list for a SCSI or AM-520 or AM-522 controlled drive, BADBLK tries to salvage the data in the bad block. However, if the block is unreadable, the data will be lost, and you must restore the file from a backup.

After backing up the physical disk, if necessary, enter the BADBLK command as described above and use the A option. In our example, using the track (cylinder) and head numbers:

```
* A 3,2 RETURN
```

If you don't have a SCSI, AM-520, or AM-522 controlled device, you see:

```
%Warning: This command will destroy all data on disk!!
%Type "Y" if you wish to proceed.  Proceed? Y RETURN
```

When adding or deleting a bad block, be sure you enter the block number in the correct radix, either octal or hex.

If you want to delete a bad block, follow the same procedure, but use the D command. You cannot use the D command with a SCSI disk.

When you use the M command, BADBLK reads the disk and creates a BADBLK.SYS[1,2] file on it, or tells you if one already exists. The M command does not work on AM-415, AM-515, AM-520/522 or AM-1000 controlled devices, or SCSI disks, which maintain the bad block list internally.

To leave BADBLK, type E and press RETURN.

MESSAGES

?BADBLK.SYS[1,2] does not exist.

Use the DIR command to search for the file. If the file has truly been lost, you have to create a new one, either using the M option or by re-certifying the disk. Remember, some disks do not have a BADBLK.SYS file.

?BADBLK.SYS is full
?No more entries allowed

BADBLK.SYS for this device is full. Contact your Alpha Micro representative.

Cannot read defect map, controller not initialized

The AM-520 or AM-522 disk controller for the specified disk has not been properly initialized in the system initialization file. Revise the initialization file and reboot the system before retrying.

?Can't fetch BADBLK.SYS[1,2]

This message occurs only on AM-415 and AM-1000 systems. The BADBLK program could not load BADBLK.SYS into memory. Contact your Alpha Micro representative.

?CAUTION: hash total did not verify

The BADBLK.SYS file contains a bad hash total—the data in the file does not match the hash total for the file. The data in the file is invalid. Make a backup copy of the entire ***physical*** device, then re-certify the disk.

?Command format error

You entered the A or D command incorrectly. Be sure you specified the proper number or numbers for your type of disk.

%Could not list defects. Format code unrecognized.

The list of defects on a SCSI drive is not in a supported format. The drive is not usable in its current state.

?D command not allowed on SCSI drives

You cannot delete a bad block from the list for a SCSI device.

?Duplicate entry

The block you tried to add to the bad block list is already listed. Make sure you entered the block numbers correctly.

?Error sending REQUEST SENSE command

The SCSI drive returned an error condition when the list of defects were read. The drive is not usable in its current state.

?Invalid command

The command you entered is not allowed. Check your entry, or use the help option to see the proper commands and formats.

?Illegal disk address

The block or track and head number you specified is outside the valid range for the device. Check your entry and/or the specifications for the device. Make sure you entered the block in the correct radix.

?M command not allowed on [device-name]

You cannot use the M command with the specified device.

?S command not allowed on SCSI drives

You cannot change the serial number of a SCSI disk device using BADBLK.

?SCSI error code type n, code n

BADBLK had difficulty with the SCSI device. See the *System Operator's Guide* for an explanation of the error code and type.

?Unable to delete or add entry

If deleting, the block you specified was not listed. If adding, this appears after the "Duplicate entry" message if the block is already listed.

Unable to read Bad Block Map - insufficient memory.

There is not enough free memory in your memory partition to read in the bad block map from the disk. Delete unwanted memory modules or increase the size of your partition with the MEMORY command.

%Unable to write defect map - error n

The AM-520 or AM-522 disk controller encountered an error when writing back the modified defect map to the disk. The error number is a standard DDB error in the *AMOS Monitor Calls Manual*.

?You must install a SCSI dispatcher prior to using this program

You must install a SCSI dispatcher for your system by using the SCZDSP command in the system command initialization file and rebooting the system.

You may also see several system error message if you enter an invalid device specification. For example:

?Cannot INIT [device-name] -- device does not exist

Check your entry, or use DEVTBL to see a list of the valid system devices.

?Cannot READ [filespec] - disk not mounted

Mount the disk and try again.

BAKDIR

FUNCTION

Displays a list of the files on a specified backup medium. Can also create a disk file containing a directory of files.

The BACKUP, BAKDIR, and RESTOR commands are included only for compatibility with earlier operating system versions. Do NOT use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

CHARACTERISTICS

BAKDIR is re-entrant and re-usable. The backup medium read by BAKDIR must have been previously created with the BACKUP command. BAKDIR is a wildcard command.

Unless you are using a VCR and /T, BAKDIR locks up all users on your computer. Notify other users before using BAKDIR.

BAKDIR can be set up to use a default backup device. This is useful if you normally use one device for most or all of your backups. When this default is in effect, you don't have to tell BAKDIR what device you wish to use, thus saving a step in the backup process. To set up a device as the default, define an ersatz device called BACKUP: in your ERSATZ.INI file. For example:

```
BACKUP:     VCR0:
```

Define the device you want as your default backup device after the name. If you want to use another device after the default is "set up," use /OVERRIDE, and you will be prompted for the device name. If you don't have a default device, and if you don't use /O, BACKUP displays a menu of available devices.

FORMAT

```
BAKDIR{/switch} {{listspec}=}{filespec(s)}{/switch}
```

switch is an option request, ***listspec*** specifies a disk file for the directory, and ***filespec(s)*** specify the file(s) you want displayed.

DEFAULTS

The default `filespec` is *.* and the device and account you are logged into. The default switches are /NOK and /NOT. The default listspec is DIRECT.LST and the device and account you are logged into.

OPTIONS

All BAKDIR switches affect all filespecs on the command line. Placing NO before a switch turns off the switch. Switches may be abbreviated.

/FULL Displays all available information about the files on the media.

/HASH Displays the hash total of the file (if backed up with /H).

/KILL Delete existing file matching the listpec before creating a list file.

/OVERRIDE Overrides default backup device. You are prompted for the device name.

/PROTECTION Displays the protection codes (if any) of the files on the media.

/SUPPRESS Don't display a dot on the terminal as records are read.

/TRANSFER Don't lock out users from system (VCR only).

/UDATE Displays the last date updated. Useful if you are going to use the /BEFORE or /AFTER switches with RESTOR.

OPERATION

Enter BAKDIR and the desired switches and file specifications. For example:

```
BAKDIR DSK0:MEMO.TXT[150,0],DSK1:TEST.M68[100,3] RETURN
```

BAKDIR displays a menu of available backup devices. Select the device you want. BAKDIR then asks you to confirm the device name is correct—if so, press RETURN. If not, enter the correct one. BAKDIR instructs you in running the backup device selected. Follow its directions, and BAKDIR displays the directory. The first number on each line is the file's relative position on the medium. Next, you see the full file specification, and the size of the file in 512-byte blocks. The letter after the file size tells if the file is a random, or linked (L) file, or a sequential, or contiguous (C) file. Then you see the date the file was backed up, and the file protection bits. If the files were backed up with /H, the last item on the line is the hash total.

MESSAGES

?Attempt to initiate device handler failed, error code n

Check to see if the number of jobs defined in your system INI file are enough to include one for the device handler task. The error codes you may see are:

```
1 = Job table is full
4 = %HNDLR task already exists
```

If you see #1, add more jobs in the JOBS command in your system INI file. If you see #4, it means more than one user was running BACKUP, RESTOR, or BAKDIR at the same time.

?BACKUP media not compatible with current software.

The backup medium you are using is not compatible with the current version of your software. See your System Operator for help.

?BACKUP media not file structured.

BAKDIR could not read the label information block. BAKDIR can only read media created by the BACKUP command.

?BACKUP media not written by BACKUP program.

Restore using the appropriate restore program.

?Cannot be logged onto the backup device

Check your entry for errors. Make sure you used a colon after the device name.

?Cannot open message socket. ITC error: n

See your *Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently.

?Cannot use [device] - [AMOS error message]

Either your ersatz default device definition, or the device you specified after /OVERRIDE was incorrect. Using the AMOS error message as a clue to what is wrong, check the appropriate entry and correct it.

?Can't find device handler in DEVTBL

See your Alpha Micro dealer for help.

%Device specified is not a supported backup device

Check your entry for errors. Make sure you used a colon after the device name.

?End of media detected

While reading the directory from a streaming tape, BAKDIR reached an "end of tape" marker. This normally indicates a problem with the streaming tape.

?Fatal error, aborting device handler task

This is an informative message that occurs after some other fatal error, and indicates the device handling task is also aborting.

?Fatal error, illegal message code n received from device handler.

The main task received an error from the device handler it did not understand. Try again—if the problem persists, see your Alpha Micro dealer for help.

?Fatal error, ITC error code [n]

See your *Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently.

?List file already exists

This message appears if you used the /NOK switch and the specified listspec already exists. Erase the listspec, or use another listspec.

%No supported backup devices found

Your system is not set up for any of the supported backup devices, so you can't specify a default device.

?TOC file not found

This may mean your cassette is damaged. Use CRT610 to check the tape.

?Unable to run device handler task

The device handler failed to communicate with the main task after it was spawned. See your System Operator or Alpha Micro dealer for help.

?Unspecified error received.

The main task received an error from the device handler it did not understand. Try again—if the problem persists, see your Alpha Micro dealer for help.

?VCR failed to respond to command.

This could indicate a problem with the remote control of your VCR, with the connection between your computer and your VCR, or with your computer. Make sure your cables are properly connected—if the cable is okay, try to locate whether it's the VCR or computer so you can get it fixed.

?%WARNING -- Copy count on tape is below the minimum level when using the TRANSFER switch.

If your computer is busy, this could mean BAKDIR won't work properly. You may want to try again without /T.

%WARNING -- Device handler task failed to respond. Reboot system.

Reboot your system. There should be no damage to your data.

BASBP

FUNCTION

Aids in converting AlphaBASIC programs to AlphaBASIC 1.4 or AlphaBASIC PLUS files.

CHARACTERISTICS

BASBP is re-entrant and re-usable. Accepts one or more AlphaBASIC (.BAS) files as input and outputs the converted file (.BP). For more information on AlphaBASIC PLUS programs, see your *AlphaBASIC PLUS User's Manual*.

FORMAT

```
BASBP {switch} filespec(s) {switch}
```

switch is an option beginning with **-** or /. Multiple switches can be specified with one delimiter (i.e., /dki). ***filespec*** can be a single file, or a list of files contained in a reference data file (@filname.DAT) created by the DIR command using /D.

OPTIONS

/C Creates a .CMD file to compile all converted programs. Only with multiple files.

/D Displays all changed lines on the terminal as processed.

/I Flags all ISAM statements and fixes all ISAM PLUS keyword conflicts.

/K Fixes all keyword conflicts except ISAM PLUS.

/L Flags all XCALLS to XLOCK or FLOCK.

All options are global switches. If no switches are added, all switches are in effect. If any one switch is specified, all the other switches are off.

OPERATION

Enter BASBP at AMOS command level:

```
BASBP ACCNT.BAS RETURN
```

To convert all .BAS files in an account to AlphaBASIC PLUS:

```
DIR/D CONV.DAT=*.BAS RETURN  ; Generates file list
BASBP @CONV RETURN           ; Converts the files
CONV RETURN                  ; Compiles the files
```

To convert AlphaBASIC 1.3 files to AlphaBASIC 1.4, use the /I switch to convert and flag only ISAM/ISAM PLUS related conflicts. Under AMOS 2.0 and 2.1, AlphaBASIC 1.4 supports only ISAM PLUS, but under AMOS 2.2, it supports both ISAM and ISAM PLUS. So, the ISAM PLUS keyword conversion is always needed, but there is no need to modify the ISAM statements for AMOS 2.2 (unless you want to upgrade to ISAM PLUS as well).

To convert AlphaBASIC 1.3 files to AlphaBASIC PLUS under 2.0 or 2.1, use the default (no switches). To go to AMOS 2.2, use the default, or /KI if old style XLOCK/FLOCK file-locking exists in the 1.3 program.

MESSAGES

?Cannot access input file

Check your syntax, or use DIR to locate the file.

BASIC

FUNCTION

Allows you to use the AlphaBASIC language processor in interactive mode.

CHARACTERISTICS

BASIC is re-entrant and re-usable. AlphaBASIC is an easy-to-learn programming language. The BASIC command puts your terminal in AlphaBASIC interactive mode. Once "in" AlphaBASIC, you may use the interactive mode commands to load, create, save, and run AlphaBASIC programs.

For information on writing AlphaBASIC programs or on using either the compiler (COMPIL.LIT) or the runtime package (RUN.LIT) portions of AlphaBASIC separately, see your *AlphaBASIC User's Manual.*

To exit from AlphaBASIC, enter BYE. To interrupt the execution of a program, press CTRL/C.

OPTIONS

/A	Increases memory, allowing larger files to be worked on.

OPERATION

Enter BASIC at AMOS command level:

```
BASIC RETURN
```

You see a version number and READY, which tells you BASIC is working. You can either load in a BASIC program, for example:

```
LOAD PAYROL.BAS RETURN
```

or begin to create a new program, by typing in the program lines. For example:

```
10 PRINT "This program computes interest rates." RETURN
20 INPUT "Enter balance: $",BALANCE RETURN
```

To run a program in memory, enter RUN.

MESSAGES

The AlphaBASIC error messages are listed in your *AlphaBASIC User's Manual*.

BASICP

FUNCTION

Allows you to use AlphaBASIC PLUS in interactive mode.

CHARACTERISTICS

BASICP is re-entrant and re-usable. See the *AlphaBASIC PLUS User's Manual* for information about the AlphaBASIC PLUS programming language.

To exit from AlphaBASIC PLUS, enter BYE. To interrupt the execution of a program, press CTRL/C.

BASICX

FUNCTION

Allows you to use AlphaBASIC in interactive mode, using the integral math coprocessor on a 68040 CPU chip.

CHARACTERISTICS

BASICX is re-entrant and re-usable. It functions only on a computer with a 68040 CPU with an integral math coprocessor. Except for using the math functions of the 68040 to increase performance, it works exactly like the BASIC command. See the *AlphaBASIC User's Manual* for information about the AlphaBASIC programming language.

To exit from AlphaBASIC, enter BYE. To interrupt the execution of a program, press CTRL/C.

BATCH

FUNCTION

Loads commands frequently used by command files into your memory partition.

CHARACTERISTICS

BATCH is a command file in DSK0:[2,2] (the command file library account) that accepts no arguments or switches. BATCH loads these programs into memory:

GOTO LOAD LOOKUP PAUSE
TRACE EXITEXIT

Using BATCH speeds up the execution of a command file if that file uses many or all of these programs. The BATCH command is best used at the front of a command file. All of the above programs are re-entrant, so the System Operator may place them into system memory where they can be used by everyone on the system.

BATCH takes up about 1500 bytes of your memory partition. You may want to include a DEL* command at the end of a command file containing the BATCH command, so the programs loaded into your memory partition will be deleted when you exit the command file.

OPERATION

Enter the command at AMOS level:

```
BATCH RETURN
```

MESSAGES

You may see the standard AMOS message `file not found` if any of the files have been deleted from DSK0:.

BAUD

FUNCTION

Changes the baud rate (data-transfer rate) the system uses to communicate with a terminal.

CHARACTERISTICS

BAUD is re-entrant and re-usable. Make sure your terminal is able to communicate at the speed you specify to the BAUD command. The baud rates the system supports are:

50	75	110	134.5	150
200	300	600	1200	1800
2400	3600	4800	7200	9600
19200	38400	57600		

FORMAT

```
BAUD {baud-rate-number}
```

If you do not enter a ***baud-rate-number***, the current baud rate will be displayed.

OPERATION

To find the current baud rate, enter BAUD:

```
BAUD RETURN
Current baud rate is 9600
```

To change the baud rate, type BAUD followed by a legal baud rate. For example:

```
BAUD 300 RETURN
```

MESSAGES

?Baud rate [baud-rate] is not a legal baud rate

Try again with one of the baud rates listed above.

BDRES

FUNCTION

Copies one or more AMOS logical disks from a recordable DVD-RAM or Blu-ray media in a supported DVD-RAM or Blu-ray drive to AMOS logical disks. The logical disk(s) being copied to must be the same bitmap word size as the AMOS logical disk if the entire logical is being copied without wild carding. If wild carding is being used, then any file on any logical can be copied to any AMOS logical with sufficient unused capacity.

BDRES is only supported on AM-8000, Eagle 800, and AMPC 7.X systems.

CHARACTERISTICS

BDRES copies logical AMOS disk(s) from a DVD-RAM or Blu-ray media to an AMOS disk drive. The DVD-RAM or Blu-ray media AMOS disk and the AMOS disk being copied to must be the same bitmap word size if the entire logical is being copied without wild carding. The BDRES software will copy logical drives of differing sizes if the logical is being copied with wild carding. BDRES will not allow for differing bitmap size logicals to be copied without wild carding. If an unequal bitmap word size is tried, BDRES will ignore the request and continue with the restoring.

FORMAT

BDRES {switches}

OPTIONS

/HELP	Display the available options and exits
/?	Same as /HELP
/DEV:xxx:	Uses device and driver named xxx: instead of the default DVD:
/ID:n	Uses the DVD-RAM or Blu-ray Drive at SCSI ID n instead of scanning the SCSI bus to find a DVD-RAM Drive. The ID can be from 0 to 15.
/V	Display version information.
/PIC	Display Product Installation Code

OPERATION

✋ BDRES works best on a job with 132 columns set as the terminal width.

Before starting the program, place the DVD-RAM or Blu-ray media with the logicals you wish to copy in the DVD-RAM or Blu-ray drive. Then type BDRES from the AMOS prompt:

BDRES RETURN

BDRES will attempt to find a DVD-RAM or Blu-ray drive that is compatible with the driver being used. The driver must have the same name as the DVD-RAM or Blu-ray drive device name and be loaded in system memory. BDRES will find the drive either using the command line switches /DEV and /ID or by defaulting to DBD:. If more than one DVD-RAM or Blu-ray type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for copying from.

After entering the BDRES command, the following will be displayed:

```
BDRES Version X.X(xxx)- x – Copyright 2007, Alpha Microsystems
```

If BDRES finds multiple possible DVD-RAM or Blu-ray drives while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible DBD-Recorders:
               ID    Description
          1.   nn    xxxxxxxxxxxxxxxxxxxxxxxxx
          2.   nn    xxxxxxxxxxxxxxxxxxxxxxxxx

Select one of the above devices:
```

More information about the DVD-RAM or Blu-ray drive, driver, and media contents is displayed:

```
DVD-RAM, BLU-RAY drive found at SCSI id: 4
```

Logical Type:
S = Standard
E = Extended

```
------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L -----                          ----------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L----------------
DBD000:     307200.      20928.     286272.      19200.        0   0 blk  REX000: E AM-8000 8.0 Release & Static Files ......
DBD001:     307200.     216928.      90272.      19200.     1470   3 blk  REX001: E AM-8000 8.0 Build & Source Files ........
DBD002:     307200.       2617.     304583.      19200.     E849   2 blk  REX002: E AM-8000 EAMOS Release ...................
DBD003:     307200.      36155.     271045.      19200.     EAD8   2 blk  REX003: E CD AMOS Release 01/31/2006 .............
DBD004:     307200.      63972.     243228.      19200.    10E28   0 blk  REX004: E AlphaTCP 1.5A Source & Release .........
DBD005:     307200.       7085.     300115.      19200.    14CA1   3 blk  REX005: E AlphaNET 2.4(159)-4 Rel & Src ..........
DBD006:     307200.      57016.     250184.      19200.    1538D   3 blk  REX006: E AlphaFAX 2.1(100)-1 Rel & Src ..........
DBD007:     307200.      17996.     289204.      19200.    18B3C   2 blk  REX007: E MULTI 2.1(192)10 rEL & sRC .............
DBD008:     307200.      40664.     266536.      19200.    19CD0   1 blk  REX008: E AlphaODBC 1.0(100) Rel & Src ...........
DBD009:     307200.       8072.     299128.      19200.    1C487   0 blk  REX009: E AlphaMAIL 1.2B PR09/05 .................
DBD010:     307200.      32551.     274649.      19200.    1CC69   3 blk  REX010: E Xadmin Release & *.INIs ................
DBD011:     307200.       3804.     303396.      19200.    1EC34   1 blk  REX011: E Command & Do Files .....................
DBD012:     307200.      84153.     223047.      19200.    1EFEC   0 blk  REX012: E Open Logical...REX12:...................
DBD013:     307200.      19063.     288137.      19200.    2421B   0 blk  REX013: E AMPC 7.0 Release .......................
DBD014:     307200.      52946.     254254.      19200.    254B9   2 blk  REX014: E AlphaODBC 1.0(100) Rel & Src ver. 1.4Y .
DBD015:     307200.     241467.      65733.      19200.    2886E   3 blk  REX015: E Open Logical...REX15:...................
------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L ----------------------------------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L----------------
TOTAL:     4915200.     905417.    4009783.      Media Label: "NIGHTLY BACKUP..."
(megabytes)   2400.000     442.098    1957.901
(gigabytes)      2.3438      0.4317      1.9120
```

```
DBD media contains 16 logical units.
```

BDRES then asks for the DBD logical(s) that you wish to copy from the backup media.

```
Which DBD Logical(s) would you like to restore?
```

Each DBD Logical entered may have one MASK following it. A space must separate the DBD Logical and the MASK. MASK characters are (?) & (*). (e.g.: DBD0: *.DIR[1,2], DBD5: A*.LIT[1??,*] or DBD16: FLP*.*[]) Enter the list of disk Logicals to be transferred. Disk Logicals may be entered as a range (e.g.: DBD0: -20 for DBD0: thru DBD20:), or may be comma separated. The list is terminated with a blank line:

```
*DBD0: -15

Which Disk Logical(s) would you like to restore to?
```

Enter list of disk Logicals to be transferred. Disk Logicals may be entered as a range (e.g.: DBD0: -20 for DBD0: thru DBD20:), or may be comma separated, The list is terminated with a blank line:

```
*UPD0: -15
```

If no wildcarding is used, a Note is displayed warning you that all data on these logical(s) will be lost and asking you to enter “YES” to continue. If “YES” is entered the entire logical(s) will be copied. The copying process then begins. As it progresses, status messages are displayed.

Following are samples of a BDRES process. The first sample has no wildcarding, and the second sample shows the process with wildcarding:

SAMPLE 1:

```
*
-----  Date & Time: Thu 5-Jul-2007 11:38:01 AM

         Note:  One or more logical(s) have no wildcarding assigned.
         Therefore, these logical(s) will have their label block, MFD, UFDs,
         bitmap and data blocks restored from the backup.  All data currently
         on these logical(s) will be lost.

         Are you sure that you want to do this?  If so enter "yes". YES

      DBD0: [19200.] 150 Mb -----> UPD0: [19200.] 150 Mb
      Used Blocks: [20928.]   Total: [20928.]   [ 10.219 Mb ]
 ---  Date & Time: Thu 5-Jul-2007 11:40:37 AM
      Restoring..........................................................
      Logical has been restored & remounted.
 ---  Date & Time: Thu 5-Jul-2007 11:40:51 AM Elapsed Time: 00:00:14   747.429 Kbytes per second

      DBD1: [19200.] 150 Mb -----> UPD1: [19200.] 150 Mb
      Used Blocks: [216928.]   Total: [237856.]   [ 116.141 Mb ]
 ---  Date & Time: Thu 5-Jul-2007 11:40:57 AM
      Restoring..........................................................
      Logical has been restored & remounted.
 ---  Date & Time: Thu 5-Jul-2007 11:43:20 AM Elapsed Time: 00:02:23   758.490 Kbytes per second
```

```
      DBD2: [19200.] 150 Mb -----> UPD2: [19200.] 150 Mb
      Used Blocks: [2617.]   Total: [240473.]   [ 117.418 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:43:24 AM
      Restoring........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:43:26 AM Elapsed Time: 00:00:02   654.250 Kbytes per second

      DBD3: [19200.] 150 Mb -----> UPD3: [19200.] 150 Mb
      Used Blocks: [36155.]   Total: [276628.]   [ 135.072 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:43:29 AM
      Restoring...........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:43:53 AM Elapsed Time: 00:00:24   753.229 Kbytes per second

      DBD4: [19200.] 150 Mb -----> UPD4: [19200.] 150 Mb
      Used Blocks: [63972.]   Total: [340600.]   [ 166.309 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:43:58 AM
      Restoring...........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:44:40 AM Elapsed Time: 00:00:42   761.571 Kbytes per second

      DBD5: [19200.] 150 Mb -----> UPD5: [19200.] 150 Mb
      Used Blocks: [7085.]   Total: [347685.]   [ 169.768 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:44:43 AM
      Restoring ..........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:44:48 AM Elapsed Time: 00:00:05 708.500 Kbytes per second

      DBD6: [19200.] 150 Mb -----> UPD6: [19200.] 150 Mb
      Used Blocks: [57016.]   Total: [404701.]   [ 197.608 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:44:52 AM
      Restoring...........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:45:29 AM Elapsed Time: 00:00:37 770.486 Kbytes per second

      DBD7: [19200.] 150 Mb -----> UPD7: [19200.] 150 Mb
      Used Blocks: [17996.]   Total: [422697.]   [ 206.395 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:45:33 AM
      Restoring ..........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:45:45 AM Elapsed Time: 00:00:12 749.833 Kbytes per second

      DBD8: [19200.] 150 Mb -----> UPD8: [19200.] 150 Mb
      Used Blocks: [40664.]   Total: [463361.]   [ 226.250 Mb ]
---   Date & Time: Thu 5-Jul-2007 11:45:48 AM
      Restoring ..........................................................
      Logical has been restored & remounted.
---   Date & Time: Thu 5-Jul-2007 11:46:15 AM Elapsed Time: 00:00:27 753.037 Kbytes per second

      DBD9: [19200.] 150 Mb -----> UPD9: [19200.] 150 Mb
```

```
       Used Blocks: [8072.]   Total: [471433.]   [ 230.192 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:46:18 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:46:23 AM Elapsed Time: 00:00:05 807.200 Kbytes per second

       DBD10: [19200.] 150 Mb -----> UPD10: [19200.] 150 Mb
       Used Blocks: [32551.]   Total: [503984.]   [ 246.086 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:46:27 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:46:49 AM Elapsed Time: 00:00:22 739.795 Kbytes per second

       DBD11: [19200.] 150 Mb -----> UPD11: [19200.] 150 Mb
       Used Blocks: [3804.]   Total: [507788.]   [ 247.943 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:46:52 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:46:55 AM Elapsed Time: 00:00:03   634.000 Kbytes per second

       DBD12: [19200.] 150 Mb -----> UPD12: [19200.] 150 Mb
       Used Blocks: [84153.]   Total: [591941.]   [ 289.034 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:46:59 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:47:55 AM Elapsed Time: 00:00:56   751.366 Kbytes per second

       DBD13: [19200.] 150 Mb -----> UPD13: [19200.] 150 Mb
       Used Blocks: [19063.]   Total: [611004.]   [ 298.342 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:47:59 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:48:11 AM Elapsed Time: 00:00:12   794.292 Kbytes per second

       DBD14: [19200.] 150 Mb -----> UPD14: [19200.] 150 Mb
       Used Blocks: [52946.]   Total: [663950.]   [ 324.194 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:48:15 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:48:50 AM Elapsed Time: 00:00:35   756.371 Kbytes per second
       Restored (0.) Files.

       DBD15: [19200.] 150 Mb -----> UPD15: [19200.] 150 Mb
       Used Blocks: [241467.]   Total: [905417.]   [ 442.098 Mb ]
 ---   Date & Time: Thu 5-Jul-2007 11:48:54 AM
       Restoring ...........................................................
       Logical has been restored & remounted.
 ---   Date & Time: Thu 5-Jul-2007 11:51:37 AM Elapsed Time: 00:02:43   740.696 Kbytes per second

-----  Date & Time: Thu 5-Jul-2007 11:51:37 AM Elapsed Time: 00:13:36
       DBD Logicals are being uninstalled.
```

The program has completed.

.

SAMPLE 2:

```
.BDRES
BDRES Version 8.0(101)-13 - Copyright 2007, Alpha Microsystems

Found the following possible DBD-Recorders:

         ID  Description
 1.       5  SONY    BDRW BWU-100A
 2.       4  HL-DT-STDVD-RAM GSA-H22N

Select one of the above devices: 1
DVD-RAM, BLU-RAY drive found at SCSI id: 5
------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L ----------------------------------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L----------------
DBD000:     231424.         60.     231364.      14464.        0    0 blk TST000: E Open Logical...TST00:...................
DBD001:     231424.         60.     231364.      14464.        F    3 blk TST001: E Open Logical...TST01:...................
DBD002:     231424.       1154.     230270.      14464.       1F    2 blk TST002: E Open Logical...TST02:...................
DBD003:     231424.        137.     231287.      14464.      140    3 blk TST003: E Open Logical...TST03:...................
DBD004:     231424.         60.     231364.      14464.      163    3 blk TST004: E Open Logical...TST04:...................
DBD005:     231424.         60.     231364.      14464.      173    2 blk TST005: E Open Logical...TST05:...................
DBD006:     231424.         60.     231364.      14464.      183    1 blk TST006: E Open Logical...TST06:...................
DBD007:     231424.         60.     231364.      14464.      193    0 blk TST007: E Open Logical ..TST07:...................
DBD008:     231424.         60.     231364.      14464.      1A2    3 blk TST008: E Open Logical...TST08:...................
DBD009:     231424.         60.     231364.      14464.      1B2    2 blk TST009: E Open Logical...TST09:...................
DBD010:     231424.         60.     231364.      14464.      1C2    1 blk TST010: E Open Logical...TST10:...................
DBD011:     231424.         60.     231364.      14464.      1D2    0 blk TST011: E Open Logical...TST11:...................
DBD012:     231424.         60.     231364.      14464.      1E1    3 blk TST012: E Open Logical...TST12:...................
DBD013:     231424.         60.     231364.      14464.      1F1    2 blk TST013: E Open Logical...TST13:...................
DBD014:     231424.         60.     231364.      14464.      201    1 blk TST014: E Open Logical...TST14:...................
DBD015:     231424.         60.     231364.      14464.      211    0 blk TST015: E Open Logical...TST15:...................
DBD016:     231424.         60.     231364.      14464.      220    3 blk TST016: E Open Logical...TST16:...................
DBD017:     231424.         60.     231364.      14464.      230    2 blk TST017: E Open Logical...TST17:...................
DBD018:     231424.         60.     231364.      14464.      240    1 blk TST018: E Open Logical...TST18:...................
DBD019:     231424.         60.     231364.      14464.      250    0 blk TST019: E Open Logical...TST19:...................
DBD020:    1048576.     183837.     864739.      65537.      25F    3 blk NEW000: E Open Logical...NEW00:...................
DBD021:      20480.         21.      20459.       1280.     B5E7    3 blk ACC000: E General Information ....................
DBD022:      20480.      12771.       7709.       1280.     B5ED    3 blk ACC001: E AMOS 1.4E PR06/2000 ....................
DBD023:      20480.      18477.       2003.       1280.     C267    1 blk ACC002: E AMOS 2.3A PR08/2002 ....................
DBD024:      20480.       6545.      13935.       1280.     D473    1 blk ACC003: E Eagle 100TX Terminal Server Flash Rel. .
DBD025:      20480.       5723.      14757.       1280.     DAD8    1 blk ACC004: E Eagle 100MX Fax Server Flash Release ...
DBD026:      20480.      12079.       8401.       1280.     E06F    3 blk ACC005: E Eagle 100MX Fax Server Disk Release ....
DBD027:      20480.       6926.      13554.       1280.     EC3C    1 blk ACC006: E Eagle 450 TX Terminal Server Flash Rel.
DBD028:      20480.       2106.      18374.       1280.     F300    2 blk ACC007: E AlphaFAX 2.0 PR10/99 ...................
DBD029:      20480.       5925.      14555.       1280.     F50F    3 blk ACC008: E AlphaTCP 1.5A PR08/2002 ................
DBD030:      20480.       3000.      17480.       1280.     FAD9    3 blk ACC009: E AlphaWRITE 1.2A PR08/2000 ..............
DBD031:      20480.       6914.      13566.       1280.     FDC8    2 blk ACC010: E AlphaWRITE 2.2 PR06/2000 ...............
DBD032:      20480.       1268.      19212.       1280.    10489    3 blk ACC011: E AlphaCALC 2.0 PR4/99 ...................
DBD033:      20480.       1759.      18721.       1280.    105C7    2 blk ACC012: E ESP 2.2 PR10/99 ........................
DBD034:      20480.        564.      19916.       1280.    10780    0 blk ACC013: E AlphaNET 2.4 PR10/99 ...................
DBD035:      20480.        216.      20264.       1280.    1080D    3 blk ACC014: E OS/EXEC 1.0 ............................
DBD036:      20480.       2065.      18415.       1280.    10844    2 blk ACC015: E VersiCOMM-Plus 3.1 PR08/2002 ...........
DBD037:      20480.        907.      19573.       1280.    10A49    2 blk ACC016: E Appointment Scheduler 3.5 ..............
DBD038:      20480.        154.      20326.       1280.    10B2D    0 blk ACC017: E AlphaRJE 4.0 PR10/96 ...................
DBD039:      20480.        529.      19951.       1280.    10B54    1 blk ACC018: E InSight/am Toolkit 2.0 AMOS ............
DBD040:      20480.        537.      19943.       1280.    10BD9    1 blk ACC019: E UPS Monitor Software V1.3(178) .........
DBD041:      20480.       1401.      19079.       1280.    10C60    1 blk ACC020: E AlphaMAIL 1.2B PR10/99 .................
DBD042:      20480.       1820.      18660.       1280.    10DBF    1 blk ACC021: E AlphaLAN++ 8.0 (Alpha Side) PR08/02 ....
DBD043:      20480.        638.      19842.       1280.    10F87    0 blk ACC022: E MULTI 2.1 PR4/99 .......................
DBD044:      20480.       1032.      19448.       1280.    11027    1 blk ACC023: E Filer 1.4A (ISAM) ......................
DBD045:      20480.       1051.      19429.       1280.    1112A    0 blk ACC024: E Filer 2.0 (ISAM+) ......................
DBD046:      20480.        178.      20302.       1280.    11231    2 blk ACC025: E VPSearch 1.6 PR8/93 ....................
DBD047:      20480.       4701.      15779.       1280.    1125E    3 blk ACC026: E AcuCOBOL-85 2.3B .......................
DBD048:      20480.      12347.       8133.       1280.    116F6    3 blk ACC027: E AlphaC 2.0 (Volume 1 of 2) PR12/97 .....
DBD049:      20480.      19205.       1275.       1280.    12306    1 blk ACC028: E AlphaC 2.0 (Volume 2 of 2) PR12/97 .....
DBD050:      20480.       4280.      16200.       1280.    135C8    1 blk ACC029: E Soft Machines Products .................
DBD051:      20480.      17606.       2874.       1280.    139F7    0 blk ACC030: E Starr Accounting 4.10 Vol #1 ...........
DBD052:      20480.      18673.       1807.       1280.    14B29    1 blk ACC031: E Starr Accounting 4.10 Vol #2 ...........
DBD053:      20480.      12208.       8272.       1280.    15D66    1 blk ACC032: E Metropolis 7.5 (y2k Version) PR08/2002 .
DBD054:      20480.        570.      19910.       1280.    16953    0 blk ACC033: E DART Release (UNSUPPORTED) PR10/99 .....
DBD055:      20480.       1773.      18707.       1280.    169E2    1 blk ACC034: E Unsupported Software PR09/2005 .........
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DBD056:      20480.      19720.        760.       1280.    16B9E   1 blk  ACC035: E AMUS Network Library (1 of 3) ..........
DBD057:      20480.      18220.       2260.       1280.    17EE1   0 blk  ACC036: E AMUS Network Library (2 of 3) ..........
DBD058:      20480.      12343.       8137.       1280.    190AC   3 blk  ACC037: E AMUS Network Library (3 of 3) ..........
DBD059:      20480.        361.      20119.       1280.    19CBB   1 blk  ACC038: E Miscellaneous Software Products ........
DBD060:      20480.       4979.      15501.       1280.    19D16   1 blk  ACC039: E SuperVUE 3.1H PR01/2000 ................
DBD061:     307200.      20928.     286272.      19200.    1A1F3   3 blk  REX000: E AM-8000 8.0 Release & Static Files ......
DBD062:     307200.     216928.      90272.      19200.    1B664   2 blk  REX001: E AM-8000 8.0 Build & Source Files ........
DBD063:     307200.       2617.     304583.      19200.    28A3D   1 blk  REX002: E AM-8000 EAMOS Release ...................
DBD064:     307200.      36155.     271045.      19200.    28CCC   1 blk  REX003: E CD AMOS Release 01/31/2006 .............
DBD065:     307200.      63972.     243228.      19200.    2B01B   3 blk  REX004: E AlphaTCP 1.5A Source & Release .........
DBD066:     307200.       7085.     300115.      19200.    2EE95   2 blk  REX005: E AlphaNET 2.4(159)-4 Rel & Src ..........
DBD067:     307200.      57016.     250184.      19200.    2F581   2 blk  REX006: E AlphaFAX 2.1(100)-1 Rel & Src ..........
DBD068:     307200.      17996.     289204.      19200.    32D30   1 blk  REX007: E MULTI 2.1(192)10 rEL & sRC .............
DBD069:     307200.      40664.     266536.      19200.    33EC4   0 blk  REX008: E AlphaODBC 1.0(100) Rel & Src ...........
DBD070:     307200.       8072.     299128.      19200.    3667A   3 blk  REX009: E AlphaMAIL 1.2B PR09/05 .................
DBD071:     307200.      32551.     274649.      19200.    36E5D   2 blk  REX010: E Xadmin Release & *.INIs ................
DBD072:     307200.       3804.     303396.      19200.    38E28   0 blk  REX011: E Command & Do Files .....................
DBD073:     307200.      84153.     223047.      19200.    391DF   3 blk  REX012: E Open Logical...REX12:...................
DBD074:     307200.      19063.     288137.      19200.    3E40E   3 blk  REX013: E AMPC 7.0 Release .......................
DBD075:     307200.      52946.     254254.      19200.    3F6AD   1 blk  REX014: E AlphaODBC 1.0(100) Rel & Src ver. 1.4Y .
DBD076:     307200.     241467.      65733.      19200.    42A62   2 blk  REX015: E Open Logical...REX15:...................
DBD077:    2048000.     205991.    1842009.     128001.    51632   0 blk  TSS000: E BD TESTING LOGICAL ONLY ................
DBD078:      20480.      11803.       8677.       1280.    5DF5C   2 blk  AMO000: E AMOS 8.1 June 2007 Release .............
DBD079:      20480.       5940.      14540.       1280.    5EAE4   0 blk  AMO001: E AlphaTCP 1.5A June 2007 Release ........
DBD080:      20480.        190.      20290.       1280.    5F0B1   3 blk  AMO002: E AlphaNET 2.4 January 2006 Release ......
DBD081:      20480.       2340.      18140.       1280.    5F0E2   0 blk  AMO003: E AlphaFAX 2.1 February 2007 Release .....
DBD082:      20480.        635.      19845.       1280.    5F32B   3 blk  AMO004: E MULTI 2.1B June 2007 Release ...........
DBD083:      20480.       2995.      17485.       1280.    5F3CB   1 blk  AMO005: E AlphaWRITE 1.2A PR06/2000 ..............
DBD084:      20480.       6914.      13566.       1280.    5F6B8   3 blk  AMO006: E AlphaWRITE 2.2 PR06/2000 ...............
DBD085:      20480.       1268.      19212.       1280.    5FD7A   0 blk  AMO007: E AlphaCALC 2.0 April 2004 Release .......
DBD086:      20480.       1753.      18727.       1280.    5FEB7   3 blk  AMO008: E ESP 2.2 PR10/99 ........................
DBD087:      20480.       1425.      19055.       1280.    6006E   3 blk  AMO009: E AlphaMAIL 1.2B June 2007 Release .......
DBD088:      20480.        482.      19998.       1280.    601D3   3 blk  AMO010: E AM-8000 configuration files *.INIs ......
DBD089:      20480.        663.      19817.       1280.    6024D   0 blk  AMO011: E Eagle 800 configuration files *.INIs ...
DBD090:      20480.      12347.       8133.       1280.    602F3   2 blk  AMO012: E AlphaC (vol 1 of 2) PR12/97 ............
DBD091:      20480.      18993.       1487.       1280.    60F03   0 blk  AMO013: E AlphaC 2.0 (vol 2 of 2) PR12/97 ........
DBD092:      20480.        267.      20213.       1280.    62190   0 blk  AMO014: E XAdmin for AM-8000 Only. Release 1.0 ....
DBD093:      20480.       9061.      11419.       1280.    621D3   2 blk  AMO015: E AlphaODBC 1.4A February 2007 Release ...
DBD094:      20480.       2067.      18413.       1280.    62AAD   2 blk  AMO016: E VersiCOMM-Plus V3.1 and ZARC OCT2004 ...
DBD095:      20480.       1773.      18707.       1280.    62CB3   0 blk  AMO017: E Unsupported Software January 2006 ......
DBD096:      20480.      17914.       2566.       1280.    62E6F   0 blk  AMO018: E AMPC 7.1 Release June 2007 .............
DBD097:      20480.       1866.      18614.       1280.    63FEE   1 blk  AMO019: E d/Soft Release February 2007 ...........
DBD098:      20480.      11921.       8559.       1280.    641C1   2 blk  AMN000: E AMOS 8.1 February 2007 Release .........
DBD099:      20480.       5933.      14547.       1280.    64D66   2 blk  AMN001: E AlphaTCP 1.5A February 2007 Release ....
DBD100:      20480.        190.      20290.       1280.    65332   2 blk  AMN002: E AlphaNET 2.4 January 2006 Release ......
DBD101:      20480.       2339.      18141.       1280.    65362   3 blk  AMN003: E AlphaFAX 2.1 February 2007 Release .....
DBD102:      20480.        634.      19846.       1280.    655AC   1 blk  AMN004: E MULTI 2.1B January 2006 Release ........
DBD103:      20480.       2995.      17485.       1280.    6564B   2 blk  AMN005: E AlphaWRITE 1.2A PR06/2000 ..............
DBD104:      20480.       6913.      13567.       1280.    65939   0 blk  AMN006: E AlphaWRITE 2.2 PR06/2000 ...............
DBD105:      20480.       1268.      19212.       1280.    65FFA   0 blk  AMN007: E AlphaCALC 2.0 April 2004 Release .......
DBD106:      20480.       1753.      18727.       1280.    66137   3 blk  AMN008: E ESP 2.2 PR10/99 ........................
DBD107:      20480.       1431.      19049.       1280.    662EE   3 blk  AMN009: E AlphaMAIL 1.2B PR04/05 .................
DBD108:      20480.        482.      19998.       1280.    66455   1 blk  AMN010: E AM-8000 configuration files *.INIs ......
DBD109:      20480.        663.      19817.       1280.    664CE   2 blk  AMN011: E Eagle 800 configuration files *.INIs ...
DBD110:      20480.      12256.       8224.       1280.    66575   0 blk  AMN012: E AlphaC (vol 1 of 2) PR12/97 ............
DBD111:      20480.      18992.       1488.       1280.    6716D   3 blk  AMN013: E AlphaC 2.0 (vol 2 of 2) PR12/97 ........
DBD112:      20480.        242.      20238.       1280.    683FA   2 blk  AMN014: E XAdmin for AM-8000 Only. Release 1.0 ....
DBD113:      20480.       9060.      11420.       1280.    68437   3 blk  AMN015: E AlphaODBC 1.4A February 2007 Release ...
DBD114:      20480.       2067.      18413.       1280.    68D11   2 blk  AMN016: E VersiCOMM-Plus V3.1 and ZARC OCT2004 ...
DBD115:      20480.       1773.      18707.       1280.    68F17   0 blk  AMN017: E Unsupported Software January 2006 ......
DBD116:      20480.      17835.       2645.       1280.    690D3   0 blk  AMN018: E AMPC 7.0 Release February 2007 .........
DBD117:      20480.       1865.      18615.       1280.    6A23E   2 blk  AMN019: E d/Soft Release February 2007 ...........
DBD118:      20480.      11894.       8586.       1280.    6A411   2 blk  AMM000: E AMOS 8.1 January 31, 2006 Release ......
DBD119:      20480.       5932.      14548.       1280.    6AFAF   3 blk  AMM001: E AlphaTCP 1.5A January 31, 2006 Release .
DBD120:      20480.        191.      20289.       1280.    6B57B   2 blk  AMM002: E AlphaNET 2.4 January 31, 2006 Release ..
DBD121:      20480.       2334.      18146.       1280.    6B5AC   0 blk  AMM003: E AlphaFAX 2.1 March 1, 2005 Release .....
DBD122:      20480.        634.      19846.       1280.    6B7F4   1 blk  AMM004: E MULTI 2.1B January 31, 2006 Release ....
DBD123:      20480.       2995.      17485.       1280.    6B893   2 blk  AMM005: E AlphaWRITE 1.2A PR06/2000 ..............
DBD124:      20480.       6914.      13566.       1280.    6BB81   0 blk  AMM006: E AlphaWRITE 2.2 PR06/2000 ...............
DBD125:      20480.       1268.      19212.       1280.    6C242   1 blk  AMM007: E AlphaCALC 2.0 April 22, 2004 Release ...
DBD126:      20480.       1754.      18726.       1280.    6C380   0 blk  AMM008: E ESP 2.2 PR10/99 ........................
DBD127:      20480.       1431.      19049.       1280.    6C537   1 blk  AMM009: E AlphaMAIL 1.2B PR04/05 .................
DBD128:      20480.        654.      19826.       1280.    6C69D   3 blk  AMM010: E AM-8000 configuration files *.INIs.......
DBD129:      20480.        663.      19817.       1280.    6C742   0 blk  AMM011: E Eagle 800 configuration files *.INIs....
DBD130:      20480.      12258.       8222.       1280.    6C7E8   2 blk  AMM012: E AlphaC (vol 1 of 2) PR12/97 ............
DBD131:      20480.      18993.       1487.       1280.    6D3E1   3 blk  AMM013: E AlphaC 2.0 (vol 2 of 2) PR12/97 ........
DBD132:      20480.        226.      20254.       1280.    6E66E   3 blk  AMM014: E XAdmin for AM-8000 Only. Release 1.0.....
DBD133:      20480.       8901.      11579.       1280.    6E6A8   0 blk  AMM015: E AlphaODBC 1.4Y January 31,2006..........
DBD134:      20480.       2062.      18418.       1280.    6EF5A   0 blk  AMM016: E VersiCOMM-Plus V3.1 and ZARC OCT2004....
DBD135:      20480.       1773.      18707.       1280.    6F15E   1 blk  AMM017: E Unsupported Software January 31, 2006 ..
DBD136:      20480.      18633.       1847.       1280.    6F31A   1 blk  AMM018: E AMPC 7.0 Bootable Release Jan2006.......
```

```
DBD137:      20480.          9.      20471.       1280.     7054D   1 blk  AMM019: E Open Logical ...........................
DBD138:     204800.     162036.      42764.      12800.     70550   1 blk  DSK000: E AMOS System Disk (Oct2004)..............
DBD139:     204800.     152190.      52610.      12800.     7A38E   0 blk  DSK001: E Working Logical for CD "OCT" Release ...
DBD140:     204800.       9839.     194961.      12800.     8382E   1 blk  DSK002: E AlphaC 1.1(406) Release Logical ........
DBD141:     204800.      21720.     183080.      12800.     841CA   3 blk  DSK003: E LOTTO: & UNOFICIAL WIP..................
DBD142:     204800.      34277.     170523.      12800.     85701   2 blk  DSK004: E Folders from Library System ............
DBD143:     204800.      29214.     175586.      12800.     8787B   2 blk  DSK005: E OPEN LOGICAL ...........................
DBD144:     204800.      32100.     172700.      12800.     89503   3 blk  DSK006: E SSD Stuf for AMOS Systems (Current).....
DBD145:     204800.      57897.     146903.      12800.     8B45D   2 blk  DSK007: E MEXICO'S VERSION OF ALPHAFAX............
DBD146:     204800.      37409.     167391.      12800.     8ECE8   2 blk  DSK008: E OPEN LOGICAL ...........................
DBD147:     204800.      44953.     159847.      12800.     91171   2 blk  DSK009: E AlphaFAX Accounts ......................
DBD148:     204800.      27154.     177646.      12800.     93D58   2 blk  DSK010: E Metropolis Source from Barry on 08/23/05
DBD149:     204800.      47953.     156847.      12800.     957DD   3 blk  DSK011: E Backup of AND0:[] World Fence News DSK0:
DBD150:     204800.      50552.     154248.      12800.     986B2   3 blk  DSK012: E AlphaTCP 1.5A Release & Source WIP JC ..
DBD151:     204800.     134200.      70600.      12800.     9B811   2 blk  DSK013: E D/SOFT SOURCE WIP ......................
DBD152:     204800.      35733.     169067.      12800.     A3B20   1 blk  DSK014: E SSD Stuf for AMOS Systems...............
DBD153:     204800.      28233.     176567.      12800.     A5E06   1 blk  DSK015: E D/SOFT SOURCE WIP (CONT.) ..............
DBD154:     204800.      28736.     176064.      12800.     A7999   1 blk  DSK016: E Backup Copy of amd_files\Jose.amd.......
DBD155:     204800.      64765.     140035.      12800.     A95AA   0 blk  DSK017: E ISAM TESTING LOGICAL ...................
DBD156:     204800.      54594.     150206.      12800.     AD4EA   0 blk  DSK018: E CD Update AlphaFAX 2.1(100)-8...........
DBD157:     204800.     100907.     103893.      12800.     B0A3B   1 blk  DSK019: E OPEN LOGICAL ...........................
DBD158:     231424.     151778.      79646.      14464.     B6CC6   3 blk  UPD000: E METROPOLIS SOURCE FILES MET00:-MET19:...
DBD159:     231424.      87003.     144421.      14464.     C0100   0 blk  UPD001: E ***** No Label *****
DBD160:     231424.      86383.     145041.      14464.     C55F7   2 blk  UPD002: E ***** No Label *****
DBD161:     231424.      82310.     149114.      14464.     CAA54   0 blk  UPD003: E ***** No Label *****
DBD162:     231424.      70025.     161399.      14464.     CFAB6   1 blk  UPD004: E ***** No Label *****
DBD163:     231424.      31219.     200205.      14464.     D3F19   1 blk  UPD005: E ***** No Label *****
DBD164:     231424.      37498.     193926.      14464.     D5D96   3 blk  UPD006: E ***** No Label *****
DBD165:     231424.      25669.     205755.      14464.     D8236   0 blk  UPD007: E ***** No Label *****
DBD166:     231424.      46682.     184742.      14464.     D9B48   0 blk  UPD008: E ***** No Label *****
DBD167:     231424.      12575.     218849.      14464.     DC8DF   1 blk  UPD009: E ***** No Label *****
DBD168:     231424.     105815.     125609.      14464.     DD527   3 blk  UPD010: E ***** No Label *****
DBD169:     231424.      82987.     148437.      14464.     E3C7E   1 blk  UPD011: E DB.COD 226-222-016-212 7.5(180) ........
DBD170:     231424.     167523.      63901.      14464.     E8D89   3 blk  UPD012: E ***** No Label *****
DBD171:     231424.      37236.     194188.      14464.     F3123   1 blk  UPD013: E ***** No Label *****
DBD172:     231424.      11755.     219669.      14464.     F5581   0 blk  UPD014: E ***** No Label *****
DBD173:     231424.      16106.     215318.      14464.     F60FC   2 blk  UPD015: E ***** No Label *****
DBD174:     231424.      92088.     139336.      14464.     F70B7   3 blk  UPD016: E 7.4 Flip Source & Others ...............
DBD175:     231424.     132169.      99255.      14464.     FCAA6   2 blk  UPD017: E ***** No Label *****
DBD176:     231424.     101411.     130013.      14464.    104BB9   2 blk  UPD018: E ***** No Label *****
DBD177:     231424.      72597.     158827.      14464.    10AEC3   0 blk  UPD019: E ***** No Label *****
------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L ---------------------------------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L---------------
TOTAL:    23412736.    4445326.   18967410.      Media Label: "NIGHTLY BACKUP ALL DEVICES"
   (megabytes)  11432.000    2170.569    9261.431
   (gigabytes)     11.1641      2.1197      9.0444

   DBD media contains 178 logical units.

          Which DBD Logical(s) would you like to restore?
          Each DBD Logical entered may have one MASK following it.  A space must
          separate the DBD Logical and the MASK.  MASK characters are (?) &(*).
          (e.g.: DBD0: *.DIR[1,2], DBD5: A*.LIT[1??,*] or DBD16: FLP*.*[] )
          Enter list of disk Logicals to be transferred.  Disk Logicals may
          be entered as a range (e.g.: DBD0: -20 for DBD0: thru DBD20:), or
          may be comma separated, The list is terminated with a blank line:
   *DBD61: -76 *.LIT[1,4]
   *
```

With Wildcarding

```
           Which Disk Logical(s) would you like to restore to?
           Enter list of disk Logicals to be transferred.  Disk Logicals may
           be entered as a range (e.g.: DBD0: -20 for DBD0: thru DBD20:), or
           may be comma separated, The list is terminated with a blank line:
   *UPD0: -15
   *
   -----   Date & Time: Thu 5-Jul-2007 01:45:12 PM

           File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
           DBD61: [19200.] 150 Mb -----> UPD0: [19200.] 150 Mb
     ---   Date & Time: Thu 5-Jul-2007 01:45:15 PM
```

```
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 01:53:18 PM Elapsed Time: 00:08:03
        Restored 204 files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD62: [19200.] 150 Mb -----> UPD1: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 01:53:20 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 01:53:20 PM Elapsed Time: 00:00:00
        Restored (0.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD63: [19200.] 150 Mb -----> UPD2: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 01:53:21 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 01:55:17 PM Elapsed Time: 00:01:56
        Restored (106.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD64: [19200.] 150 Mb -----> UPD3: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 01:55:17 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 01:55:17 PM Elapsed Time: 00:00:00
        Restored (0.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD65: [19200.] 150 Mb -----> UPD4: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 01:55:19 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:00:47 PM Elapsed Time: 00:05:28
        Restored (35.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD66: [19200.] 150 Mb -----> UPD5: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:00:48 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:00:52 PM Elapsed Time: 00:00:04
        Restored (14.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD67: [19200.] 150 Mb -----> UPD6: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:00:52 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:01:01 PM Elapsed Time: 00:00:09
        Restored (8.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD68: [19200.] 150 Mb -----> UPD7: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:01:02 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:01:12 PM Elapsed Time: 00:00:10
        Restored (2.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD69: [19200.] 150 Mb -----> UPD8: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:01:13 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:02:44 PM Elapsed Time: 00:01:31
        Restored (3.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD70: [19200.] 150 Mb -----> UPD9: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:02:44 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:02:45 PM Elapsed Time: 00:00:01
        Restored (6.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD71: [19200.] 150 Mb -----> UPD10: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:02:45 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:02:46 PM Elapsed Time: 00:00:01
        Restored (1.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD72: [19200.] 150 Mb -----> UPD11: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:02:46 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:02:46 PM Elapsed Time: 00:00:00
        Restored (0.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD73: [19200.] 150 Mb -----> UPD12: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:02:47 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:02:47 PM Elapsed Time: 00:00:00
        Restored (0.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD74: [19200.] 150 Mb -----> UPD13: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:02:50 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:15:36 PM Elapsed Time: 00:12:46
        Restored (267.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD75: [19200.] 150 Mb -----> UPD14: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:15:36 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:16:59 PM Elapsed Time: 00:01:23
        Restored (4.) Files.

        File Name Mask: "******.LIT[001,004]"    ENTERED: "*.LIT[1,4]"
        DBD76: [19200.] 150 Mb -----> UPD15: [19200.] 150 Mb
  ---   Date & Time: Thu 5-Jul-2007 02:16:59 PM
        Files have been restored.
  ---   Date & Time: Thu 5-Jul-2007 02:16:59 PM Elapsed Time: 00:00:00
        Restored (0.) Files.

-----   Date & Time: Thu 5-Jul-2007 02:16:59 PM Elapsed Time: 00:31:47
        DBD Logicals are being uninstalled.

        The program has completed.
.
```

REQUIREMENTS AND SETUP

DBD requires the following:

- AM-8000, Eagle 800, or AMPC 7.X based systems
- AMOS 8.1 or later
- A supported DVD-RAM or Blu-ray drive.

✋ **BDRES is only supported on AM-8000, Eagle 800, and AMPC 7.X Systems.**

The DBD package contains the following required files:

- DBD.LIT
- The device driver (DBD.DVR) for the DVD-RAM and Blu-ray drive, in system memory.
- The SSD overlay file (DVD000.OVR)
- MAKBD.LIT
- DIRBD.LIT
- BDRES.LIT

MODIFYING THE SYSTEM INITIALIZATION FILE:

You must load the device driver into system memory during system initialization by adding the following statement in your system initialization file:

```
SYSTEM DSK0:DBD.DVR[1,6]
```

This statement should be added in the same area of the system initialization file that is currently loading other system device drivers.

MESSAGES

Command line syntax messages:

- Invalid switch
- Invalid switch option

System requirements messages:

- BDRES requires AMOS 8.x or compatible operating system.
- If your memory partition is too small for MAKBD, the following message will display:
  %Error - Memory requirements have not been met. CODE: N.
  - Minimum memory to run BDRES.LIT is 1,240 KB (1,269,760 bytes)

DVD-RAM or Blu-ray Recorder device or driver messages:

- Device specified is not a DVD-RAM or Blu-ray Recorder.

- Unable to find a DVD-Recorder.

Error messages when setting up or reading from the DVD or Blu-ray Recorder

- Error - Buffer not initialized.
- Error - Device is already in use.
  This indicates that either another user is running the BDRES program or the DVD is being used in shared read/write mode.
- Error - Disk in DVD-Recorder is not writeable.
- Error - DBD driver must be in system memory.
- Error - Unable to load DVD media.
  This indicates a hardware problem with the DVD-RAM drive or a problem with the DVD media.
- Error - Unable to read disk information from media.
  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Fatal SCSI error. Sense key=nn additional sense=nn
  DVD drive device error has occurred. Sense key and additional sense provide further error information.
- Please insert a DVD-RAM media
- Warning - Maximum number of devices exceeded - extras ignored.
- Warning - Unable to close DVD.
  Device error occurred while closing the current DVD. The DVD-RAM may or may not be usable.
- SCSI error message from the driver
  DVD-RAM drive device error has occurred. Code provides additional SCSI error sense information.

```
SCSI error – SCSI status =(nn)
            sense key = xx      ssssssssssssss  Add Sense Code/Qualifier Code = ac.qc

              nn      =  SCSI Status Code
              xx      =  SCSI Sense Key code
              ssss    =  Interpreted sense key code if known
              ac      =  SCSI Additional Sense Code
              qc      =  SCSI Qualifier Code
```

Errors concerning the AMOS DVD-RAM or BD-RE data structure:

- Error - Disk geometry calculation was incorrect.
  The AMOS hidden sector parameters calculated are invalid.
- Error - memory previously calculated as available isn't
  Memory required for data buffers has increased.
- Error - Unable to calculate AMOS disk geometry.
  The AMOS hidden sector parameters could not be calculated.
- Error - unable to get AMOS data buffer
  The system was unable to acquire memory for data buffers.
- Error- Unable to remove DVD Recorder data buffer from memory.

Normal informational messages:

- The program has completed
  The recording of data from the DVD media is done.
- DVD-RAM Recorder located at SCSI id n
  This shows the SCSI id of the DVD-RAM Drive being used.
- Note that once started, the restoring operation can be stopped by pressing ^C.
  However, if the restoring is stopped, a DSKANA or SYSACT to the last logical that was interrupted needs to be performed. The last logical that was interrupted will have a mixture of new and old blocks that will cause problems.
- Restoring DSK0:

BITMAP

FUNCTION

Displays memory locations used by AMOS.

CHARACTERISTICS

BITMAP is re-entrant and re-usable.

A bitmap is a storage allocation map that tells the system which disk records are free and which are in use. The bitmap is originally set up in your system initialization command file using BITMAP statements. See your *System Operator's Guide to the System Initialization Command File* for more information.

OPERATION

Enter BITMAP:

```
BITMAP RETURN
```

The display you see tells you what memory locations have been assigned to the disk bitmaps defined at the time of system initialization. For example, you might see something like this:

```
DSK0 - Bitmap DDB at 55349, buffer at 394938, paged bitmap (16665 words) |
```

or:

```
DSK0 - Bitmap DDB at 430, buffer at 402, size of 810. words
MIN0 - No bitmap allocated
```

Each line of the BITMAP display gives you the following information:

```
Devn - Bitmap DDB at x, buffer at y, paged bitmap, size                  |
```

x is the memory location of the bitmap DDB and ***y*** is the location of its buffer.

MESSAGES

?Cannot allocate bitmaps after system startup

At AMOS level, BITMAP has no specifications or options. Try again, entering only BITMAP RETURN.

CACHE

FUNCTION

Allows you to control the Disk Cache Buffer system, and to find out information about it. Disk "caching" may speed up your system by reducing disk access.

CHARACTERISTICS

CACHE is re-entrant and re-usable. For more information on setting up and using the cache, see your *System Operator's Guide.*

When used from an operator's account [1,2] or from [1,4], CACHE puts you in an interactive mode in which you can modify the cache. When used from any other account, CACHE displays statistics about the disk cache system.

OPERATION

Enter CACHE at AMOS command level. For example:

```
CACHE RETURN
```

Normally, you see the CACHE display. When used from [1,2] or [1,4], CACHE enters an interactive mode. In interactive mode, you see an asterisk prompt symbol. The format for an interactive command in this mode is:

```
command{switch} {device}{filename}
```

The commands are:

ON	Turn on the disk cache system.
OFF	Turn off the disk cache system.
LOCK	Lock the specified block or file in the cache.
UNLOCK	Unlock the specified block or file.
CLEAR	Remove the specified block or file from the cache.
STATUS	Display statistics about the cache.
HELP	List the available commands.
LIST	List static, dynamic, or hash blocks (you must specify a switch).
EXIT	Return to AMOS.

The switches for the LOCK, UNLOCK, and CLEAR commands are:

/BLOCK	Perform the operation on a specified block.
/FILE	Perform the operation on the specified file.
/MFD	Perform the operation on the specified MFD.
/UFD	Perform the operation on the specified UFD.

The switches for the LIST command are:

/STATIC	List the blocks in the static queue.
/DYNAMIC	List the blocks in the dynamic queue.
/HASH	List the blocks in the hash queue.

The switches may be abbreviated.

You can use an ersatz name for the device specification.

Here are some examples:

```
*ON RETURN
*UNLOCK/F PAYROL.DAT RETURN
*LOCK/MFD DSK0:,DSK2: RETURN
*CLEAR/FILE DSK1:PAYROL.DAT[126,10] RETURN
```

You may add a CACHE command to your System Initialization Command File after the final SYSTEM command so the CACHE is set up at the time of system bootup.

MESSAGES

?Argument error

You specified an invalid argument in the input line. An arrow (^) points to the incorrect part of the line.

?Command error

You specified an invalid command name in the input line. An arrow (^) points to the incorrect command.

?Disk cache does not exist

The disk cache file, DCACHE.SYS, does not exist, is in the wrong account, or was not loaded into system memory by your system INI file. Check to see DCACHE.SYS exists in DSK0:[1,4], and use SYSTEM to be sure it's loaded.

?Disk cache is already OFF
?Disk cache is already ON

You tried changing the state of the disk cache to the state it was in already. The command is ignored.

Disk cache is OFF

The disk cache was not enabled at bootup time or has been turned off with the OFF command. Edit your system command initialization file to enable the disk cache, and reboot the system.

?Network access denied

You specified a device on another computer networked to your own. You cannot use CACHE across the network.

?Not enough cache space available

There are not enough disk buffers available in the cache to lock the MFD, UFD, file, or block you specified. You may have to allocate more memory to the disk cache system.

?Specification error

You made a syntax error in the input line. An arrow (^) points to the error.

?Switch error

You specified an invalid switch. See the operation section above for the switches and re-enter the command.

CAL100

FUNCTION

Calibrates the time-of-day clock oscillator on AM-100/L, AM-1000, AM-1200, AM-1500, and AM-2000 series systems.

CHARACTERISTICS

CAL100 is re-entrant and re-usable. For further information on calibration, see your *Alpha Micro Integrated Systems User's Guide*.

✋ ***This program is only for use by qualified maintenance personnel. Requires the use of a high-precision counter for the calibration procedure.***

The CPU is shipped from the factory fully calibrated. Normally, you will not need to re-calibrate the time-of-day clock. You will only need to use this program if the time-of-day clock oscillator is out of calibration when you initially install the CPU board in the system, or during subsequent maintenance.

After you have completed the calibration procedure, you should reset the clock/calendar by using the TIME and DATE commands.

OPERATION

Enter CAL100 at AMOS command level:

```
CAL100 RETURN
```

Adjust the trimmer capacitor to exactly 1024 Hz at the calibration test point. When you have completed the calibration procedure, press CTRL/C to exit CAL100.

MESSAGES

?This program is not supported.

You cannot use CAL100 on this computer.

CBDS

FUNCTION

Disables the cache for certain high-performance Alpha Micro Central Processing Unit (CPU) boards, such as those using the 68030, 68040, or 68060 CPU.

CHARACTERISTICS

CBDS is re-entrant and re-usable.

If the cache is already disabled, or if there is no on-board memory cache on your system, CBDS has no effect.

The on-board memory cache controlled by CBEN/CBDS should not be confused with the memory cache contained on the CPU chip itself.

The on-chip cache is an instruction cache only. The on-board cache is a combined instruction and data cache that is transparent to users and programmers in everyday use. Both the on-chip and on-board caches are enabled at bootup time automatically. The on-chip cache is turned on and off by executing a sequence of program instructions (see the *AMOS Monitor Calls Manual* for details), whiile the on-board cache is turned off by the CBDS command and re-enabled by the CBEN command.

The on-board cache is not affected by the COMPAT database: Self-modifying code does not have to deal with the on-board cache.

OPERATION

Type **CBDS** and press RETURN:

```
CBDS RETURN
```

MESSAGES

?This program is not supported

Your system is not running either a RoadRunner CPU board or the AMOS/32 operating system. The on-board cache is not supported.

CBEN

FUNCTION

Enables the cache for certain high-performance Alpha Micro CPU boards, such as those using the 68030, 68040, and 68060 CPUs. The on-board memory cache improves system performance by holding frequently used instructions and data in high-speed memory to eliminate slower accesses to main memory.

CHARACTERISTICS

CBEN is re-entrant and re-usable.

The on-board memory cache controlled by CBEN/CBDS should not be confused with the memory cache contained on the CPU chip itself. The on-chip cache is an instruction cache only. The on-board cache is a combined instruction and data cache that is transparent to users and programmers in everyday use. Both the on-chip and on-board caches are enabled at bootup time automatically. The on-chip cache is turned on and off by executing a sequence of program instructions (see the *AMOS Monitor Calls Manual* for details), while the on-board cache is turned off by the CBDS command, and re-enabled by the CBEN command.

The on-board cache is not affected by the COMPAT database: self-modifying code does not have to deal with the on-board cache.

If you use CBDS to disable the cache during testing or debugging, you then need to use CBEN (or reboot your computer) to re-enable it.

If you use CBEN and the cache is already enabled, it causes the cache to be flushed. If there is no on-board memory cache on your system, CBEN has no effect.

OPERATION

Type **CBEN** and press RETURN:

```
CBEN RETURN
```

MESSAGES

?This program is not supported

Your system is not running either a RoadRunner CPU board or the AMOS/32 operating system. The on-board cache is not supported.

CDIR

FUNCTION

Displays the full name, uncompressed size and file type for a file compressed by the CMP command.

CHARACTERISTICS

CDIR is an OS/Exec program that may be used as an AMOS command. CDIR can also display one file at a time—multiple files may be processed using the "CDIR" function in OS/Exec. Only files compressed using the OS/Exec program CMP may be CDIR'd.

The CTYPE command can be used to display the contents of a compressed sequential file. The EXP command can be used to expand a file that was compressed using the OS/Exec program CMP.

FORMAT

```
CDIR filespec
```

DEFAULTS

CDIR assumes an extension of CMP.

OPERATION

Enter CDIR and the specification of the file. For example:

```
CDIR TRANS RETURN
```

CDIR now displays a message listing the file name, uncompressed size in blocks, and the type of file:

```
TRANS.CMP  is   TRANS.TXT     43     sequential
```

MESSAGES

File is not an OS/Exec compressed file

Use the DIR or TYPE command to get information about the file.

The file specified is not in the format expected by CDIR.

Use the DIR or TYPE command to get information about the file.

CLEAR

FUNCTION

Writes zeros to all (or to a specified number) of the free blocks on the specified disk.

CHARACTERISTICS

CLEAR is re-entrant and re-usable. When you erase a file from the disk, the data is not destroyed—only the "access" to it is. Until those blocks are used again, the contents of the file remain. CLEAR guarantees the data is overwritten with zeros so it cannot be retrieved.

You must be logged into DSK0:[1,2] to run CLEAR. You can't use CLEAR across a network. CLEAR locks the logical disk you specify so nobody else can access it until CLEAR is finished. CLEAR will NOT write to any blocks marked in the bitmap as being in use.

FORMAT

```
CLEAR devn:
```

DEFAULTS

CLEAR assumes you want to clear all the free blocks on the disk if you do not specify a number of blocks to clear.

OPERATION

Log into OPR:. Enter CLEAR and the device you want to clear. For example:

```
CLEAR DSK3: RETURN
```

You then see:

```
How many blocks do you want to clear?
```

You may press CTRL/C at any time to stop the program.

If you just press RETURN, CLEAR will write zeros to all of the free blocks on the disk. CLEAR displays a period for every block it clears. When CLEAR is finished, it displays the number of blocks cleared. This number may be smaller than the number you specified if there were fewer free blocks on the disk than the number of blocks you asked to clear.

MESSAGES

?Cannot use CLEAR over network

You cannot CLEAR disks on another system through a network.

?File specification error

Try again, using a valid device name. Use SYSTAT to display a list of active devices for your system.

?Invalid number, try again

You entered an illegal number. Try again, using a positive whole number.

?Privileged program -- must be logged into [1,2]

Log into [1,2] and try again.

CMP

FUNCTION

Compresses an AMOS file.

CHARACTERISTICS

CMP is an OS/Exec program that may be used as an AMOS command. Although CMP can only compress one file at a time, multiple files may be compressed using the "Compress" function in OS/Exec.

Compress DOES NOT delete the files it compresses. This must be done as a separate operation.

Prior to erasing the uncompressed files, make a backup copy of them as a precaution.

Files are compressed using a one pass adaptive algorithm. Files need not contain repeated characters to be compressed. Virtually all uncompressed files are compressible. CMP can process sequential and contiguous (i.e. random) files. The resulting compressed files are in the sequential file format.

The CTYPE command can be used to display the contents of a compressed sequential file. The CDIR command can be used to list the type, size and name of a file that has been compressed.

FORMAT

```
CMP filespec
```

If no file extension is specified, CMP assumes an extension of TXT.

OPTIONS

No switches are currently defined.

OPERATION

Type CMP followed by the specification of the file you want to compress, then press RETURN. For example:

```
CMP TRANS.TXT RETURN
```

CMP now displays a message indicating compression of the file is in progress:

```
Compressing TRANS.TXT........................
```

Each dot represents a block of the uncompressed file. When compression is done, a message is output indicating the name of the compressed file and the amount of compression achieved. For example:

```
TRANS.CMP compressed  37.7%
```

When a file, such as "NAME.EXT" is processed, the compressed file is named "NAME.CMP", unless "NAME.CMP" already exists. In this case the file is named "NAME.C00", or "NAME.C01", etc., depending on how many such files already exist.

If the file processed has already been compressed, the resulting "compressed" file will likely be larger than the original file. In this case the compression percentage is negative.

MESSAGES

?FILE.EXT not found

Check your syntax or your directory and try again.

?More than 101 files with this file name
Rename and recompress

Erase or rename older compressed files and try again.

COMPAT

FUNCTION

Allows you to list programs to be run with the instruction cache on a 68030 or later CPU disabled. Some programs which use self-modifying code will not run properly with the on-chip instruction cache enabled.

CHARACTERISTICS

COMPAT is re-entrant and re-usable. It lets you run some programs with instruction cache disabled while all other programs run with the cache on. The programs to run with the cache disabled are listed in a text file in SYS: named COMPAT.DAT.

The proper way to solve the problem of self-modifying code and the instruction cache is to modify the program so it either doesn't use self-modifying code or it disables and enables the instruction cache. You should use COMPAT only when you have programs which, for some reason, cannot be properly modified.

You can include COMPAT in your system initialization file so the listed programs are never run with the cache enabled.

COMPAT checks the name of the current program, held in the JOBPRG field in the job's job control block, against the COMPAT database. If a program modifies the JOBPRG field, it will be incorrectly run with the instruction cache enabled. Also, if there are two programs of the same name located on different devices and/or accounts, both are affected by the entry into the COMPAT database: you cannot differentiate one from the other without renaming one.

The external on-board cache (controlled by the CBDS and CBEN commands) does not need controlling in the same way. The on-board cache is transparent in operation and is not affected by such programming tricks as self-modifying code.

FORMAT

```
COMPAT {COMPAT.DAT}
```

OPERATION

Entering COMPAT with COMPAT.DAT on the command line disables caching for the programs listed in the COMPAT.DAT file. In COMPAT.DAT, list the programs one to a line. List only the program name, with no file extension or account specification. You can put comments in COMPAT.DAT by starting a line with a semi-colon. Here is a sample COMPAT.DAT, using fictitious program names:

```
SCHDLP
INIJOB
; This is a comment
```

When you enter COMPAT by itself, it shows statistics for each program set to run without instruction caching, listing what percentage of CPU context switches are non-cached. For example:

```
The following programs run with internal cache disabled:

  SCHDLP  (active in 1.2% of total context switches, 80% of non-cached)
  INIJOB  (active in 0.3% of total context switches, 20% of non-cached)

A total of 1.5% of context switches were non-cached
```

MESSAGES

?Invalid program spec: [name]

There is an invalid program name in the COMPAT.DAT file. Edit the file and correct the error.

?COMPAT requires 68030 processor or better to run

Your computer does not have an instruction cache; you do not need to use COMPAT.

?Cache compatibility mode is not active

You have not specified any programs to run with the cache disabled.

COMPIL

FUNCTION

Compiles AlphaBASIC programs, producing an executable .RUN file.

CHARACTERISTICS

COMPIL is re-entrant and re-usable. The program you compile is a BASIC source program previously saved after using AlphaBASIC in interactive mode, or created using AlphaVUE. For more information on COMPIL, RUN, and BASIC, see your *AlphaBASIC User's Manual*.

COMPIL does not require your AlphaBASIC program to have line numbers. If COMPIL finds an error, it does not produce a .RUN file.

FORMAT

```
COMPIL filespec{/switch(s)}
```

filespec is the file containing the program you want to compile and ***switch*** is an option request. COMPIL assumes an extension of .BAS.

OPTIONS

/A Selects long addressing mode (24-bit).

/L Creates a file listing your program line by line after an offset number, so errors can be easily found.

/M Displays message for each unmapped variable.

/N Suppresses printing of COMPIL statistics.

/O Omits line number references from compiled code to reduce size. Error messages won’t report line numbers.

/T Displays each line as it compiles, to help find errors.

OPERATION

Enter COMPIL and the specification of the file you want to compile. For example:

```
COMPIL PROJCT.BAS RETURN
```

COMPIL displays messages after the command line showing the compilation status. When COMPIL finishes, and if it found no errors, it produces a file containing a compiled program. This file has the same name as the file you specified on the COMPIL command line, but with a .RUN extension. To execute this file, use RUN.

MESSAGES

The AlphaBASIC error messages are explained in your AlphaBASIC User's Manual.

COMPLP

FUNCTION

Compiles an AlphaBASIC PLUS source file.

CHARACTERISTICS

COMPLP is re-entrant and re-usable. See the *AlphaBASIC PLUS User's Manual* for information about the AlphaBASIC PLUS programming language.

CONT

FUNCTION

Resumes execution of a command file previously interrupted by a PAUSE command.

CHARACTERISTICS

CONT is a .DO file located in DSK0:[2,2].

When you are using a command file, and its execution is interrupted because of a PAUSE command in that file, you are then returned to AMOS command level. At that point, you can use other command files, run programs, use the text editor, etc. When you are ready to resume execution of the command file, you may use CONT to do so.

When command file execution is interrupted, PAUSE saves the remainder of the unexecuted command file in a disk file named CNT.CMD in the account the command file is logged into. CONT loads the CNT.CMD file into memory from the account you are logged into and executes it. Therefore, do not erase CNT.CMD from that account, unless you do not intend to continue the command file. Each use of a PAUSE command erases any current CNT.CMD file and creates a new one.

OPERATION

Enter CONT at AMOS command level:

```
CONT RETURN
```

After CONT loads CNT.CMD into memory and processes it, CONT erases the CNT.CMD file from the disk. You may also include CONT within another command file, which then resumes execution of the first command file.

MESSAGES

?CAN'T CONTINUE

No CNT.CMD file exists in the account you are logged into. Make sure you are logged into the correct account. Use DIR to locate the CNT.CMD file.

COPY

FUNCTION

Copies one or more files. You can copy within an account, between accounts, and between disks. Also copies files across AlphaNET networks. Can also copy files to a terminal or to and from user memory.

CHARACTERISTICS

COPY is re-entrant and re-usable. You may use the ersatz names defined for your system. You may not copy to an account if it is not in the project you are logged into, unless you are logged into an operator's account, [1,2]. You may copy files into your account from any other account, regardless of project number. COPY ignores files without any contents.

You must have the correct driver program loaded into system memory if you wish to COPY from a peripheral device.

COPY is a wildcard file command. See your *AMOS User's Guide* for more information on wildcarding.

The file BADBLK.SYS[1,2] is created by a disk certification program for certain kinds of disk devices. It contains a list of the bad blocks or tracks on those devices. You must never destroy or alter the contents of a BADBLK.SYS[1,2] file. To protect the integrity of a device's certification data, COPY won't overwrite BADBLK.SYS[1,2].

COPY supports command file error checking. See your *Command File User's Manual.*

FORMAT

```
COPY {newfspec}={filespec{,...filespec}}{/switch}
```

newfspec is the specification of the file to be created, and the ***filespec(s)*** are the files to be copied. A ***switch*** is an option request.

To copy to a terminal, newfspec is the name of the terminal, in the format `TRM:terminal-name`. You can only copy to a terminal which uses the TRM driver.

DEFAULTS

The initial default filespec is *.* and the account and device you are logged into. The default newfspec is *.* and the account and device you are logged into unless you are logged into [1,2], in which case it is *.*[ ] and the device you are logged into. The default switches are /D, /NOQ, /NOR, and /NOS.

OPTIONS

All the switches are file switches, and may be abbreviated.

/QUERY	Confirm before copying.
/NOQUERY	Don't confirm copy. Default.
/DELETE	Overwrite existing file. Default.
/NODELETE	Don't overwrite existing file.
/REPLACE	Overwrite existing files only. Do not copy if there is no existing file.
/NOREPLACE	Do not overwrite existing files only. Default.
/SUPPRESS	Don't display the name of each file as it is copied. Display the total number of files transferred at the end of the copy.
/NOSUPPRESS	Display each file name as it is copied. Default.

OPERATION

Enter COPY and the file specifications for the new file and the files you want copied. For example:

```
COPY SORT.TXT=WORK1.TXT RETURN
WORK1.TXT to SORT.TXT
Total of 1 file transferred
```

Remember you can use wildcard symbols, and COPY assumes certain filespec defaults. For example:

```
COPY DSK1:*.OLD=*.NEW RETURN
```

copies all files with a .NEW extension from the account and device you are logged into over to the same account on DSK1:. The new files have the same names, but have extension .OLD.

When you use the /Q switch, COPY asks you for confirmation of each transfer. Remember the placement of the switch on the command line can affect which files it affects. When COPY prompts you for confirmation, answer with a Y for Yes or an N for No. Do not press RETURN after your answer. For example:

```
COPY SRCFIL[110,2]=WRKFIL/QUERY RETURN
WRKFIL.BAS TO SRCFIL.BAS[110,2]? Y
WRKFIL.RUN TO SRCFIL.RUN[110,2]? N
```

You may use CTRL/C at any time to halt the copy.

To copy to a terminal, use the terminal name in place of the new file specification. For example:

```
COPY TRM:TRM2=SYS:AMOS.INI RETURN
```

This displays the contents of AMOS.INI on the terminal TRM2.

MESSAGES

?Account does not exist - [x,x]

You specified an account that does not exist. Check your typing, find the correct account, or create the account you need.

?Attempt to copy file to self

You specified (or wildcard processing yielded) the same name for the output file as the input file. You cannot copy a file onto itself.

%Bypassing BADBLK.SYS[1,2]
BADBLK.SYS exists to prevent bad blocks
on a device from being allocated, and
should never be directly accessed.

You cannot copy BADBLK.SYS[1,2].

?Cannot find DSK0:CMDLIN.SYS[1,4]

The COPY program needs this file to be able to process wildcard symbols. Check to see if CMDLIN.SYS exists in DSK0:[1,4]—if so, you did not have enough memory to load it into your partition—try to increase your memory by erasing unnecessary files. See your System Operator for further help.

?Cannot load [filename] - contiguous files may not be loaded

You may only COPY sequential files into your memory partition.

?Device Error

You specified a peripheral device in a filespec, and the device driver for that device is not loaded into system memory—so AMOS can't access it. See your System Operator about defining the device to the system, and try again when it is ready for access.

?Device full

There is not enough room on your disk to do the COPY you requested. See what you can do to free up memory space.

?Files may not be transferred to RES:

You cannot use COPY to transfer files to resident system memory. You must use a SYSTEM command in your system initialization command file.

?Maximum input exceeded

You put more characters on the command line than COPY could handle. Break your command into smaller commands.

?MEM: or RES: specified on network

You cannot access MEM: or RES: over a network.

?Missing output specification

You left out the equal sign, and COPY could not tell which was your new file and which was the old file.

?More than one output specification

You may not specify more than one new file. Check your entry.

?Not copied - Destination file already exists

You tried to copy to a file that already exists while using /NOD. Try again with /D, or specify a different new file.

?Not copied - Destination file does not already exist

Using /REPLACE, you tried to copy to a file which does not already exist in the destination account. Try again using /NOREPLACE, or specify an existing destination file.

Specification error ^

Your command line is not in the proper format. The ^ symbol points to the part of the line COPY did not understand.

%Unsuccessful copy - [filename]

This is usually followed by another message detailing what went wrong with the copy. Check with your system operator if you have trouble locating the problem.

?Wildcard device or unit specified on network

You cannot use wildcard symbols over a network.

?You are not logged in under [1,2], can't create [p,pn]

You tried to copy one or more files to an account that does not exist. You must be logged into [1,2] to create such an account.

CPMCPY

FUNCTION

Transfers a copy of a file from a floppy diskette created under the CP/M operating system to an AMOS file-structured device.

CHARACTERISTICS

CPMCPY is not re-entrant or re-usable. CPMCPY assumes the data in the CP/M file is in ASCII or binary form; it does no translation of the data. CPMCPY assumes the CPMCPY diskette is mounted on CP/M device A: (CP/M device A: is AMOS device IMG0:). You must have the IMG.DVR floppy driver in account DSK0:[1,6]. For information on configuring floppy disk drivers, see your *System Operator's Guide*. You must have the IMG device defined in your system device table-see your *System Operator's Guide to the System Initialization Command File.*

The extension in your CP/M file specification must be three characters. This means if the CP/M extension is only two characters, you must enter a space as the third character. If the extension is a null extension, you must enter three spaces.

CP/M is a registered trademark of Digital Research. In order to use CP/M on an AMOS system, you must purchase the Alpha Micro implementation of CP/M, and your computer must be equipped with the proper Communications Controller. For information on using AMOS CP/M, see your *CP/M Installation Instruction and User's Guide* and the *CP/M Operating System Manual*.

FORMAT

```
CPMCPY AMOS-file=CPM-file{/switch}
```

AMOS-file is the AMOS file you want to create, and ***CPM-file*** is the CP/M file you want to copy. A ***switch*** is an option request. The default extension for the AMOS file is .CPM.

OPTIONS

/B	Use if the file being copied contains binary data.

OPERATION

Enter CPMCPY, the AMOS file, an equal sign, and the CP/M file. For example:

```
CPMCPY DSK1:FORMS.CPM = A:FORMS.ASM RETURN
```

MESSAGES

?Account does not exist - [x,x]

Check your syntax, find the correct account, or create the account you need.

?Cannot DELETE [filename] - file may not be deleted

You cannot copy over the filename in memory, because it is locked by the system. Use the LOKUTL program to erase the old module and add the new file.

?Cannot find DSK0:CMDLIN.SYS[1,4]

The program needs this file to process wildcard symbols. Make sure CMDLIN.SYS is in DSK0:[1,4]—if it is, you did not have enough memory to load it in your partition. If so, DELete unneeded files to increase your memory.

CPM file not found in directory search

Check your syntax and/or use CPMDIR to locate the file, then try again.

?Device Error

The device driver for the device you specified as a peripheral is not loaded into system memory, so AMOS can't access it. See your System Operator about defining the device to the system, and try again when it is ready for access.

?Device full

There is not enough room on your disk to do the copy you requested. See what you can do to free up memory space.

?Files may not be transferred to RES:

You cannot transfer files to resident system memory. You must use a SYSTEM command in your system initialization command file.

?Missing Output specification

You left out the equal sign, and CPMCPY could not tell which was your AMOS file and which was your CP/M file.

?More than one output specification

You may not specify more than one AMOS file. Check your entry.

Specification error ^

Your command line is not in the proper format. The ^ symbol points to the part of the line CPMCPY did not understand.

CPMDIR

FUNCTION

Displays the directory of a CP/M diskette.

CHARACTERISTICS

CPMDIR is not re-entrant or re-usable. CPMDIR uses the IMG.DVR floppy driver to access the data on the CP/M diskette; you must have a valid copy of that program in account [1,6] of the System Disk. For information on configuring floppy disk drivers, see your *System Operator's Guide.* The IMG device must be defined in your system device table. CPMDIR assumes the diskette whose directory you want to see is mounted on CP/M device A: (AMOS device IMG0:). CP/M device B: is AMOS device IMG1:.

CP/M is a registered trademark of Digital Research. In order to use CP/M on an Alpha Micro computer system, you must purchase the Alpha Micro implementation of CP/M, and your computer must be equipped with the correct Communication Controller. For information on using CP/M on an Alpha Micro computer system, see your *CP/M Installation Instruction and User's Guide* and your *CP/M Operating System Manual.*

FORMAT

```
CPMDIR devn:
```

devn: is the CP/M format specification of the CP/M diskette.

OPERATION

Enter CPMDIR and the device name. For example:

```
CPMDIR B: RETURN
```

You then see a directory display for that CP/M device.

MESSAGES

?Cannot READ IMGx: - device does not exist

Make sure IMG is defined as a valid device on your system and the IMG.DVR program exists in account DSK0:[1,6].

?Cannot READ IMGx: - device not mounted

Use the MOUNT command to mount the diskette, and try again.

CREATE

FUNCTION

Creates a random file of specified size.

CHARACTERISTICS

CREATE is re-entrant and re-usable. A random (or contiguous) file is one in which the blocks making up the file are next to each other on the disk (as opposed to a sequential file, in which the disk blocks may be scattered across the disk). Since random files may not be expanded once they are allocated on the disk, programs that increase the size of files (such as text editors) will not work with random files.

FORMAT

```
CREATE filespec,size{,record-size}
```

filespec selects the file you want to create and ***size*** is the number of disk blocks you wish to allocate to that file. The optional ***record-size*** specifies the size of the records.

DEFAULTS

The default device and account are where you are logged. The default extension is .DAT.

OPERATION

Enter CREATE, the file you want to create, and the number of blocks to allocate to it. For example:

```
CREATE CUSIDX.NEW,10 RETURN
```

If you have an extended format file system, you can specify a record-size to define the size of the records for the file. For example:

```
CREATE SUPPLY.RCD,10,1200 RETURN
```

MESSAGES

?Command error

Check your syntax and try again.

?Cannot allocate random file [filespec] - device full

There were not enough contiguous blocks available on the disk to create a file of the specified size. Use DSKPAK to consolidate disk blocks, and/or erase files to create more disk space.

?File specification error

Check your syntax and try again.

?Record size must be greater than 0, if specified

If you specify the optional record size, the size must be greater than zero.

CRT410

FUNCTION

Certifies the disk media of a device controlled by the AM-410 Hard Disk Controller.

CHARACTERISTICS

CRT410 is re-entrant and re-usable. Because of the high data density of the disks that run with the AM-410 (Phoenix disks), media flaws are a more likely possibility than on more conventional drives (for example, Winchester disks). Therefore, you must run CRT410 on each logical device of every disk controlled by an AM-410 before using that device.

CRT410 runs only under the AMOS/L operating system. You may use it ONLY on devices controlled by an AM-410. CRT410 communicates directly with the AM-410 without going through the 410DVR.DVR driver program. Therefore, you MUST NOT run CRT410 at the same time as other programs that access devices under control of the AM-410. CRT410 will also lock up or severly slow down all other users on your system—warn them before using this command.

CRT410 formats and certifies a logical device by writing and verifying data in every block of the device, so make sure you back up any data you need on that device before you certify it. Because CRT410 destroys any data on the disk it is certifying, CRT410 requires you be logged into the System Operator's account, DSK0:[1,2], before certifying a disk.

CRT410 creates account [1,2] on the disk you are certifying. Then it creates a file BADBLK.SYS[1,2] containing a list of all bad disk tracks on the certified device. CRT410 assigns alternate tracks for these bad tracks, thereby making the fact some tracks are bad completely "transparent" to the user of the device. For more information, see the BADBLK reference sheet.

CRT410 also computes and stores a hash total for BADBLK.SYS within the file. Other programs can check this hash total against the contents of the file to make sure BADBLK.SYS contains undamaged data.

You must mount a logical device before certifying it.

FORMAT

```
CRT410 devn:
```

devn: is the specification of the device you want to certify.

OPERATION

Enter CRT410 and the specification of the device. For example:

```
CRT410 SMD5: RETURN
```

Make sure you have backed up any data on the disk you may need; CRT410 destroys all data on the disk. You can interrupt the program at this point by pressing CTRL/C.

CRT410 now creates a file named BADBLK.SYS in account [1,2] of the disk you are certifying. This file will hold a list of all bad disk blocks CRT410 finds. It then asks you several questions:

1. Enter maximum acceptable number of bad tracks:

   Give the number of bad tracks you will accept on the disk. You may specify up to 15 tracks. When CRT410 finds more than this number, it tells you so and returns you to AMOS command level.

2. Enter number of accounts to preallocate:

   This information allows CRT410 to pre-initialize blocks in the Master File Directory (MFD). There is no practical limit to the number of accounts you may specify, and the number you enter here in no way restricts the number of accounts you can add to the disk in the future. The only limiting factors are the size of the logical devices and the amount of data you plan to store in each account.

3. Display current track? (Y or N):

   If you want each track displayed as it certifies, enter **Y**; otherwise, enter **N**.

4. Enter serial number (10 char. max):

   You may optionally give CRT410 a ten-character alphanumeric I.D. for the logical device it is certifying. CRT410 writes this identifier into the BADBLK.SYS file.

After you answer the questions, CRT410 certifies the disk. When CRT410 encounters a track it can't verify, it tells you so. When it finishes, it displays the number of bad tracks it found.

MESSAGES

?Cannot certify devn: - device not mounted

Use the MOUNT command to mount the specified device.

?Certification incomplete

You pressed CTRL/C, or some other event interrupted the certification. CRT410 now intentionally writes a bad hash total to BADBLK.SYS so other programs know the data in the file is incomplete and not to be trusted. Re-run CRT410 to create a good BADBLK.SYS file.

?Device does not exist

Check the device name and re-enter the command. Use DEVTBL to see a list of devices.

?Device has exceeded maximum number of errors

CRT410 found more bad tracks than the value you specified as the maximum number of bad tracks you will accept.

%devn: is not at the standard port address. Make sure that you are
% using the correct format program. Do you wish to continue?

The device driver for the specified device defines the hardware address of the device to be a non-standard port. Carefully check that you want to certify this device, as you may be specifying a device not under control of an AM-410 disk controller. Then enter Y or N as appropriate.

?Nonexistent device

Check your spelling and try again. Use DEVTBL or SYSTAT to see a list of the devices on your system.

?Privileged program - must be logged into OPR:

Log into OPR: and try again.

?S100 data transfer error

An error occurred with the AM-410 controller. A number of these errors can indicate hardware problems.

?Track 0 did not verify. (First track must verify.)

Get technical help to determine why track 0 did not verify.

?Track n did not verify

CRT410 marked track #n as a bad track in the BADBLK.SYS file.

?15 bad tracks is maximum

Try again, entering 15 or less.

CRT415

FUNCTION

Certifies the disk media of a Winchester device that runs under control of the AM-415 High-Performance Winchester disk controller.

CHARACTERISTICS

CRT415 is re-entrant and re-usable. CRT415 certifies a physical unit by reading the factory-encoded media flaw information on each track and head of the unit and constructing a BADBLK.SYS file in account [1,2] of the first logical device.

You may use this certification program ONLY on High`-Performance Winchester devices that run under control of the AM-415. CRT415 communicates directly with the AM-415 controller board without going through the disk driver program. Therefore, you MUST NOT run CRT415 at the same time as other programs that access devices that run under control of the AM-415. *CRT415 destroys all data that may currently exist on the device it certifies.* Therefore, you must make backup copies of all your files before you use CRT415. You must be logged into the System Operator's account, DSK0:[1,2] to run CRT415.

The file BADBLK.SYS[1,2] contains a list of all bad disk blocks on the certi`fied device. For information on the program you can use to display the BADBLK.SYS file, see the BADBLK reference sheet. Multiple logical devices on the same Winchester technology physical unit share the same BADBLK.SYS file.

FORMAT

```
CRT415 devn:{/switch}
```

devn: is the specification of the device you want to certify, and ***switch*** is an option.

OPTIONS

/Z	Initialize the disk by writing data to every block on the disk in addition to certifying the contents of BADBLK.SYS This takes longer than regular certifying.

OPERATION

Log into OPR: and enter CRT415 and the device you want to certify. For example:

```
LOG OPR: RETURN
CRT415 DSK0: RETURN
```

CRT415 warns you the program will destroy all the data on your disk. Make sure you have backed up any data on the disk you may need. **You can interrupt the program at this point by pressing** CTRL/C.

If you continue, CRT415 creates a file named BADBLK.SYS in account [1,2] of the disk you are certifying. This file will hold a list of all bad disk blocks CRT415 finds. CRT415 asks you several questions:

```
Enter maximum acceptable number of bad blocks:
```

Enter the largest number of bad blocks you are willing to accept on your disk. CRT415 has a certain upper limit for errors depending on the data capacity of the drive—you may wish to accept less. When CRT415 finds more than the number you specify, it tells you so and returns you to AMOS command level.

```
Enter number of accounts to preallocate:
```

This information allows CRT415 to pre-initialize blocks in the Master File Directory (MFD). There is no practical limit to the number of accounts you may specify, and the number you enter here in no way restricts the number of accounts you can add to the disk in the future. The only limiting factors are the size of the logical devices and the amount of data you plan to store in each account.

```
Display current track? (Y or N):
```

If you want CRT415 to tell you as it certifies each track, enter Y; otherwise, enter an N.

```
Enter serial number (10 char. max):
```

You may optionally give CRT415 a ten-character alphanumeric I.D. for the physical unit it is certifying. CRT415 writes this identifier into the BADBLK.SYS file. If you do not wish to give the physical unit an identifier, just press RETURN.

After you answer the questions above, CRT415 begins to certify the disk. When CRT415 encounters a bad block, it tells you so. For example:

```
Track 79, Head 2, Sector 3 assigned alternate
```

If all sectors on a track are bad, CRT415 displays just the track and head numbers on your terminal. When it finishes certifying the disk, CRT415 tells you how many bad blocks it found.

CRT415 computes and stores a hash total for BADBLK.SYS in the file. Other programs can check this hash total against the contents of the file to make sure BADBLK.SYS contains undamaged data.

MESSAGES

?n bad blocks is maximum

n is the maximum number of allowable bad blocks for the drive. You tried to give a number larger than n. Re-enter a proper number.

?Cannot certify [device-name] - device not mounted

Use MOUNT to mount the device and run CRT415 again.

?Cannot certify [device-name] - not the physical device

The device you specified on the command line was not the first logical device on the physical unit. Run CRT415 again using the device specification of the first logical device on the drive.

?Certification aborted

Informs you the program was interrupted. CRT415 writes a bad hash total to the BADBLK.SYS file so other programs know the data in the file is incomplete and should not be trusted. Re-run CRT415 to provide a good BADBLK.SYS file.

?Control-C abort

Informs you the program was interrupted prior to certification. The BADBLK.SYS file on the disk remains untouched.

?Device does not exist

The system does not recognize the device specification you entered. Check your syntax or use DEVTBL to see a list of devices on your system and try again.

?Device has exceeded maximum number of bad blocks

CRT415 found more bad blocks than the value you specified as the maximum number of bad blocks you will accept. You may wish to re-run CRT415 and accept a higher number of bad blocks.

?Devn: is not at the standard port address. Make sure you are using the correct format program. Do you wish to continue (Y or N)?

The physical device you specified is not attached to the AM-415 controller at the expected I/O port. Make sure you are using the correct certification program for the device type you wish to certify. Also, check the cable connecting the disk to the AM-415 controller board, and check your system INI file to make sure your DEVTBL statements are correct. You can either continue the certification by entering Y, or cancel CRT415 by entering N.

?Drive defective

CRT415 could not verify track #0, head #0. Because the first track MUST verify for the certification to continue, CRT415 stops the certification. Get technical help to resolve the problem with the drive.

?Insufficient memory to perform certification

The System Operator's job does not have a large enough memory partition to run CRT415. Use the MEMORY command to increase the amount of memory available temporarily to at least 32K. You may wish to adjust memory allocations permanently in your system INI file.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

?Track n, Head n, Sector n assigned alternate

CRT415 marked track #n, head #n, sector #n as a bad block in the BADBLK.SYS file and assigned an alternate sector to be used instead. If the entire track is bad, CRT415 omits the Sector number from this message.

CRT420

FUNCTION

Certifies the disk media of disks under control of an AM-420 or AM-1000 Winchester Disk Controller.

CHARACTERISTICS

CRT420 is re-entrant and re-usable.

You may use this certification program ONLY on devices controlled by an AM-420 or AM-1000 Winchester Disk Controller. CRT420 communicates directly with the AM-420 or AM-1000 Winchester Disk Controller without going through the AM-420 or the AM-1000 driver program. Therefore, you MUST NOT run CRT420 at the same time as other programs that access devices under control of an AM-420 or an AM-1000. You must be logged into the System Operator's account, DSK0:[1,2] to run CRT420.

The disk is pre-certified at the factory with much greater accuracy than is possible with this program. Therefore, use this program only in extreme cases, such as the unrecoverable loss of your BADBLK.SYS file.

CRT420 certifies a physical unit by writing and verifying data in every block of the device. *THIS DESTROYS ALL THE DATA CURRENTLY ON THE DISK.* If you must use CRT420, make sure you back up any data you need on that device before you certify it.

CRT420 creates account [1,2] on the disk you are certifying. Then it creates a file BADBLK.SYS[1,2] containing a list of all bad disk blocks on the device. For information on the program that displays BADBLK.SYS, see the BADBLK reference sheet. Multiple logical devices on the same Winchester technology physical unit share the same BADBLK file.

FORMAT

```
CRT420 devn:
```

OPERATION

Make sure no one else is using your system! Then log into OPR: and enter CRT420 and the specification of the device you want to certify. For example:

```
LOG OPR: RETURN
CRT420 PLD0: RETURN
```

CRT420 now warns you that CRT420 will destroy all the data on the disk. Make sure you have backed up any data on the disk you may need. You can stop the program at this point by pressing CTRL/C.

CRT420 creates a file named BADBLK.SYS in account [1,2] of the disk you are certifying. CRT420 then asks you several questions:

```
Enter maximum acceptable number of bad tracks:
```

CRT420 has a set maximum number of bad tracks depending on the data capacity of the drive—you may choose to accept less.

```
Enter number of accounts to preallocate:
```

This information allows CRT420 to pre-initialize blocks in the Master File directory (MFD). There is no limit to the number of accounts you may specify, and the number you enter here in no way restricts the number of accounts you can add to the disk in the future. The only limiting factors are the size of the logical device and the amount of data you plan to store in each account.

```
Display current track? (Y or N):
```

If you want CRT420 to tell you as it certifies each track, enter Y; otherwise, enter N.

```
Enter serial number (10 char. max):
```

You may optionally give CRT420 a ten-character alphanumeric ID for the physical unit it is certifying. CRT420 writes this identifier into the BADBLK.SYS file. If you do not wish to give the physical unit an identifier, just press RETURN.

After you answer the questions above, CRT420 begins to certify the disk. When CRT420 encounters a track it cannot verify, it tells you so. For example:

```
Track 79, Head 2, Sector 3 did not verify
```

On an AM-1000 it displays something like:

```
Block 24 did not verify.
```

When it finishes certifying the disk, CRT420 tells you how many bad tracks it found. CRT420 includes a hash total for BADBLK.SYS inside the file. Other programs can check this hash total against the contents of the file to make sure BADBLK.SYS contains undamaged data.

MESSAGES

?Block n did not verify

CRT420 marked block n as a bad block in the BADBLK.SYS file (AM-1000 drive).

?Certification incomplete

You pressed CTRL/C, or some other event interrupted the certification. CRT420 intentionally writes a bad hash total to the BADBLK.SYS file so other programs know the data in the file is incomplete and not to be trusted. Re-run CRT420 to provide a good BADBLK.SYS file.

?Control C abort

The program was interrupted before certification. The data on your disk is still complete.

?Cylinder zero did not verify

Cylinder 0 must contain no errors. Get technical help to determine what is wrong with the drive.

?Device has exceeded maximum number of errors

CRT420 found more bad tracks than the value you specified as the maximum number of bad tracks you will accept. You may want to re-run CRT420 and allow more bad tracks.

?Error during initialization

An error on the AM-1000 Winchester Controller has been detected. This may indicate a hardware problem. See your Alpha Micro representative for help.

?Error during recalibrate

An error on the AM-1000 Winchester Controller has been detected. This may indicate a hardware problem. See your Alpha Micro representative for help.

?Format drive error

An error on the AM-1000 Winchester Controller has been detected. This may indicate a hardware problem. See your Alpha Micro representative for help.

?n bad tracks is maximum

Try again with a number less than or equal to n.

?Nonexistent device

Your device specification was invalid. Check your syntax or use DEVTBL to see a list of devices for your system, and try again.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

?S100 data transfer error

An error occurred with the AM-420 controller. A number of these errors can indicate hardware problems.

?Track 0, Head 0 did not verify. (First track must verify.)

CRT420 could not verify track #0, head #0, which MUST verify. Get technical help to determine what is wrong with the drive.

?Track n, Head n, Sector n did not verify

CRT420 marked track #n, head n as a bad track in the BADBLK.SYS file.

CRT520

FUNCTION

Formats and incorporates defect list for disks controlled by the AM-520 Intelligent Disk Controllers.

The AM-522 controller is a variant of the AM-520, and works in the same way. The information in this sheet also applies to the AM-522.

CHARACTERISTICS

CRT520 is re-entrant and re-usable. Because of the high data density of the disks that run under the control of the AM-520, media flaws are likely and must be compensated for. All drives that run under control of the AM-520 must be formatted using CRT520.

All drives purchased from Alpha Micro to be used with the AM-520 are formatted before leaving the factory. You do not need to run CRT520 again on these drives. You do need to run CRT520 if you are upgrading an existing drive to use with the AM-520 instead of an AM-415 disk controller.

CRT520 writes a format data pattern to every block of the device, so make sure you back up any data you need on that device before you format it. ***CRT520 DESTROYS ALL DATA ON THE DRIVE IT IS FORMATTING.*** CRT520 requires you be logged into the System Operator's account, DSK0:[1,2].

CRT520 creates account [1,2] on each logical unit of the disk you are certifying. Then it creates a file BADBLK.SYS[1,2] on logical device 0, containing a list of all bad disk blocks and media flaws on the certified device. This BADBLK file is a copy of a built-in file on the AM-520, and is therefore not essential to your system.

Use CRT520 ONLY on devices controlled by the AM-520 Disk Controller. CRT520 communicates directly with the AM-520 Disk Controller without going through the AM-520 driver program. Therefore, you MUST NOT run CRT520 at the same time as other programs that access devices under control of the same AM-520 board. CRT520 locks up or severely slows down other users on your system—warn them before using.

FORMAT

```
CRT520 devn:
```

devn: is the specification of the device you want to format.

OPERATION

If you are not familiar with the way the AM-520 handles media defects, you may want to read *Installation Instructions: AM-520 Intelligent Disk Controller, PDI-00520-00,* before using CRT520.

Enter CRT520 followed by the specification of the device you want to certify:

```
CRT520 PLD0: RETURN
```

Make sure you have backed up any data you need from the disk—***CRT520 destroys all data on the disk.*** You can stop CRT520 at this point by pressing CTRL/C.

CRT520 displays a menu of supported drive types. Select the type of drive you want to format. The program then asks you for the drive serial number. Enter the number, up to 20 characters.

CRT520 then asks if you want to format using a bad block map or a defect list. The next two sections describe the procedures Alpha Micro recommends you use. After that is a discussion of the other methods available.

If the drive has not been formatted on an AM-520 before:

Choose option 2, format using a defect list. Then CRT520 asks if you want the formatting data from a file, from the drive, or from the keyboard. Select 2 again, to take the bad block information directly from the manufacturer's defect list built into the drive.

You then have the option of saving the media defect list and the bad block map in files. These files are created in the account you're currently logged into, not on the drive you're formatting. We strongly recommend you create these two files:

- The defect list (default name DEFECT.DEF), is an ASCII file containing all the media defect information from the drive.
- The bad block map (default name DEFECT.MAP) is a binary file, an exact copy of the bad block map CRT520 writes to the hidden area of the drive during formatting.

CRT520 now writes the format pattern to every block on the disk, writes the bad block map in the hidden area of the drive, and creates a file named BADBLK.SYS in account [1,2] of the first logical disk on the drive. BADBLK.SYS contains a copy of the bad block map for the drive.

If the drive has been previously formatted using CRT520:

Which CRT520 options you should use depends on whether you have added new bad blocks to the drive using BADBLK since formatting the drive:

- If you have not added any bad blocks, use the same method described above.

- If you have added bad blocks to the list, select option 1, then choose to input information from the drive. When CRT520 asks if you want to include alternate blocks, answer Y. BADBLK updates only the bad block map in the hidden sector of the drive, so this is the only option which incorporates these blocks into the new bad block map.

CRT520 then continues by asking if you want to create copies of the map in disk files, as described above.

Other methods of formatting

The above methods suggest you take the defect information directly from the drive you're formatting. If, for some reason, this is not possible, you have two options:

- Take the information from a file: if the drive has been previously formatted, you may have copied the bad block information to disk files, as described above. You can use either the media defect list file (.DEF), or the bad block map file (.MAP).

  You can also use the "from a file" option if the drive has not been previously formatted, by typing the manufacturer's defect list into an AlphaVUE file, then using that file as the source.

- If the bad block map is not in a file on the drive, you can choose to enter the information from the keyboard, and type in the manufacturer's defect list. Each entry is in this format:

  ```
  Cylinder,Head,Byte from index,length (in bits)
  ```

  All numbers are in decimal.

After you choose either method, answer CRT520's questions and proceed as described above. If you are inputting from a file, you are not asked if you want to create the equivalent (media defect list or bad block map) file, since it already exists.

MESSAGES

Errors on the AM-520 may be recoverable or non-recoverable. At AMOS level, when DSKERR is set, the driver may report two types of recoverable errors—`Recoverable disk error` or `ECC correctable error`. Both of these errors result in correct operation and good data. The messages below are unrecoverable errors (you will have to correct the condition before re-using CRT520).

?Bad Block Map in incorrect format

These errors indicate the AM-520 was able to read the Bad Block Map from the disk, but its format was not intact. Use CRT520 again, using a media defect list or inputting the bad block map from a file.

?Cannot format drive, AM520 not initialized
?Cannot read MFR defect map - AM-520 not initialized
?Cannot read defect map, AM-520 not initialized

These errors indicate the AM-520 board has not been downloaded with the AM520.MIC microcode file. MOUNT the drive and try again.

?Cannot have defect block on track zero - drive is defective

Disk drives under control of the AM-520 must not have any defects on cylinder 0, head 0. It is not possible to add bad blocks in this area. If you took the defect information from the drive, contact your Alpha Micro dealer. If you typed in the defect information, you probably made a typographical error. Run CRT520 again.

Defect format not intact on cylinder n, head n

While reading the manufacturer's media defect list, a track was found with a bad media defect format. The track is ignored and defects (if any) on the track are not registered. If there are any defects on the track, you can add them using BADBLK (check the printed manufacturer's defect list).

?Defect map has bad hash total

These errors indicate the AM-520 was able to read the Bad Block Map from the disk, but its format was not intact. Use CRT520 again, using a media defect list or inputting the bad block map from a file.

DEVTBL ENTRY NOT FOUND

The device requested has not been defined with a DEVTBL statement in your system initialization file. See your System Operator about updating the system initialization file.

?Disk spare area has been exceeded - defect count must be reduced

A fixed number of blocks are allocated for bad blocking for each drive type. This number has been exceeded by adding bad blocks. See your System Operator or contact your Alpha Micro reseller or service representative.

?Error Initializing Disk

After formatting, when creating account [1,2] and writing BADBLK.SYS, an error was encountered which prevented proper operation. This error generally appears with another system error message which indicates the actual error condition. The most common cause is incorrect bitmap size in a BITMAP statement which causes a `Bitmap Kaput` error during initialization.

Formatting Operation Aborted

You pressed CTRL/C during the formatting operation. This message confirms the format has been stopped.

!!!!Illegal Input Format - try again
!!!!Illegal Input Line Format

See the format above and re-enter.

%Insufficient memory to run CRT520

Allocate more memory to your job.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

%Unable to format - error [n]

During the formatting operation, the AM-520 experienced a hard error at the physical drive level. n is the specific error code—in the current output radix—returned by the hardware. This generally indicates the disk drive is not functioning properly or is not cabled properly. The bit positions are:

0 Header failed though sector matched.

1 Data field error. The AM-520 couldn't read data and ECC failed in trying to correct.

2 Sector not found.

3 Sector overrun. Check if bytes per sector is set correctly on drive.

4 No data synch.

5 FIFO data lost. Indicates failure of data path between AM-520 and paddle cards.

6 Reserved for future use.

7 Indicates recoverable error.

For example, an `error 4` message indicates the third bit is set (100 binary), and the problem is a sector overrun.

?Unable to read defect map in internal format. Reading Manufacturer's Media defect list

When instructed to input the media defect list from the drive, CRT520 first tries to recover the list from the copy in the hidden area of the drive. If the drive has not been previously formatted, this list does not exist and it reads the information from the manufacturer's media defect list. This is the normal operation when formatting a drive for the first time.

%Unable to read existing Bad Block Map

The AM-520 was unable to read the Bad Block Map from the disk when requested to do so. Try again, using a media defect list or inputting the bad block map from a file.

?Unable to read Manufacturer's Media defect list

While reading the manufacturer's media defect list, ten consecutive tracks were unrecoverable. At this point, CRT520 assumes the list is not readable, and aborts the operation. Try again, but input the media defect list from a file or type it in from the keyboard.

CRT610

FUNCTION

Checks and verifies the quality of video cassettes for use as disk file backup media. Optionally creates a warm boot monitor cassette using a warm boot monitor file built by WRMGEN. Also has the option of calibrating a remotely controlled VCR.

CHARACTERISTICS

CRT610 is re-entrant and re-usable. Your system must contain the appropriate video controller board. A "warm boot" boots your system from a special warm boot video cassette when it can't boot from the System Disk. See the WRMGEN reference sheet for more information.

FORMAT

```
CRT610 {filespec}{/switch}
```

filespec specifies the warm boot monitor you want to copy onto video cassette and ***switch*** indicates an option. The default warm boot monitor is your system monitor (for example, DSK0:AMOSL.WRM[1,4] or DSK0:AMOS32.WRM[1,4]).

OPTIONS

All options are operation switches, and may be abbreviated to unique characters.

/BOOT Creates a warm boot cassette. If you specify a filespec, /B is assumed default.

/CALIBRATE Calibrates a remote control VCR. Must also use /V. ***Locks out other users on your system.***

/CHECK Reads a cassette and displays status. Does not harm data. Turns off /B and /V.

/FILE Like /C, but status put in file VCRSTS.LST where you are logged. Overwrites existing LST file.

/HARD Used with /CHECK to retry a maximum of four times if a hard error is found (remote-control VCRs only).

/TRACK Lets you adjust the tracking of your VCR to optimize a restore.

/VERIFY Writes data to cassette, reads it back, and prints statistics. ***Destroys all data on the tape.***

OPERATION

TO CREATE A WARM BOOT MONITOR TAPE:

Create a warm boot monitor disk file using WRMGEN. Load a blank cassette into your VCR and enter CRT610 followed by the optional file specification of the warm boot monitor. For example:

```
CRT610 SPECAL.WRM RETURN
```

If you enter just a file name and extension, CRT610 looks first in DSK0:[1,4]; if the file is not there, it searches the device and account you are in. It then asks you for information to put in the cassette label: Volume name (maximum of 40 characters); Volume ID (maximum of ten characters); Installation (maximum of 30 characters); System (maximum of 30 characters); and Creator (maximum of 30 characters).

The video recorder is activated and file transfer occurs. If the recorder you are using is not a remote controlled VIDEOTRAX Video Tape Recorder (VTR), CRT610 steps you through operating the VCR: rewinding the cassette, recording the boot monitor onto the cassette, and stopping the VCR.

Use CRT610/C to check the cassette is good. Label the cassette container and return it to its storage location.

TO CHECK A PREVIOUSLY RECORDED CASSETTE:

Load the cassette you want to check into the VCR. Enter CRT610/C:

```
CRT610/C RETURN
```

If you have a manually operated recorder, follow CRT610's instructions. CRT610 reads each block of the tape and checks it for accuracy. This takes as long as it did to originally record the tape. As it reads, CRT610 displays statistics about the tape.

If all totals are zero, either the tape is completely bad, or the VCR unit is not connected to the system properly.

Total Blocks Read is the number of unique blocks on the tape; Total Copies Read is the actual number of blocks read; Total CRC Errors is the number of bad blocks read that could be recovered; Total Hard Errors is the number of unrecoverable bad blocks; Reliability Ratio is the number of blocks read per CRC ("soft") error.

You should write these totals on the case of the cassette, to give you an idea of how the tape is wearing. A low Reliability Ratio may indicate hard errors can occur unless you increase the number of extra copies the next time you record on the tape. CRC errors are acceptable as long as the Reliability Ratio is greater than 100:1.

If you get a hard error, check to see if you have equipment problems. If that is not the case, re-run CRT610 using /C and /H, and CRT610 will try four times to recover the hard error. If the data still cannot be recovered, CRT610 aborts—this means the tape is bad and no data past the hard error can be recovered. Recover what you can off the tape and discard it.

When you are finished, rewind the tape and store it.

TO VERIFY A CASSETTE:

This function writes a specific data pattern to the cassette and then reads it back to make sure the data was recorded accurately. If you have a video monitor, you can attach it to the VCR and visually verify the data was recorded accurately (the words "Alpha Micro" appear in large block letters).

✋ This procedure destroys all data on the cassette.

Load a cassette into the VCR and rewind it. Make sure the tape doesn't contain data you need. Then enter CRT610/V. CRT610 asks for the cassette size in hours. You can specify a value of one to six hours. The default is two. Press RETURN after your answer. Then it asks for the number of copies. You can specify from four to 255. Press RETURN after your answer. The default value is four.

If the recorder you are using is a remote controlled VIDEOTRAX VTR, CRT610 automatically operates the VTR until the function is finished. If the recorder you are using is not remote controlled, CRT610 gives you step-by-step directions for manually operating your VCR.

CRT610/V displays the number of blocks written as it goes along. When it is done writing, it reads the tape to check the data. This takes as long as the original recording. As it reads the tape, CRT610 displays the same statistics /C does (see above).

TO CHECK A CASSETTE USING THE /F SWITCH:

The /F switch functions like /C, except it sends the statistics display to the disk file VCRSTS.LST instead of to a terminal display. The main purpose of the /F switch is to allow you to force the CRT610/F command to a job attached to a pseudo terminal, allowing you to check a cassette without tying up a real terminal.

To force the CRT610/F command to another job, make sure: 1) there is an unused job; 2) that job is attached to a pseudo terminal; 3) the job is logged into a disk account; and, 4) the job has memory (allocate at least 10K). For example:

```
ATTACH PSEUDO,EXTRA RETURN
FORCE EXTRA MEMORY 10K RETURN
FORCE EXTRA LOG DSK2:100,1 RETURN
FORCE EXTRA CRT610/F RETURN
```

After the job is forced, CRT610 begins. If you have a manual VCR, do not start the VCR before the job is forced. You may run CRT610/F without forcing it to another job, if you don't mind having your terminal tied up during the certification.

TO CALIBRATE A REMOTE CONTROL VCR:

Load a cassette in your VCR and rewind it. **Make sure the tape does not contain data you need.** Log into an operator's account and enter the command. For example:

```
LOG [1,2] RETURN
CRT610/V/CA RETURN
```

CRT610 verifies the tape (see above). The /CA option sets the cassette size to a minimum of two hours— if your VCR is set for SP mode, you must use a two hour (or longer) VCR tape. The number of copies defaults to five. If your VCR is set for EP mode, use a six hour tape.

The calibration process takes approximately one hour. A remote VCR table file, DSK0:REMVCR.TBL[1,4] is created by /CA. This table allows the remote controlled VCR to operate the fast forward ability of your VCR for faster RESTOR operations.

TO ADJUST THE TRACKING OF YOUR VCR:

Enter CRT610/TRACK. A screen appears displaying information and giving you directions for adjusting your VCR to best match the tape. This may improve your chances of restoring data from a tape made on another machine.

MESSAGES

?Cannot assign VCR0: - device in use

Turn off your AlphaNET network using the SET NOLINK command (remember to inform other users), and try again.

?Cannot record tape
?Cannot write VCR0:

The VCR tape you are using is write-protected (the write-enable tab has been removed). If you do want to write over the data on the tape, place a piece of tape over the write-enable hole and re-insert the tape. If you have the wrong tape, insert the correct tape or, to halt the CRT610 program, re-insert the tape and use CTRL/C.

?Cannot rewind tape

The tape may already be rewound, or there may be a problem with your VCR—check it and try again.

?Illegal cassette size

You entered an invalid number of hours in response to the CRT610/V cassette size question. You may only enter from 1 to 6. Start over again.

?Illegal number of copies

When you are verifying a cassette, you must enter from 4 to 255. Start over.

?Record ID error detected while building remote VCR tables

The tape you used was not long enough. Either use a tape with a longer recording time, or set your VCR to a faster recording rate.

?Remote control error

Your VCR or the software had a problem with the remote control. Try again—if the problem persists, check your VCR or contact your Alpha Micro representative for help.

?Tape control error

Your VCR or the software had a problem with the remote control. Try again—if the problem persists, check your VCR or contact your Alpha Micro representative for help.

?The VERIFY switch must be specified along with the CALIBRATE switch

Re-enter the command line using both /V and /CA.

?VCR cannot be remotely controlled

Your VCR is not remote-controllable, you can't calibrate a tape for it.

?VCR failed to respond to command

Try again, if the problem persists, check your VCR or contact your Alpha Micro representative.

?Warm boot monitor file has zero blocks. Not used.

The warm boot file you specified had a zero block size; this is not allowed.

%Warning - Possible equipment/media problems.

This message appears if the Reliability Ratio of your tape is less than 100:1. It indicates either your cassette is bad or your VCR has a problem. Possible causes might be: worn out tape, dirty recording heads on the VCR, or improper cabling to the VCR. If you determine you have no equipment problems, the tape is probably bad. Copy off all the files and discard it.

?You must be logged into [1,2] to calibrate VCR

Log into [1,2] and try again.

CRT620

FUNCTION

Checks and verifies the quality of 1/2" mag tape, 1/4" streaming tape, 8mm tape, or DAT tape for use as disk file backup media. Also, re-tensions streamer cartridges, and builds a warm boot streamer cartridge from a warm boot monitor file created by WRMGEN.

CHARACTERISTICS

CRT620 is re-entrant and re-usable. A warm boot is a procedure you can use to restore your system when your System Disk is erased or written over accidentally. A warm boot from the streamer tape requires a special monitor file, generated using WRMGEN, with enough information to get your system up and running on one terminal and in one memory partition. Then you can restore the damaged files to your System Disk from other backups previously created with MTUSAV.

CRT620 performs a CRC check to make sure it can read each block of data on the tape. It does ***not*** check the file structure of the tape. It is possible for a tape to show no errors after CRT620 and still be unreadable. To properly check a backup, use MTUDIR to display a directory of the entire tape, since the directory process reads the structure of the entire tape.

FORMAT

```
CRT620 {filespec} {size} {/switch}
```

filespec is the specification of the warm boot monitor file you want to copy onto the streamer tape if you are using the /BOOT switch.

Used with /VERIFY, ***size*** is the number of megabytes to write to the tape; if you omit it, VERIFY writes until the tape is full.

switch is one of the options listed below.

DEFAULTS

The default switch is /BOOT. The default filespec is your system warm boot monitor, for example DSK0:AMOS32.WRM[1,4]

OPTIONS

All switches are operation switches and may be abbreviated.

/BOOT Creates a warm boot cartridge. Default.

/CHECK Reads cartridge and displays status.

/ERASE ***Erases all data*** and re-tensions cartridge.

/FILE Used only with /VERIFY. Writes the verification statistics to a file in addition to displaying them. The file is called xxxSTS.LIT. ***xxx*** is the name of the tape device.

/GRAPH Used only with /VERIFY. Creates an AMIGOS graph file showing the relationship between soft errors and tape position. The graph is displayed and written to a file called *xxx*STS.GDF, where *xxx* is the name of the tape device. You cannot use GRAPH with an MTUx: device.

/TENSION Re-tensions tape by spinning it start to finish and back at high speed.

/VERIFY Writes data to tape, reads it back, and displays status. ***Destroys all data on the tape.***

OPERATION

HOW TO CREATE A WARM BOOT TAPE (/B)

Create a warm boot monitor file using WRMGEN. Load a blank tape in your streamer drive and enter CRT620 and the optional file specification of the warm boot monitor. Since /B is the default, you don't have to specify it. For example:

```
CRT620 SPECAL.WRM RETURN
```

If you enter just a file name and extension, as above, CRT620 looks first in DSK0:[1,4]; if the file is not there, it looks next in the device and account you are logged into. CRT620 then asks you for information it will place in the cassette label: Volume name (maximum of 40 characters); Volume ID (maximum of ten characters); Installation (maximum of 30 characters); System (maximum of 30 characters); and Creator (maximum of 30 characters).

The streamer is activated and the file transfer occurs. Use CRT620/C to check the tape. Perform a test warm boot to make sure it works, write-protect the tape, label it, and return it to its storage location.

HOW TO VERIFY A CARTRIDGE (/V)

Load a blank or scratch cartridge into your streamer unit. Type **`CRT620/V`** RETURN. CRT620 rewinds the tape and then erases it. The writing of data to the tape will take a few minutes. During the operation, CRT620 prints statistics on the screen and updates them every 1024 blocks. CRT620 then rewinds the cartridge, and begins reading the tape and prints the statistics on the screen.

"Blocks Read" is the number of unique blocks of data read from the tape. "Soft Errors" is the number of times a block had to be re-read. "Hard Errors" is the number of data blocks which could not be read after 16 tries. A non-zero number of hard errors is unacceptable, because it means you have lost data. Although soft errors do not necessarily mean trouble, a large number of soft errors per number of blocks read could indicate the tape is going bad or you have faulty hardware. When all of the tape has been read, CRT620 rewinds the tape and erases all of the data it wrote. Remove the cartridge and store it.

The statistics available will vary from device type to device type. For example, soft error statistics are not available from MTX (Exabyte) devices.

You can use the /FILE and/or /GRAPH switches during verification to write the verification statistics and a plot of soft errors by tape position to files. You can later look at these files to check the quality of the tape.

HOW TO CHECK A PREVIOUSLY RECORDED CARTRIDGE (/C Switch)

Load the cartridge you want to check into your 1/4" streamer unit. Type **`CRT620/C`** RETURN. When it is through, CRT620 displays the same statistics as /V.

See the warning about verifying backup quality in the Characteristics section.

MESSAGES

?Data error undetected by device

The data pattern read from the tape was not the same as that written to the tape. You either have the wrong tape in the streamer drive, or the tape may be bad.

%Field size exceeded. Re-enter.

Try again, using only the number of characters allowed or less.

? ^ Specification error

Check your spelling and try again—the arrow points to the error.

CTYPE

FUNCTION

Displays a file compressed by the CMP command.

CHARACTERISTICS

CTYPE is an OS/Exec program that may be used as an AMOS command. Although CTYPE can only display one file, multiple files may be displayed using the "CTYPE" function in OS/Exec. CTYPE tries to output the uncompressed content of ANY file compressed by OS/Exec.

Before using CTYPE, use CDIR to be sure the uncompressed file is a sequential file that can be displayed on a terminal. Only sequential files compressed using the OS/Exec program CMP may be displayed using CTYPE. The EXP command can be used to expand the contents of a compressed sequential file. The CDIR command can be used to list the type, size and name of a compressed file.

FORMAT

```
CTYPE filespec
```

OPERATION

Enter CTYPE and the file specification. For example:

```
CTYPE TRANS RETURN
```

CTYPE then displays the uncompressed content of the file.

MESSAGES

?Bad Input File

The file cannot be expanded due to a problem in the compressed file's content.

File is not an OS/Exec compressed file

Use the TYPE command to display the file.

The file specified is not in the format expected by CTYPE.

Use the TYPE command to display the file.

DATE

FUNCTION

Sets or displays the system date.

CHARACTERISTICS

DATE is re-entrant and re-usable. You don't need to be logged in to display the date. To set the system date, you must be logged into an operator's account, [1,2].

FORMAT

```
DATE {datespec}
```

datespec is a date in the date format specified in your language definition file. For U.S. English, the format is mm/dd/yy. If you include datespec, you reset the system date to the date you enter. DATE automatically sets the day of the week to match.

If you do not include datespec, DATE displays the current system date.

OPERATION

To display the date, enter DATE at AMOS command level. For example:

```
DATE RETURN
Thursday, February 22, 1996
```

To set the date, log into [1,2] and enter DATE followed by the new date in the format for your language. For example:

```
LOG 1,2 RETURN
DATE 10/21/95 RETURN
```

MESSAGES

Invalid year entered

Only dates from 1980 through 2079 are allowed. Two-digit years from 80 through 99 are considered 1980 - 1999. Years from 00 through 79 are considered 2000 - 2079.

?Use format [date format]

You did not enter the date in the proper format for your current language definition file—try again.

?You must be logged into [1,2] to reset the date

Log into [1,2] and try again.

DB

FUNCTION

DB is an interactive program that lets you debug a BASIC PLUS program at the source language level.

CHARACTERISTICS

DB is re-entrant and re-usable. Functions, variables and statements are referred to by the names from the original source file. It lets you set breakpoints at statements, view and change variable values, and run the program on a statement-by-statement basis. See your *AlphaBASIC PLUS User's Manual* for complete information on DB's features and commands.

DB has two modes: *screen mode* and *command mode*. Screen mode shows you your source code and its execution displays. Command mode, like command mode in AlphaVUE or AlphaFIX, lets you enter commands. In command mode, you see the command mode prompt: >.

To use the debugger, you must compile the source program with /D. For example:

```
COMPLP test/D RETURN
```

This produces the .RPD file (or .SPD if a subprogram) used with the debugger.

FORMAT

```
DB filespec
```

The default extension is .RPD.

OPERATION

Enter DB and the name of your file. For example:

```
DB TEST RETURN
```

You then see your program text, and can step through the program, using the debugging commands detailed in your *AlphaBASIC PLUS User's Guide*.

MESSAGES

See your *AlphaBASIC PLUS User's Guide* for a complete list of messages.

DBD

FUNCTION

DBD is a utility that can be used to uninstall the DBD: device, display the PIC code, or eject the media from one of the DVD-RAM or Blu-ray drives.

CHARACTERISTICS

DBD is re-entrant and re-usable.

FORMAT

```
DBD {/switches}
```

OPTIONS

/HELP	Display HELP
/?	Same as /HELP
/V	Display version information and exit
/ID:n	DVD-Recorder is at SCSI ID n
/PIC	Display Product Installation Code
/EJECT	Eject any DVD or Blu-ray media
/U	Uninstall

OPERATION

DBD/U is used to uninstall the DBD: device prior to removing the media from the DVD or Blu-ray drive.

Type DBD {/switches} from the AMOS prompt:

DBD RETURN

DBD will attempt to find a DVD-RAM or Blu-ray drive. The DBD driver must be in system memory. DBD will find the DVD-RAM drive either using the command line switch /ID or by defaulting to DBD:. If more than one DVD or Blu-ray device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use.

```
Found the following possible DBD-Recorders:

          ID  Description
      1   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
      2   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
```

```
Select one of the above devices:
```

Additional information about the DVD-RAM or Blu-ray drive is then displayed:

```
DVD-RAM or Blu-ray Recorder located at SCSI id 3
```

The option is performed.

If you want to remove the DVD or Blu-ray media or switch to another DVD media, use the /U switch:

```
DBD/U RETURN
```

REQUIREMENTS AND SETUP

DBD requires the following:

- AM-8000, Eagle 800, or AMPC 7.X based system
- AMOS 8.1 or later.
- A supported DVD-RAM or Blu-ray drive.

The DBD package contains the following required files:

- DBD.LIT
- The device driver (DBD.DVR) for the DVD-RAM or Blu-ray drive, in system memory.
- The SSD overlay file (DVD000.OVR)
- MAKBD.LIT
- DIRBD.LIT
- BDRES.LIT

MESSAGES

DVD-RAM or Blu-ray drive found at SCSI id: <#>

DBD is confirming the SCSI ID of the DVD drive it is about to use.

Error - Device specified is not a DVD-RAM or Blu-ray Recorder

Error - DVDram driver must be in system memory.

The DVD or Blu-ray driver must be loaded into system memory during the AMOS boot process.

Media is not AMOS format - insert an AlphaDBD and try again

DVD cannot read AMOS device information from the DVD or Blu-ray media. Remove the media from the drive and make sure it is an AlphaDBD. Re-insert the media and try DBD again. If the problem still occurs, either it does not contain AMOS information, or the DVD drive needs maintenance.

?There is no media installed in the DVD-RAM drive

Insert a DVD or Blu-ray media into the drive.

Unable to find a DVD-RAM Recorder.

No device that looks like a DVD or Blu-ray recorder was found

?You must install a SCSI dispatcher prior to using this program.

A SCSI dispatcher is required to use DBD.

DEL

FUNCTION

Erases modules from your memory partition.

CHARACTERISTICS

DEL is re-entrant and re-usable. When you load a file into memory from the disk, that copy in memory is called a module. DEL erases such modules from your memory partition (NOT from the disk). You may use the wildcard symbols * and ? in your file specifications.

When it deletes modules, it shifts any remaining modules down in memory if they have memory addresses greater than the deleted modules.

DEL cannot delete modules which have been locked in memory by setting the LOK bit flag in the module's flags word.

FORMAT

```
DEL filespec,{filespec(s)}
```

filespec(s) is one or more valid file specifications selecting the modules you want to erase from your memory partition. DEL assumes a file extension of * (any extension).

OPERATION

Enter DEL followed by one or more file specifications. For example:

```
DEL CREATE RETURN
CREATE.LIT
```

DEL erases from your memory partition the modules selected by your specifications; then it displays them to let you know they have been deleted. You can use standard wildcard symbols in your file specifications. For example:

```
DEL NEWPR* RETURN
NEWPR1.SBR
NEWPRT.LIT
```

MESSAGES

?Cannot DELETE [filename] - file may not be deleted

DEL cannot delete modules which have been locked in memory by setting the LOK bit flag in the module's flags word.

DEVTBL

FUNCTION

Displays data about the devices defined on your system.

CHARACTERISTICS

DEVTBL is re-entrant and re-usable. In order for your system monitor to know about and have access to physical devices on your system, such as disk drives and backup devices, those devices must be defined to the monitor in your system initialization command file. See your *System Operator's Guide to the System Initialization Command File* for more information about how devices are defined.

OPERATION

Enter DEVTBL at AMOS command level:

```
DEVTBL RETURN
```

the display you see tells you what devices have been defined on your system, and some information about them. A line from the display might be:

```
DSK0 (sharable) (alternate) (physical unit 0, logical unit 0)
```

(sharable) means the device can be accessed by more than one user at a time. Non-sharable devices are those devices only one user can access at a time, such as a printer. ***(alternate)*** means an alternate track table has been assigned. Certain disk devices, such as Winchester technology devices, use an alternate track table to handle media flaws.

Sharable devices can be assigned to a particular job for exclusive use.

You may also see (no network access), which tells you the device is not connected to a network, or (extended directory), or other informative messages.

The physical and logical unit numbers tell you if the device has multiple logical devices. All logical devices on a single physical unit share the same alternate track table (if there is one), which is stored on the first logical device. If a device is listed as "assigned to" a job, it is a non-sharable device currently being used by that job.

MESSAGES

?No device table allocated

Your system does not have a device table. See your System Operator for help.

DING

FUNCTION

Rings the terminal bell.

CHARACTERISTICS

DING is re-entrant and re-usable. Useful in a command file to tell the user input is expected or a process is finished.

FORMAT

```
DING number-of-rings
```

OPERATION

Enter DING and the number of times you want the terminal bell to ring at AMOS command level. For example:

```
DING 5 RETURN
```

You can also use DING in a command file. For example:

```
:T
:<Backup Project 100 accounts on DSK1: over to DSK0:>
COPY DSK0:[]=DSK1:[100,*]
:<FINISHED...  Remove backup disk.>
DING 5
```

DIR

FUNCTION

Produces a directory listing for specific files or accounts.

CHARACTERISTICS

DIR is re-entrant and re-usable, and understands ersatz names. You can use DIR to display the list of all files in a specific account, tell you what accounts and devices a particular file appears in, find the complete specification of a file, and to place a copy of a directory listing into a file.

If you use DIR to create a file to hold a directory listing (and if you use the /DATA option) then programs (such as those written in AlphaBASIC) can read the file specifications in that file and use that data to open files.

If your system uses the file protection system, protected files will not be displayed by DIR to users without the required access level.

DIR is a wildcard file command. For more information on wildcards, see your *AMOS User's Guide*.

FORMAT

```
DIR {listfspec}=}{filespec,filespec(s)}{/switch(s)}
```

filespec is a file specification that selects a file for which you want a directory listing. If you want the directory listing in a file, include a ***listfspec***.

DEFAULTS

The default file specification is *.*. The default device and account specifications are where you are logged. The default listfspec is DIRECT.LST in the account and device you are logged into.

OPTIONS

All the switches may be specified with /NO before them to cancel them, and may be abbreviated to the shortest unique combination.

/BASE	Displays base disk address of the file (or base memory address for DIR/B MEM:). File switch.
/BDATE	Displays last backup date.
/BTIME	Displays last backup time.

/CONTIGUOUS	Adds “C” if file is contiguous (random). Operation switch.
/CDATE	Displays date of creation.
/CTIME	Displays time of creation.
/DATA	Lists complete filespecs. Operation switch. Overrides /FULL switch.
/EXPANDED	Displays all information in an expanded format.
/FULL	Full data list. Same as adding /H/B/C/V.
/HASH	Displays hashmark for each file. Helps tell file versions apart. File switch.
/KILL	Delete and replace listfile if one exists. Operation switch.
/PROTECTION	Displays protection code.
/UDATE	Displays last update date.
/UTIME	Displays last update time.
/VERSION	Displays version number of .LIT and .RUN files. File switch.
/WIDE{:n}	List in ***n*** columns; default is 4. Operation switch.

The switches BDATE, BTIME, CDATE, CTIME, EXPANDED, PROTECTION, UDATE, and UTIME will only display useful information if used with extended file structure disks.

OPERATION

Enter DIR and any file specifications and options you wish at AMOS command level. For example:

```
DIR VRTUAL.LIT[110,7],DPL.LIT[] RETURN
```

DIR displays directory listings for the files you specified. It gives you the following information for each file: the filename, extension, and the number of disk blocks. For example, if you enter DIR MEM:, it shows you the number of bytes of memory for each module in your memory partition.

At the end of the directory listing, DIR gives the total number of blocks taken up by all of the files in the listing (or bytes, in the case of memory modules).

If you want your directory in a file, specify a listfilespec. For example:

```
DIR/W MYFILS=*.* RETURN}
```

If you want a directory of files on another computer you are connected to by AlphaNET, specify a cpuID:

```
DIR 16842754- DSK0:[1,4]*.LIT RETURN}
```

Use the /V option to display the version of a .LIT or .RUN file. For .RUN files, the AlphaBASIC program that created it must have the PROGRAM keyword. See your *AlphaBASIC User's Manual* for information on the PROGRAM keyword.

To search for a particular file on all mounted devices and in all accounts, use something like this:

```
DIR ALL:[]TAX.TBL RETURN
```

To display all of the files in the account you are logged into:

```
DIR RETURN
DUMP1     LIT    8      DSK1:[12,34]
APPEND    TXT    16
DIRECT    LST    3
DSKCLR    CMD    5
Total of 4 files in 32 blocks
```

To display a directory listing for specific files:

```
DIR []HEX.LIT,SYSIT?.AA RETURN
HEX     LIT     11     DSK1:[105,5]

SYSIT1  AA      87     DSK1:[105,5]
SYSIT2  AA      8
Total of 2 files in 95 blocks

SYSIT3  AA      42     DSK1:[140,2]
SYSIT0  AA      6
Total of 2 files in 48 blocks

Grand total of 5 files in 154 blocks
```

Notice DIR gives subtotals for each listing matching a filespec if that listing contains two or more files.

MESSAGES

?Account does not exist - [p,pn]

The indicated account does not exist. Check your entry, and, if you need to create the account, see the SYSACT reference sheet for help.

?Cannot find DSK0:CMDLIN.SYS[1,4]

DIR needs this file to process wildcard symbols in your file specifications. CMDLIN.SYS does not exist in the proper account or you don't have enough memory in your partition to load in the file. See your System Operator for help.

?Device not found

The device you specified does not exist. Check your spelling, or use DEVTBL to see a list of the devices defined on your system.

?Device not mounted

Mount the device and try again.

?Illegal output specification

The output specification you used was incorrect. Check your spelling, and the description of output specification above.

?Maximum input exceeded

You put more characters on the command line than DIR could handle. Break your command into smaller commands.

?MEM: or RES: specified on network

You cannot access MEM: or RES: over the network.

?More than one output specification

Try again with only one listfile specification.

%No such files

DIR couldn't find any files matching your file specifications. Check your entry, or specify DIR *.* to see what files are in the account.

Specification error ^

Your command line isn't in the proper format. The ^ symbol points to the error.

?Wildcard device or unit specified on network

You cannot use wildcard symbols over the network. Type in the full specification for the files you want to see.

DIRBD

FUNCTION

Produces a directory listing of the AMOS logicals on the media in the selected DVD-RAM or Blu-ray device (DBD).

✋ DIRBD is only supported on AM-8000, Eagle 800, and AMPC 7.X systems.

CHARACTERISTICS

DIRBD reads the selected media and displays the AMOS logicals.

FORMAT

```
DIRBD
```

OPTIONS

None

OPERATION

✋ DIRBD works best on a job with 132 columns set as the terminal width.

Before starting the program, place the DVD or BD-RE media in the DVD-RAM or Blu-ray drive.

Type **DIRBD** from the AMOS prompt:

```
DIRBD RETURN
```

DIRBD will attempt to find a DVD-RAM or Blu-ray drive by defaulting to DBD:. The driver DBD.DVR must be loaded in system memory. If more than one DVD-RAM or Blu-ray type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use.

After entering the DIRBD command, the following will be displayed:

```
DIRBD Version X.X(xxx)-x – Copyright 2007, Alpha Microsystems.
```

If DIRBD finds multiple DVD-RAM or Blu-ray drives while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible DBD-Recorders:

         ID  Description
 1.      nn  xxxxxxxxxxxxxxxxxxxxxxxxx
 2.      nn  xxxxxxxxxxxxxxxxxxxxxxxxx

 Select one of the above devices: nn
```

The following is a sample of a DIRBD process:

```
                  .DIRBD
                  DIRBD Version 8.0(100) - Copyright 2007, Alpha Microsystems

                  Found the following possible DBD-Recorders:

                           ID  Description
                   1.       5  SONY    BDRW BWU-100A
                   2.       4  HL-DT-STDVD-RAM GSA-H22N

                  Select one of the above devices: 2
                  DVD-RAM or Blu-ray drive found at SCSI id: 4

------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L ---------------------------------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L---------------
DBD000:     307200.     20928.    286272.      19200.        0   0 blk  REX000: E AM-8000 8.0 Release & Static Files ......
DBD001:     307200.    216928.     90272.      19200.     1470   3 blk  REX001: E AM-8000 8.0 Build & Source Files ........
DBD002:     307200.      2617.    304583.      19200.     E849   2 blk  REX002: E AM-8000 EAMOS Release ...................
DBD003:     307200.     36155.    271045.      19200.     EAD8   2 blk  REX003: E CD AMOS Release 01/31/2006 .............
DBD004:     307200.     63972.    243228.      19200.    10E28   0 blk  REX004: E AlphaTCP 1.5A Source & Release .........
DBD005:     307200.      7085.    300115.      19200.    14CA1   3 blk  REX005: E AlphaNET 2.4(159)-4 Rel & Src ..........
DBD006:     307200.     57016.    250184.      19200.    1538D   3 blk  REX006: E AlphaFAX 2.1(100)-1 Rel & Src ..........
DBD007:     307200.     17996.    289204.      19200.    18B3C   2 blk  REX007: E MULTI 2.1(192)10 rEL & sRC .............
DBD008:     307200.     40664.    266536.      19200.    19CD0   1 blk  REX008: E AlphaODBC 1.0(100) Rel & Src ...........
DBD009:     307200.      8072.    299128.      19200.    1C487   0 blk  REX009: E AlphaMAIL 1.2B PR09/05 .................
DBD010:     307200.     32551.    274649.      19200.    1CC69   3 blk  REX010: E Xadmin Release & *.INIs ................
DBD011:     307200.      3804.    303396.      19200.    1EC34   1 blk  REX011: E Command & Do Files .....................
DBD012:     307200.     84153.    223047.      19200.    1EFEC   0 blk  REX012: E Open Logical...REX12:...................
DBD013:     307200.     19063.    288137.      19200.    2421B   0 blk  REX013: E AMPC 7.0 Release .......................
DBD014:     307200.     52946.    254254.      19200.    254B9   2 blk  REX014: E AlphaODBC 1.0(100) Rel & Src ver. 1.4Y .
DBD015:     307200.    241467.     65733.      19200.    2886E   3 blk  REX015: E Open Logical...REX15:...................
------- ---------B--L--O--C--K--S----------  --BITMAP-- -SECTOR- -OFFSET- --DEV-- L ---------------------------------------
-ITEM-- ---Total--- ---Used---- ---Free----  --words--- ---SOL-- ---SOL-- -SPEC-- T ---------------L-A-B-E-L---------------

TOTAL:     4915200.     905417.    4009783.      Media Label: "MONTHLY BACKUP"
(megabytes)   2400.000     442.098    1957.901
(gigabytes)      2.3438      0.4317      1.9120

                  The program has completed.
```

REQUIREMENTS AND SETUP

DBD requires the following:

- AM-8000, Eagle 800, or AMPC 7.X based systems
- AMOS 8.1 or later
- A supported DVD-RAM or Blu-ray drive

DIRBD is only supported on AM-8000, Eagle 800, and AMPC 7.X systems.

The DBD package contains the following required files:

- DBD.LIT

- The device driver (DBD.DVR) for the DVD-RAM & Blu-ray disc drive, in system memory
- The SSD overlay file (DVD000.OVR)
- MAKBD.LIT
- DIRBD.LIT
- BDRES.LIT

DIRSEQ

FUNCTION

Arranges the entries in the directory of a disk account in alphabetical order. All directories may be arranged from account [1,2].

CHARACTERISTICS

DIRSEQ is re-entrant and re-usable. If you are not in [1,2], you may only sequence the account you are in. Arranges the directory based on the RAD50 value of the file names. This means names beginning with numbers come after names beginning with letters.

Do NOT use DIRSEQ while other jobs are accessing the logical disk containing the account you are sequencing! The BADBLK.SYS file is always the first file in its account.

The number of files DIRSEQ can sequence in a single PPN is proportional to your job's memory. If an account has a large number of files in it, it may not sequence if you have a small memory partition. DIRSEQ displays how many files can be sequenced.

DIRSEQ needs more memory to sequence files on extended-directory logical devices than on conventional disks. The /A switch also requires more memory. When you use /A on a standard logical, you can sequence only about half as many files per PPN in a given memory partition as when you don't use it. When you use /A on an extended directory, you can sequence only about 80% as many files.

FORMAT

```
DIRSEQ {devn:}{[p,pn]}{/switch}
```

devn: specifies the logical unit containing the directories you want to arrange, ***[p,pn]*** is the account, and ***switch*** is an option.

OPTIONS

/A	Use ASCII sort order (numbers sort before letters).
/E	Sort file names by extension, then name.
/N	Don’t delete unused directory blocks.

DEFAULTS

DIRSEQ assumes the device and account you are logged into and RAD50 sort order.

OPERATION

Enter DIRSEQ (with specifications and options if needed). For example:

```
DIRSEQ RETURN
```

DIRSEQ displays your current memory and how many files it can sequence, then it orders the entries in the directory for the account. Use DIR to see a display of your alphabetically ordered account directory.

If you are in an operator's account, [1,2], you can sequence the directories for all accounts on that disk by using wildcards. You may also specify accounts or use ersatz names. For example:

```
DIRSEQ DSK2:[] RETURN
DIRSEQ DSK2:[12,35] RETURN
DIRSEQ BAS: RETURN
```

If there is an error during sequencing, the erroneous PPN is skipped, and sequencing continues. When all PPNs are done, those PPNs not sequenced are listed.

MESSAGES

?Cannot INIT [device] - device does not exist

Check your syntax, or use DEVTBL to see a list of the valid system devices.

?Cannot READ [device] - disk is not mounted

Use the MOUNT command to mount the logical device, and try again.

?Command error. To use DIRSEQ, enter:

Your command syntax was in error. Re-enter using the guidelines given.

?File in use

A file is being used by another job, and will not be sequenced, though other files will be sequenced as normal.

?Insufficient free memory to sequence PPN

There is not enough room in your memory partition to sort all the files in the account. Either increase the size of your memory partition or divide the files among two or more accounts.

?You must be logged into PPN [1,2] to sequence other directories.

Log into [1,2] and try again.

DO

FUNCTION

Executes DO files.

CHARACTERISTICS

DO is re-entrant and re-usable. A DO file is a special, extended type of command file. For information on command and DO files, see your *Command File User's Manual.* Briefly, a command file is a text file containing system commands. You can execute such a file by entering its name at AMOS command level. A DO file can contain all of the elements of a command file. In addition, a DO file allows you to pass arguments to the file by including parameter symbols in that file. You can then specify the arguments to be substituted for those symbols when you execute the DO file. A DO file can be created using the AlphaVUE text editor.

If a DO file has a .DO extension, you may call it simply by entering its name at AMOS command level, providing no .LIT or .CMD files of the same name exist in your account or the system library accounts. If the file does not have a .DO extension, you must specify DO before the name of that file in order to execute it.

FORMAT

```
{DO} filespec {argument} {argument...}
```

filespec selects the DO file you want to execute and the ***arguments*** are optional text items (separated by spaces) you wish to substitute for parameter symbols in the DO file. DO assumes a file extension of .DO.

OPERATION

Enter the name of the DO file and the arguments for the file (if any). For example:

```
PROCES WRITE.TXT RETURN
```

If your DO file does not have a .DO extension, type the command DO, the name of your DO file, and the arguments. For example:

```
DO FORMAT.GO WRITE.TXT RETURN
```

MESSAGES

?Cannot locate [filespec]

Check your syntax, or use DIR to find the file.

DOSDEL

FUNCTION

Deletes a file from an MS-DOS formatted diskette.

CHARACTERISTICS

DOSDEL accepts wildcards for the DOS file(s). It is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K   3 ½” 1.44M

DOSDEL understands only directory and file names that conform to the MS-DOS 8.3 convention. It does not understand Windows 95 long file names.

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSDEL devn:\DOS-filespec RETURN
```

devn: is the AMOS device name for the diskette drive and ***DOS-filespec*** is the complete specification of the file you want to delete. There are no defaults.

OPERATION

Enter DOSDEL and the file specification for the file you want to delete. For example:

```
DOSDEL LFD0:\DBASE\TUTORIAL\READ.ME RETURN
```

DOSDEL then deletes the file from the diskette.

MESSAGES

?Invalid path specified

Check your directory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSDEL can't read.

DOSDR

FUNCTION

Displays a directory listing of an MS-DOS formatted diskette.

CHARACTERISTICS

DOSDR accepts wildcards for the DOS file. It is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K	3 ½” 1.44M

DOSDR understands only directory and file names that conform to the MS-DOS 8.3 convention. It does not understand Windows 95 long file names.

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSDR {listfilespec=}devn:\DOS-path
```

listfilespec is an optional AMOS filespec of a file to hold the directory display, ***devn:*** is the AMOS device name for the diskette drive, and ***DOS-path*** is the complete MS-DOS specification of the directory you want to display. The default path is the root directory. Without a ***listfilespec***, the directory displays on your terminal.

OPERATION

Enter DOSDR and the device/path/filename you want. For example:

```
DOSDR LFD0:\ALAN RETURN
```

DOSDR then displays the directory.

MESSAGES

?Invalid path specified

Check your subdirectory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSDR can't read.

DOSEXP

FUNCTION

Transfers a file from AMOS to an MS-DOS formatted diskette.

CHARACTERISTICS

DOSEXP accepts wildcards for the DOS file, and for a full AMOS specification (see OPERATION, below). It is re-entrant, re-usable, and works with these diskette formats:

5-1/4" 360 K 3-1/2" 1.44 M

Because MS-DOS does not support contiguous (random) files, DOSEXP will not transfer contiguous files.

To use this command, you must have a DOS disk driver program (created using FIXFLP or FIX219) for your computer's diskette drive. The drive must be defined using this driver in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSEXP devn:{{DOS-filespec}=AMOS-filespec{{/switch} RETURN
```

devn: is the diskette device, ***DOS-filespec*** is the optional name to be given the file on the diskette (uses AMOS name if not specified), and ***AMOS-filespec*** is the specification of the file to be transferred. The AMOS device and account default to where you are logged. **Do not put any spaces on either side of the equal sign.**

OPTIONS

/B	Transfers data in binary.
/Q	Query. Asks you to confirm export of each selected file.

OPERATION

Enter DOSEXP and the DOS and AMOS specifications. For example:

```
DOSEXP LFD0:\TEST\NEWPROGR.EXE=DSK3:NEW.ABC[120,53] RETURN
```

DOSEXP then transfers the file to the MS-DOS diskette. The file is converted into MS-DOS format.

You can specify a wildcard that represents a complete AMOS file specification, but not for a partial AMOS file specification. For example, you could enter:

```
DOSEXP LFD0:=*.* RETURN
```

but not:

```
DOSEXP LFD0:=DSK2:[10,2]*.TXT RETURN
```

MESSAGES

?Directory full

Choose another directory.

?Diskette full

There isn't room on the diskette for the selected file. Erase any un-needed files and try again, or transfer to another diskette.

?Invalid file type

Check your directory lists or your syntax and try again.

?Invalid path specified

Check your subdirectory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSEXP can't read.

?Unable to open [filespec]

DOSEXP couldn't find the file on the AMOS side. Check your AMOS directory and syntax.

DOSIMP

FUNCTION

Transfers a file from an MS-DOS formatted diskette to AMOS.

CHARACTERISTICS

DOSEXP accepts wildcards for the DOS file, and for a full AMOS specification (see OPERATION, below). It is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K 3 ½” 1.44M

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSIMP {AMOS-filespec}=devn:{\path}DOS-filespec{/switch}
```

AMOS-filespec is the file specification (which may include the device and account) of the file on the AMOS side, ***devn:*** is the diskette device, ***path*** is the directory path (defaults to root account) and ***DOS-filespec*** is the file you want to transfer. **Do not put any spaces on either side of the equal sign.**

DEFAULTS

The AMOS device and account default to where you are logged. The AMOS-filename defaults to the DOS-filename.

The name is truncated to six characters if the DOS-filespec is longer than six characters.

OPTIONS

/B	Transfer in binary mode.
/Q	Query. Asks you to confirm import of each selected file.

OPERATION

Enter DOSIMP and the AMOS and DOS device and file specifications you want. For example:

```
DOSIMP DBTUT.TXT=LFD0:\DBASE\TUTORIAL\READ.ME RETURN
```

DOSIMP then transfers the file to the specified AMOS account. The file is converted to AMOS format.

You can specify a wildcard that represents a complete AMOS file specification, but not for a partial AMOS file specification. For example, you could enter:

```
DOSIMP *.*=LFD0:*.* RETURN
```

but not:

```
DOSIMP DSK2:[10,2]*.TXT=LFD0:*.* RETURN
```

MESSAGES

?File not found

The file was not found on the MS-DOS diskette. Check your directory lists or your syntax and try again.

?Invalid file type

Check your directory lists or your syntax and try again.

?Invalid path specified

Check your directory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSIMP can't read.

?Unable to open [filespec]

DOSIMP couldn't open the file on the AMOS side. Check your AMOS directory and syntax.

DOSMKD

FUNCTION

Creates a subdirectory on an MS-DOS formatted diskette under the specified directory.

CHARACTERISTICS

DOSMKD is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K	3 ½” 1.44M

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSMKD {devn:}\path
```

devn: is the name of the diskette device and ***path*** is the route to the directory (including the new directory name). If you specify only the new directory name, it is created under the root directory.

OPERATION

Enter DOSMKD, the device specification you want to create a directory on, and the path. For example:

```
DOSMKD LFD0:\DBASE\TUTORIAL RETURN
```

DOSMKD then creates the directory.

MESSAGES

?Directory full

Choose another directory.

?Disk full

There isn't room on the diskette for another directory.

?Invalid directory name

Check your directory lists or your syntax and try again.

?Invalid path specified

Check your directory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSMKD can't read.

DOSRMD

FUNCTION

Removes a directory from an MS-DOS formatted diskette.

CHARACTERISTICS

DOSRMD is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K 3 ½” 1.44M

A directory can't be removed if it has files in it, or if a subdirectory of it has files in it.

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSRMD devn:\path
```

devn: and ***path*** give the device and directory you want to delete.

OPERATION

Enter DOSRMD and the description of the directory you want to remove. For example:

```
DOSRMD LFD0:\DBASE\TUTORIAL RETURN
```

DOSRMD then removes the directory.

MESSAGES

?Directory not empty

Remove or re-locate the files and try again.

?Directory not found

Check your syntax and try again.

?Invalid directory name

Check your directory lists or your syntax and try again.

?Invalid path specified

Check your directory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSRMD can't read.

DOSTYP

FUNCTION

Types a file from an MS-DOS formatted diskette on your terminal screen.

CHARACTERISTICS

DOSTYP is re-entrant, re-usable, and works with these diskette formats:

5 ¼” 360K	3 ½” 1.44M

To use this command, you must have a proper disk driver program for your computer's type of floppy disk (and defined as MS-DOS format when created by FIXFLP). The device must be defined in BITMAP and DEVTBL statements in your system initialization command file—you may want to load the driver into system memory. See your system operator for help.

FORMAT

```
DOSTYP devn:DOS-filespec
```

devn: is the diskette device and ***DOS-filespec*** is the file you want to display.

OPERATION

Enter DOSTYP and the device/file specification you want. For example:

```
DOSTYP LFD0:\DBASE\TUTORIAL\READ.ME RETURN
```

DOSTYP then displays the file on your terminal screen. You can stop the display at any time by pressing NO SCRL or CTRL/S, and resume it again by pressing NO SCRL or CTRL/Q. You can end the display by pressing CANCEL or using CTRL/C.

MESSAGES

?File not found

Check your directory lists or your syntax and try again.

?Invalid file type

You can't display this type of file.

?Invalid path specified

Check your directory lists or your syntax and try again.

?This is not a supported MS-DOS format
?Sorry, but can't be decoded.

Your floppy diskette is in a format DOSTYP can't read.

DSKANA

FUNCTION

Analyzes the data on a disk, tracks lost disk blocks, and optionally recreates the disk bitmap. Reports file errors, inconsistent block counts, and bad bitmap hash totals.

CHARACTERISTICS

DSKANA is re-entrant and re-usable. DSKANA reads every block on the disk. It keeps track of what the bitmap should be, and compares that to what it actually is. DSKANA should be run on a regular basis since it reclaims temporarily allocated disk blocks. DSKANA also tells you if more than one file claims the same disk block, if there are illegal block links in a file, and if your bitmap has a bad hash total. Unless you specify otherwise, DSKANA updates and rewrites the bitmap based on its analysis. To see a summary of DSKANA switches and modes, enter DSKANA at AMOS level in an operator's account.

DO NOT run DSKANA when other users are accessing the specified logical disk, or you could damage the data on that disk. You must be logged into an operator's account, [1,2], to run DSKANA.

DSKANA builds an image of the logical disk's bitmap in your memory partition. This means that you need a larger memory partition to analyze large logical devices. For example, a 1GB logical disk requires about 250KB of memory just to store the bitmap, in addition to any other memory requirements.

If you use disk cache, DSKANA saves and restores the statically locked blocks for the device you're analyzing. However, this requires extra memory, and the amount needed is proportional to the total number of statically locked blocks (for all devices) in the cache. DSKANA will report how much memory it uses to save the cache. You may have enough memory for DSKANA to restore the disk cache, but not enough to continue analyzing the disk. If so, increase your job's memory partition or run DSKANA from a job with more memory.

FORMAT

```
DSKANA {filespec=}{devn:}{/switch}
```

filespec selects a DSKANA output file, ***devn:*** selects the disk device you want to analyze, and ***switch*** is an option. filespec must ***not*** be on the device you are analyzing.

OPTIONS

/B Bypass analysis termination if there is not enough memory to save the disk cache. If you use this switch, locked blocks for the device will not be restored into the cache if there is not enough memory to do so. May be used with other switches.

/C Checks for errors without rewriting the bitmap (open files won't corrupt the file structure). Don't use if other users are ACTIVELY using the disk—you may get false `blocks marked in use` errors (through the file structure won't be damaged). Good for automated "overnight" file backups where users might have left files open. Can be used with /E and /L to select the type of display.

/E Lists only account numbers and disk blocks where errors occur.

/L Displays full list of all accounts, account directories, and files—plus disk addresses of blocks they occupy. Displays error messages as they occur.

/M Checks if device is mounted. If not, displays error message and bypasses device.

OPERATION

Enter DSKANA followed by the specification of the device whose contents you want to analyze and any optional switches. For example:

```
DSKANA DSK3: RETURN
```

You see nothing for some moments until DSKANA finishes reading the disk, except the numbers of the accounts as DSKANA progresses through the disk accounts. When DSKANA finishes reading the disk, it displays information about the disk analysis (see MESSAGES, below).

Every time the system updates the bitmap it computes a hash total and compares it with the previously stored value. This allows you to verify the bitmap was correct, since DSKANA also computes a bitmap hash total based on the blocks it has processed. If this value does not match the official bitmap hash total, you see a message. Whether the previous official bitmap hash total was correct or not, DSKANA rewrites the bitmap (unless you use /C). The last line of data in the terminal display tells you how many file errors were detected. The messages listed in MESSAGES, below, tell you what kinds of file errors occurred. Frequent file errors can indicate hardware or software problems.

If you want to see more information about how DSKANA is progressing as it analyzes your disk (or if DSKANA has reported file errors on your disk and you want to find out where the errors occurred), use /L or /E. If DSKANA finds an error, you see where on the disk it occurred. For example:

```
Block 1703 - block creates endless loop in file MDO.LIT
```

If you want to place the DSKANA output into a file, include a file specification and an equal sign on the DSKANA command line. For example:

```
DSKANA DSK0:ERROR.TXT=DSK1:/L RETURN
```

If the specified file already exists, DSKANA deletes it before beginning the disk analysis. The first line of the file includes the date of the analysis. Remember: **the output file must not be on the device you are analyzing.**

If you use disk cache, you will see this message:

```
DSKANA DSK5: RETURN

Allocating memory for cached disk blocks... [10540 bytes]
```

DSKANA needs four bytes of memory for each statically locked block in cache, regardless of its device. If you do not have enough memory in your partition, you will receive an error message, as listed below, and DSKANA will terminate. If you use the /B switch, running out of memory for the cache will still display an error message, but DSKANA will continue. Any statically locked blocks for the device you're analyzing will not be restored to the cache.

MESSAGES

Besides the errors listed below, you may see the standard system error messages dealing with invalid device specifications.

Allocating memory for cached disk blocks... [status]

DSKANA is storing statically locked disk blocks. Status may be:

- xxx bytes - xxx is the number of bytes used to store the cached blocks.
- No disk cache - Disk cache doesn’t exist.
- Insufficient memory - Your job doesn't have enough memory to store the cache. Increase memory and try again.

[BITMAP on disk had a bad hash total]

The bitmap DSKANA just calculated disagreed with the system bitmap. Unless you used /C, DSKANA re-writes the corrected bitmap anyway, so this is usually not a problem. If this occurs frequently, it could indicate a disk problem.

Bitmap size is 0 - not mounted or driver not in RES:

Either the device could not be mounted, or the disk driver is not loaded into system memory. Correct the error and retry.

?Cannot output list file to memory.

You cannot specify MEM: as the output device. Choose another device and re-enter an amended command line.

?Cannot output to device being analyzed

Make sure the output file is on another disk.

Checking disk cache for locked blocks...[status]

DSKANA is looking for statically locked blocks in disk cache. Status may be:

- Done - DSKANA has saved all statically locked blocks for the device.
- No disk cache - Disk cache does not exist.
- Error? Not enough space to store all locked buffers - DSKANA could not save all locked blocks for the device. Check the cache manually after DSKANA finishes.

?Device write protected - Please unprotect for retry
type RETURN when ready

Write-enable your disk and press RETURN.

?Error reading directory structure

A UFD is damaged in some way. The analysis will be incomplete.

?Memory allocation failed
%Analysis terminated

Your memory partition is too small for DSKANA to save and restore the disk cache. Either run DSKANA from a job with more memory or use the /B switch to continue analysis without restoring the cache.

?Memory allocation failed
%Continuing with analysis. Disk cache will not be preserved

Same as previous message, except you used the /B switch. DSKANA continues to analyze the disk, but any statically locked blocks for the device being analyzed are not restored to the disk cache.

?Memory allocation failed
%[xxx bytes] more are needed to analyze device

Your job does not have enough memory to store the bitmap of the device you're analyzing. Run DSKANA from a job with more memory or increase your memory partition size.

No file errors

There were no file errors found during the DSKANA.

?Privileged program - must be logged into [1,2]

Log into an operator's account, [1,2], and try again.

Restoring blocks into disk cache...[status]

DSKANA is putting the statically locked blocks for the device back into the disk cache. Status may be:

- Done - All blocks for the device have been restored to the disk cache.
- Error ?Not enough space to store all locked buffers - There were not enough buffers in the disk cache to restore all previously locked blocks.
- Error [?General disk error] - A disk error of some type has occurred.

[Rewriting BITMAP]

Informs you DSKANA is rewriting the bitmap.

[number] file errors detected

This displays the number of file errors found. If you used /C, you should re-run DSKANA without /C to correct these file errors.

[The following blocks were marked in use but not in a file]

You may see a list of block numbers following this message. This is not necessarily anything to be alarmed about. Running DSKANA "frees up" the blocks listed under this message by marking them free for use.

If the list of blocks is extremely long, you can press CTRL/C to interrupt it. While the rest of the block numbers will not display, DSKANA will still write the corrected bitmap and hash total to the disk.

[The following blocks were in a file but not marked in use]

You may next see a list of block numbers (if you don't, there is nothing to worry about). A list of block numbers following this message is an indication of something wrong—for example, the linking structure of the disk has gone astray; you must run DSKANA again, using /L or /E. The second time, look for the file error messages listed below, so you can figure out what's wrong.

If the list of blocks is extremely long, you can press CTRL/C to interrupt it. While the rest of the block numbers will not display, DSKANA will still write the corrected bitmap and hash total to the disk.

You only see the following messages if you use the /L or /E switches. If you see any of these messages in the listing of the blocks processed by DSKANA, you have serious problems with the data on your disk. Your best course is to delete the files affected, run DSKANA again, and restore the deleted files from your backup.

BITMAP rewrite error code [code number]

The bitmap could not be written back out to the disk. The number you see is the error code indicating what the problem was. For a list of these error codes, see your *AMOS Monitor Calls Manual.*

Block creates endless loop in file

The linking structure of this file allows the blocks to point back to themselves.

Block marked as bad

A block marked as bad in the BADBLK.SYS[1,2] file was allocated to a file.

Block reserved for system use only

A link in the file where this message appears points to a block that can't be allocated to a file, such as the label block, MFD, or bitmap area.

Block used in previous file

The last block in the file also exists in a previous file.

Device error [description]

Errors beginning with "Device error" tell you DSKANA found a block containing a hard error the system could not recover from. The "description" tells you the specific file or device and block number where the error occurred.

%Device not mounted

Informative message indicating the device in question was bypassed by DSKANA.

Illegal block link

A link in the file points to an invalid block address.

This file has a bum active count

See your System Operator about using DSKDDT to correct the situation.

This file has a bum block count

See your System Operator about using DSKDDT to correct the situation.

[unable to locate BITMAP for rewrite]

DSKANA couldn't find the bitmap area for the device in memory. This means the bitmap in memory may be invalid.

DSKCPY

FUNCTION

Creates a backup disk by making a literal image of one disk onto another. Optionally generates a hash total for the backup disk.

CHARACTERISTICS

DSKCPY is re-entrant and re-usable.

Do not run DSKCPY while anyone is accessing either of the disks involved in the copy! DSKCPY makes a LITERAL image of one disk onto another. This means any data on the disk you are copying to will be irretrievably lost after a disk copy is done. DSKCPY will wipe out the BADBLK.SYS file if you are copying to a disk with a BADBLK.SYS file. You must be logged into [1,2] to run DSKCPY.

You may use DSKCPY on any kind of disk device. However, the three-character device specification must be the same for both devices you are copying between. For example, if you want to make a copy of DSK0: (a Winchester disk) you may copy it to DSK1: or DSK6:, but you may not copy it to AMS0: or STD3:.

DSKCPY works only on devices which use the traditional directory structure. ***Do not use*** DSKCPY on extended-format disks.

DSKCPY optionally generates a hash total for the backup disk when it has finished the disk copy. This feature is useful if you are making multiple copies of a disk— the hash total displayed at the end of the disk copy should be the same for each disk copied. The hash total gives you an extra way to verify the copies made are identical to the master disk, since two disks will only have the same hash total if their contents are identical. For information on generating a hash total for a disk without using DSKCPY, see the HASHER reference sheet.

FORMAT

```
DSKCPY {/switch}
```

switch is an option request.

DEFAULTS

If you enter just the unit numbers of the disks you want to copy between instead of a full device specification, DSKCPY assumes you are copying between DSK devices. For example, if you enter 1 and 0 as the input and output drives, DSKCPY assumes you want to copy from DSK1: to DSK0:.

OPTIONS

/H Generates a hash total for the copied disk.

OPERATION

Log into [1,2] and enter DSKCPY:

```
LOG 1,2 RETURN
DSKCPY RETURN
```

If your disk drive permits, you should now write-protect the drive you are copying from; this ensures you won't accidentally copy the backup disk onto your source disk.

DSKCPY asks you for the Input drive. Enter the specification of the device you are copying FROM. Now DSKCPY asks you for the Output drive. Enter the specification of the device you are copying TO. For example:

```
DSKCPY RETURN
Input drive: DSK0: RETURN
Output drive: DSK1: RETURN
```

Now DSKCPY makes a literal image of DSK0: onto DSK1:. As it copies and verifies, it tells you how many blocks it is copying (DSKCPY copies every block on the disk, even if some blocks contain no data). The amount of time it takes to perform this disk copy depends on the device.

MESSAGES

?Could not find DEVTBL entry for disk mount

Please submit to Alpha Micro, on a Software Performance Report, the details of your use of DSKCPY.

?CRC error during disk copy - drive N block X

drive N and ***block X*** are octal or hexadecimal numbers. The Cyclic Redundancy Check detected a problem in data transmission. First verify there is a problem by using REDALL to diagnose the disk and report any read errors. The problem can be fixed using DSKDDT, but the data in the block may be lost.

?Disk size not defined in table

DSKCPY doesn't know the number of disk blocks per disk for the devices you are trying to copy between. This means you are copying between devices DSKCPY doesn't know about. See your System Operator for help.

?Driver not found

DSKCPY couldn't find the device driver program for the specified non-DSK device. That means the driver was not in system memory, user memory, or DSK0:[1,6]. See your System Operator.

?Input and output devices must be the same

You entered device specifications in which the three-character device code was different. For example, you tried to copy DSK1: to AMS1:.

?Invalid switch

Re-enter the command line using a valid switch.

?No BADBLK.SYS on input device
?No BADBLK.SYS on output device
?No BADBLK.SYS on output device. Recertification recommended.
?Cannot fetch BADBLK.SYS

The device has lost its BADBLK.SYS media flaw file, or that file cannot be read from disk. The drive needs to be backed up using another backup method before recertification and DSKCPY is tried again.

?Privileged program - must be logged into [1,2]

Log into [1,2] and try again.

?Sector not found during disk copy - drive N block X

drive N and ***block X*** are octal or hexadecimal numbers. The contents of a disk sector have become unformatted. Verify there is a problem by using REDALL to diagnose the disk and report any read errors.

?Sentinel field error during disk copy - drive n block x

drive n and block x are octal or hexadecimal numbers. The contents of a disk block have become unformatted. Verify there is a problem by using REDALL to diagnose the disk and report any read errors.

?Sorry - output disk is write-protected

Write-enable the disk and try again.

?Undefined error during disk copy - drive n block x

drive n and block x are octal or hexadecimal numbers. A hard error occurred which was not definable. Verify there is a problem by using REDALL to diagnose the disk and report any read errors.

?Verification error at block nnn

After DSKCPY copied the data in the specified disk block, it was not able to verify the data on the output disk. This means the data changed between the time it was read on the source disk and the time it was read on the output disk. Try using DSKCPY again. If you see this message frequently, you may have hardware problems.

DSKDDT

FUNCTION

Allows you to examine and change data directly on the disk.

CHARACTERISTICS

DSKDDT is re-entrant and re-usable. The numbers you give to DSKDDT tell it which disk locations you want to examine.

✋ DSKDDT should be used only by an experienced System Operator, and with extreme caution. A mistake could easily destroy your disk's file structure. You must be logged into an operator's account, [1,2], to run DSKDDT.

You cannot use DSKDDT across a network; you can use it only on local disks.

The block number for DSKDDT must be in the current numeric display base (usually octal). The replacement data **must** be in octal regardless of the current display base.

See the SET reference sheet for information on setting the display base.

FORMAT

```
DSKDDT {devn:}block
```

devn: is the device containing the block you want to see, and ***block*** is the number of the disk block you want to examine and change. The devn: defaults to the disk you are logged into.

OPERATION

Be sure you are logged into [1,2] and enter DSKDDT followed by an optional device specification and a block number. For example:

```
DSKDDT DSK1:202 RETURN
```

DSKDDT reads the block, lists any errors it finds, and is then ready for you to modify the block. Use the DSKDDT commands listed below. DSKDDT displays two bytes of data at a time. To see the first two bytes of the block, type a slash, /. To see the next two bytes, press ↓ or LINE FEED. For example:

```
0/        00452
2/        44510
```

The number on the left of the slash is the RELATIVE disk location within the block you want to examine (the first byte is offset zero, not one). If you are examining block 202, the display above tells you the first two bytes in block #202 are 00452, and the second two bytes are 44510. After you finish using the DSKDDT commands, enter E to exit. DSKDDT then rewrites the block and returns you to AMOS command level.

COMMAND SUMMARY

nnn/	***nnn*** is the relative position of the disk location from the front of the block. For example, 6/ displays the contents of bytes six and seven (the seventh and eighth bytes) in the block.
nnn/NNN	***nnn*** is the relative disk location you want to see (enter in octal), and ***NNN*** is the octal data (two bytes) to replace contents of nnn.
LINE FEED	Display the next two bytes of data in the block. You may also use ↓.
^	Display the previous location.
/	Display location zero (first two bytes).
RETURN	No operation.
RUBOUT	Cancel current command line. Displays XXX and a TAB.
E	Re-write the modified block and exit.
nN	Write the current memory contents to block ***n*** when E is entered. This allows copying from one block to another.
O	Set the entire block to minus ones (177777 octal or FFFF hex). The data on the disk will not be changed until E is entered.
Z	Set the entire block to zeros. The data on the disk won’t be changed until E is entered.
CTRL/C	Exit without updating the block.

MESSAGES

?

DSKDDT didn't understand your command. Enter a valid command.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of valid devices, and try again.

?Cannot READ [device-name] - disk is not mounted

MOUNT the disk and try again.

?Cannot rewrite disk block - insufficient privileges

Your job doesn't have the "write to physical disk blocks" privilege.

?Privileged program - must be logged into [1,2]

Log into [1,2] and try again.

Program restricted to use on local system only

You cannot use DSKDDT across a network. Log into the remote system as a user, then use DSKDDT.

DSKDMP

FUNCTION

Displays contents of physical disk blocks on your terminal in numeric form.

CHARACTERISTICS

DSKDMP is re-entrant and re-usable. The system internally represents all data in numeric form. The DSKDMP display shows you the data in the number base the system is currently using for your numeric displays. Enter block numbers in that same base. See the SET reference sheet for information on changing the display base. **You must be logged into an operator's account, [1,2], to use DSKDMP.**

You may freeze and resume the display by pressing NO SCRL, or by pressing CTRL/S and CTRL/Q. To interrupt the display, press CTRL/C.

FORMAT

```
DSKDMP {devn:}{block}
```

devn: is the logical device and ***block*** is the number of the physical disk block you want to see.

DEFAULTS

The default device is where you are logged. The default block is block zero.

OPERATION

Enter DSKDMP and a device specification and a disk block number. For example:

```
DSKDMP DSK1:202 RETURN
```

DSKDMP asks for the size of the block you wish to dump. Enter the number of bytes you want displayed. Each line displays eight groups of 16 bits. For example:

```
DSKDMP 3063 RETURN
Block size: 128 RETURN
003101 052057 046124 042040 045523 046504 020120 034002
```

This example shows the first 128 bytes of block 2063. DSKDMP always begins with the first byte of the block.

The default block size is 512. If the block size is larger than 256, DSKDMP pauses every 256 bytes. Press RETURN to continue.

MESSAGES

Block size is too large.

Enter a smaller block size.

?Cannot read - illegal block number

You gave DSKDMP a block number that does not exist. Use the DUMP command to display the blocks on your disk.

?Cannot INIT [device-name] - device does not exist

Check your syntax or use DEVTBL to see a list of the devices on your system.

?Cannot READ [device-name] - disk not mounted

MOUNT the disk and try again.

?Privileged program - must be logged into [1,2]

Log into account [1,2] and try again.

DSKFIL

FUNCTION

Tells you what disk blocks are used by a specified file.

CHARACTERISTICS

DSKFIL is re-entrant and re-usable. The numbers you see are displayed in the number base currently in use on your system (usually octal). See the SET reference sheet for information on changing number bases.

FORMAT

```
DSKFIL filespec
```

filespec selects the file whose block numbers you want to see. The default file extension is .LIT.

OPERATION

Enter DSKFIL and the specification of the file whose disk addresses you want to see. For example:

```
DSKFIL SWITCH.TXT RETURN
```

MESSAGES

?Cannot DSKFIL [filespec] - file not found

Check your syntax, or use DIR to find the file.

?File specification error

Check your syntax and try again. Make sure you entered a filespec.

No blocks in file

There are no blocks allocated to this file.

DSKPAK

FUNCTION

Consolidates the blocks in use on the disk to create a single area of free blocks.

CHARACTERISTICS

DSKPAK is re-entrant and re-usable. It is used to avoid fragmentation of open space on the disk. For more information on file allocation, see your *System Operator's Guide*.

Before packing the disk, you MUST use DSKANA to make sure there are no problems with the disk's file link structure. If a minor error in the file link structure does exist, packing the disk will magnify the error dramatically, possibly resulting in loss of all files on the disk. Using DSKANA also frees up any disk blocks marked in the bitmap as in use but not allocated to any file (otherwise, DSKPAK will not be able to move those blocks into the free block area on the disk, resulting in an incompletely packed disk). You may also want to use DSKANA on the disk after packing it. You also must make sure nobody is using the disk you want to pack before using DSKPAK. You must be logged into the System Operator's Account (DSK0:[1,2]).

Because DSKPAK re-organizes the disk file structure completely, it is a good idea to back up the disk before using DSKPAK on it, just in case there are any problems with the disk.

If the system crashes while a DSKPAK is in progress, **you must use DSKANA** after you reboot the system to clean up the disk before writing to it.

FORMAT

```
DSKPAK devn:
```

OPERATION

Log into account DSK0:[1,2]. Use DSKANA to clear up the disk you want to pack. You should also be sure you have a current backup of the disk. Then enter DSKPAK and the specification of the device you want to pack. For example:

```
DSKPAK DSK1: RETURN
```

DSKPAK warns you all users must be off the disk you are going to pack. When you are sure this is true, press RETURN. You may press CTRL/C to stop at this point.

DSKPAK makes as many passes through the disk as it needs to pack it completely. The number of passes DSKPAK makes depends on how much your disk is in need of packing. DSKPAK prints one dot for each disk account processed.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to display the devices defined on your system, and try again.

?Cannot lock directory or [device-name] - disk not mounted

MOUNT the disk and try again.

?File specification error

The file specification was entered wrong. Check to be sure you included the device specification, and check your spelling. Then try again.

?Insufficient free memory

You do not have enough memory in your partition to run DSKPAK. See your System Operator about increasing your memory.

?Privileged program - must be logged into OPR:

Log into account DSK0:[1,2] and try again.

Some blocks are marked in use but not in a file
Please run DSKANA immediately

After the disk was packed, DSKPAK detected a file system problem. Prevent other users from accessing the disk and run DSKANA. Then run DSKPAK again.

DUMP

FUNCTION

Displays on your terminal the contents of memory, random and sequential disk files, Master File Directories, disk bitmaps, user directories, or disk blocks.

CHARACTERISTICS

DUMP is re-entrant and re-usable. DUMP accepts different kinds of arguments, depending upon the kind of data you want to display. Specify numbers in the same number base the system is currently using for displays (usually octal). All hexadecimal numbers must start with a number or a zero. See the SET reference sheet for information on changing the system display base. You may abbreviate the DUMP keywords (for example, BI instead of BITMAP).

FORMAT

There are six different formats for the DUMP command:

To display memory

```
DUMP start-address {end-address}
```

start-address is the first address of the memory block you want to display and ***end-address*** is the last.

To display a file

```
DUMP filespec
```

filespec is a valid file specification of a file.

You can dump a file from MEM: or RES:.

To display a disk block

```
DUMP BLOCK {start-block} {end-block} {devn:}
```

start-block is the number of the first block you want to see, ***end-block*** is the last block you want to see, and ***devn:*** is the specification of the logical device containing the block(s). DUMP RECORD does the same thing as DUMP BLOCK.

To display a disk bitmap

```
DUMP BITMAP {devn:}
```

To display the disk Master File Directory

```
DUMP MFD {devn:}
```

To display a user's disk directory

```
DUMP UFD {[p,pn]} {devn:}
```

or:

```
DUMP UFD {block#} {devn:}
```

☝ You cannot use an ersatz device name to specify the disk account.

DUMP DI performs the same function and uses the same format as DUMP UFD.

DEFAULTS

DUMP assumes the device and account you are currently logged into, and a file extension of .LIT.

OPERATION

Enter DUMP and the keyword and arguments you need. For example:

```
DUMP BLOCK 16407 DSK0: RETURN
```

You can suspend and re-start the scrolling of the DUMP display by using the NO SCRL key, or by pressing CTRL/S and CTRL/Q. To interrupt a display, press CTRL/C. The display types are:

Memory, Block, and File Displays

The most common type of display looks like:

```
Block number 12033 of DSK1:DUMP.TXT, next block link is 6562
00005620:006562 020056   ...  067543The most common
00005640:066555 067157   ...  071551type of display
00005660:066160 074541   ...  063040takes the form
00005700:071157 006555   ...  066541of this example
```

The first number on the left (ending with a colon) is the memory address containing the first byte of data on the line. In this example, memory addresses 00005620 and 00005621 contain the two bytes of data 006562.

Each group of six digits after the memory address represents two bytes (16 bits) of data in octal form. If the system is using hexadecimal for your numeric displays, dump displays the data in groups of eight bits—one byte.

On the far right of the display is a field showing the eight-bit ASCII form of the data. It displays the same data as the numbers in the center of the display, but translated into their character representation. Non-printing characters (such as Control-characters) appear as dots.

Bitmap Display

The disk bitmap display consists of ones and zeros. Each disk block is represented in the bitmap by a one (if the block is in use) or a zero (if it is empty). Each line of the display begins with a number which ends in a colon; this octal or hex number is the number of the disk block represented by the first one or zero on that line. At the end of the display is the total number of free blocks (in decimal) on the disk.

Since the format for dumping the bitmap is different than the format for dumping a disk block, dumping the disk block containing the bitmap will appear to give different information than using `DUMP BITMAP`. Actually, the information is the same; only the format is different.

Master File Directory Display

Every disk contains a Master File Directory containing a list of all accounts on the disk and the starting block number of all individual user file directories (UFDs). Each line of the display represents one UFD. The number on the left gives the disk block number and the relative address of the MFD entry in that disk block. The characters in the center give the account PPN. The number on the right gives the disk block at which the UFD for that account begins. Deleted accounts are marked with an asterisk (*).

User File Directory Display

The display gives the following information about the directory entries:

Block — The disk block number containing the directory entry being displayed.

Offset — The position (in bytes) of the directory entry relative to the start of the block. Displayed in octal or hex.

Filename — The name and extension of the file. (On traditional format disks, “:80” indicates the file has been erased.)

Size — The number of disk blocks in the file displayed in decimal.

Active — The number of active data bytes in the last block of the file. Displayed in octal or hex.

Link — The address of the first disk block of the file. Displayed in octal or hex.

Deleted files are marked with an asterisk (*).

MESSAGES

?Cannot open [filespec] - device does not exist

The system does not understand your device specification. Check your spelling, and try again.

?Cannot open [filespec] - disk not mounted

Use the MOUNT command to mount the device and try again.

?Cannot open [filespec] - file not found

Check your syntax, or use DIR to find the file.

?Cannot open [filespec] - invalid filename

Check your syntax and try again.

?Cannot perform specified operation - device is not file structured

The device you specified is not a file structured device. Choose another device name and re-enter an amended command line.

?Command format error

Make sure you have followed the proper DUMP format for what you wanted to do.

?File specification error

Check the FORMAT section above for information on the valid formats of the DUMP command, and try again.

?PPN does not exist

DUMP was not able to find the account on the device you specified in a DUMP UFD command. Make sure the account exists on that device, and check your syntax.

DVD

FUNCTION

Makes the logical devices on an AMOS DVD accessible without being defined in a DEVTBL statement in your system initialization command file.

CHARACTERISTICS

DVD is re-entrant and re-usable.

For more information about using AlphaDVD, see the *Alpha DVD-RAM Installation Instructions*, which comes with AlphaDVD.

FORMAT

```
DVD {/Options……}
```

OPTIONS

/HELP	Display HELP
/?	Same as /HELP
/V	Display version information and exit
/DEV:xxx	DVD-Recorder device name is xxx:
/ID:n	DVD-Recorder is at SCSI ID n
/PIC	Display Product Installation Code
/U	Uninstall
/V	Set hardware read after write verification

OPERATION

DVD adds DEVTBL and BITMAP entries to the AMOS system so that data can be randomly read or written on the DVD media. DVD/U is used to uninstall the DEVTBL and BITMAP entries prior to removing the media from the DVD drive.

Before starting the program, place an AMOS formatted DVD media into the DVD-RAM drive. The media may contain existing data. See the FMTDVD or MAKDVD commands for instructions on formatting a blank media or for copying AMOS logical disks to the DVD media.

Type DVD {options} from the AMOS prompt:

```
DVD RETURN
```

DVD will attempt to find a DVD-RAM drive. The DVD driver must be in system memory. DVD will find the DVD-RAM drive either using the command line switches /DEV and /ID or by defaulting to DVD: if /DEV is not specified and by scanning the SCSI bus if /ID is not specified. If more than one DVD/CD type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use.

```
Found the following possible DVD-Recorders:

          ID  Description
      1   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
      2   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx

      Select one of the above devices:
```

Additional information about the DVD-RAM drive is then displayed:

```
      DVD-RAM-Recorder located at SCSI id 3
```

If there is no media in the drive, the program displays: `?There is no media installed in the DVD-RAM drive` and exits.

If you want to remove the DVD media or switch to another DVD media, use the /U switch:

```
      DVD/U RETURN
```

REQUIREMENTS AND SETUP

DVD requires the following:

- A 68030 or faster processor
- A full interrupt enabled SCSI dispatcher.
- AMOS 2.3A or later.
- A supported DVD-RAM drive.
- Enough SMEM to hold DEVTBL and BITMAP entries.

The DVD package contains the following required files:

- DVD.LIT
- The device driver for the DVD-RAM drive, in system memory.
- The SSD overlay file (DVD000.OVR)
- FMTDVD.LIT

MESSAGES

DVD-RAM device already exists

The DVD is already installed on the AMOS system. Either DVD has already been run to define the DVD device for random I/O or MAKDVD is currently using the DVD recorder.

DVD-RAM drive found at SCSI id: <#>

DVD is confirming the SCSI ID of the DVD drive it is about to use.

Error - Device specified is not a DVD-RAM Recorder

Error - DVDram driver must be in system memory.

The DVD driver must be loaded into system memory during the AMOS boot process.

?Impossible error - can't find DVDn: entries in DEVTBL

DVD detected a system problem when unmounting the DVD. Reboot the system.

Media is not AMOS format - insert an AlphaDVD and try again

DVD cannot read AMOS device information from the DVD media. Remove the media from the drive and make sure it is an AlphaDVD. Re-insert the media and try DVD again. If the problem still occurs, either it does not contain AMOS information, or the DVD drive needs maintenance.

?There is no media installed in the DVD-RAM drive

Insert a DVD media into the drive.

Unable to find a DVD-RAM Recorder.

No device that looks like a DVD recorder was found

?You must install a SCSI dispatcher prior to using this program.

A SCSI dispatcher is required to use DVD.

DVDRES

FUNCTION

Copies one or more AMOS logical disks from a recordable DVD-RAM media in a supported DVD-RAM-drive to AMOS logical disks. The logical disk(s) being copied to must be the same bitmap word size as the AMOS logical disk being copied from.

✋ DVDRES is only supported on AM8000, Eagle 800 and AMPC 7.0 Systems.

CHARACTERISTICS

DVDRES copies logical AMOS disk(s) from a DVD-RAM media to an AMOS disk drive. The DVD-RAM media AMOS disk and the AMOS disk being copied to must be the same bitmap word size! The MAKDVD software will create logical drives of differing sizes by padding the smaller logicals. DVDRES will not allow for differing bitmap size logicals to be copied! If an unequal bitmap word size is tried, DVDRES will ignore the request and continue with the restoring.

FORMAT

DVDRES {switches}

OPTIONS

/HELP	Display the available options and exits
/?	Same as /HELP
/DEV:xxx:	Uses device and driver named xxx: instead of the default DVD:
/ID:n	Uses the DVD-RAM Drive at SCSI ID n instead of scanning the SCSI bus to find a DVD-RAM Drive. The ID can be from 0 to 15.
/V	Display version information.
/PIC	Display Product Installation Code

OPERATION

Before starting the program, place the DVD media with the logicals you wish to copy in the DVD-RAM drive.

Type DVDRES from the AMOS prompt:

DVDRES RETURN

DVDRES will attempt to find a DVD-RAM drive that is compatible with the DVD-RAM driver being used. The driver must have the same name as the DVD-drive device name and be loaded in system memory. DVDRES will find the DVD-RAM drive either using the command line switches /DEV and /ID or by defaulting to DVD:. If more than one DVD-RAM type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for coping from.

After entering the DVDRES command, the following will be displayed:

```
DVDRES Version X.X(xxx)- x – Copyright © 2002 Alpha Micro Products
```

If DVDRES finds multiple possible DVD-RAM drives while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible DVD-Recorders:

                ID    Description
          1.    nn    xxxxxxxxxxxxxxxxxxxxxxxxx
          2.    nn    xxxxxxxxxxxxxxxxxxxxxxxxx

Select one of the above devices:
```

Additional information about the DVD-RAM drive, driver, and media contents is then displayed:

```
DVD-RAM drive found at SCSI id: x

CD title: xxxxxxxxxxxxxxxxxxxxxxxxxxx

DVD-RAM contains x logical units.
DVD0:   xxxxxxxxxxxxxxxxxxxxxxxxxxx (xxx)     mounted [xxxxx.]
DVD1:   xxxxxxxxxxxxxxxxxxxxxxxxxxx (xxx)     mounted [xxxxx.]
DVD2:   xxxxxxxxxxxxxxxxxxxxxxxxxxx (xxx)     mounted [xxxxx.]
DVD3:   xxxxxxxxxxxxxxxxxxxxxxxxxxx (xxx)     mounted [xxxxx.]
DVD4:   xxxxxxxxxxxxxxxxxxxxxxxxxxx    %ERROR – zero UFD link! [0.]
DVD5:   xxxxxxxxxxxxxxxxxxxxxxxxxxx (xxx)     mounted [xxxxx.]
```

BITMAP WORDS

Blank logical with no data!

DVDRES then asks for the DVD Logical(s) that you wish to copy.

```
Which DVD Logical(s) would you like to restore?
```

Enter list of disk logicals to be transferred. Disk logicals may be entered as a range (ex. Dev0: -20 for dev0: thru dev20:), or may be comma separated. The list is terminated with a blank line:

Enter the logical drives to be copied from.

```
DVD0: -4 RETURN
```

DVDRES then asks for the AMOS Disk Logical(s) that you wish to copy to.

```
Which Disk Logical(s) would you like to restore to?
```

Enter list of disk Logicals to be transferred. Disk Logicals may be entered as a range (ex. Dev0: -20 for dev0: thru dev20:), or may be comma separated. The list is terminated with a blank line:

Enter the logical drives to be copied to.

```
AGB0: -4 RETURN
```

The copying process then begins. As it progresses, status messages are displayed:

The following is a sample of a DVDRES process:

```
.dvdres
DVDRES Version 8.0(101)-5 - Copyright (C) 2002 Alpha Micro Products

Found the following possible DVD-Recorders:

         ID  Description
 1.       5  HL-DT-STDVDRAM GSA-4081B
 2.       3  HITACHI DVD-RAM GF-2050

Select one of the above devices: 1 RETURN
DVD-RAM drive found at SCSI id: 5

CD title: Alpha DVD Backup

DVD-RAM contains 9 logical units.
DVD0:   Open Logical...UPD0:.................... ( )  mounted [56320.]
DVD1:   Open Logical...UPD1:.................... ( )  mounted [56320.]
DVD2:   Open Logical...UPD2:.................... ( )  mounted [56320.]
DVD3:   Open Logical...UPD3:.................... ( )  mounted [56320.]
DVD4:   Open Logical...UPD4:.................... ( )  mounted [56320.]
DVD5:   Open Logical...UPD5:.................... ( )  mounted [56320.]
DVD6:   Open Logical...UPD6:.................... ( )  mounted [56320.]
DVD7:   Open Logical...UPD7:.................... ( )  mounted [56320.]
DVD8:   Open Logical...UPD0:.................... ( )  mounted [56320.]

Which DVD Logical(s) would you like to restore?
```

Enter the list of disk Logicals to be transferred. Disk Logicals may be entered as a range (ex. dev0: -20 for dev0: thru dev20:), or may be comma separated. The list is terminated with a blank line:

```
DVD0: -8 RETURN
```

```
      Which Disk Logical(s) would you like to restore to?
```

Enter list of disk Logicals to be transferred. Disk Logicals may be entered as a range (ex. dev0: -20 for dev0: thru dev20:), or may be comma separated. The list is terminated with a blank line:

```
      TST0: -8 RETURN

---   Date & Time: Mon 18-Sep-2006 08:47:14 AM

      DVD0: [56320.] 440 Mb -----> TST0: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 08:47:14 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 09:00:38 AM Elapse Time: 00:13:24

      DVD1: [56320.] 440 Mb -----> TST1: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 09:00:38 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 09:14:07 AM Elapse Time: 00:13:29

      DVD2: [56320.] 440 Mb -----> TST2: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 09:14:07 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 09:27:36 AM Elapse Time: 00:13:29

      DVD3: [56320.] 440 Mb -----> TST3: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 09:27:36 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 09:41:00 AM Elapse Time: 00:13:24

      DVD4: [56320.] 440 Mb -----> TST4: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 09:41:00 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 09:54:23 AM Elapse Time: 00:13:23

      DVD5: [56320.] 440 Mb -----> TST5: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 09:54:23 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 10:07:44 AM Elapse Time: 00:13:21

      DVD6: [56320.] 440 Mb -----> TST6: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 10:07:44 AM
      Restoring .....................................................
      Logical has been restored & remounted!
---   Date & Time: Mon 18-Sep-2006 10:21:00 AM Elapse Time: 00:13:16

      DVD7: [56320.] 440 Mb -----> TST7: [56320.] 440 Mb
---   Date & Time: Mon 18-Sep-2006 10:21:00 AM
      Restoring .....................................................
      Logical has been restored & remounted!
```

```
  ---   Date & Time: Mon 18-Sep-2006 10:34:15 AM Elapse Time: 00:13:15

        DVD8: [56320.] 440 Mb -----> TST8: [56320.] 440 Mb
  ---   Date & Time: Mon 18-Sep-2006 10:34:15 AM
        Restoring .....................................................
        Logical has been restored & remounted!
  ---   Date & Time: Mon 18-Sep-2006 10:47:30 AM Elapse Time: 00:13:15

-----   Date & Time: Mon 18-Sep-2006 10:47:30 AM Elapse Time: 02:00:16
        DVD Logicals are being uninstalled!
        The program has completed!
```

Now all data has been copied to the AMOS Logicals (TST0: - TST8:) and the AMOS logicals (TST0: - TST8:) are ready to use.

REQUIREMENTS AND SETUP

DVDRES requires the following:

AM-8000, Eagle 800 or AMPC 7.0 based systems
AMOS 8.1 or later
A supported DVD-RAM drive.

✋ **DVDRES is only supported on AM8000, Eagle 800, and AMPC 7.0 Systems.**

The DVDRES package contains the following required files:

DVDRES.LIT
The device driver for the DVD-RAM drive.
The DVD.DEV file that contains supported DVD-RAM drive information
The SSD overlay file (DVD000.OVR)

MODIFYING THE SYSTEM INITIALIZATION FILE:

See the software installation instructions in the AMOS 8.X Owner’s Manual, DSM-00226-00.

MESSAGES

Command line syntax messages:

- Invalid switch
- Invalid switch option

System requirements messages:

- DVDRES requires AMOS 8.x or compatible operating system.
- Memory partition is too small for DVDRES. An additional nnnK of memory is required.

DVD-RAM Recorder device or driver messages:

- Device specified is not a DVD-RAM Recorder.
- This DVD-RAM Recorder requires a different driver.
  The current driver is: xxxxxx
  The required driver is: xxxxxx
  The device and driver selected are inappropriate for the physical DVD-RAM drive.
- Unable to find a DVD-Recorder.
- Unknown DVD-Recorder!
  Error - Unsupported DVD-Recorder drive found.
  The DVD-RAM Recorder is not supported by DVDRES.

Error messages when setting up or reading from the DVD Recorder

- Error - Buffer not initialized.
- Error - Device is already in use.
  This indicates that either another user is running the DVDRES program or the DVD is being used in shared read/write mode.
- Error - Disk in DVD-Recorder is not writeable.
- Error - DVDram driver must be in system memory.
- Error - Unable to load DVD media.
  This indicates a hardware problem with the DVD-RAM drive or a problem with the DVD media.
- Error - Unable to read disk information from media.
  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Fatal SCSI error. Sense key=nn additional sense=nn
  DVD drive device error has occurred. Sense key and additional sense provide further error information.
- Please insert a DVD-RAM media
- Warning - Maximum number of devices exceeded - extras ignored.
- Warning - Unable to close DVD.
  Device error occurred while closing the current DVD. The DVD-RAM may or may not be usable.

- SCSI error message from the driver

  DVD-RAM drive device error has occurred. Code provides additional SCSI error sense information.

  SCSI error – SCSI status =(nn)
  sense key = xx ssssssssssssss Add Sense Code/Qualifier Code = ac.qc

nn	=	SCSI Status Code
xx	=	SCSI Sense Key code
ssss	=	Interpreted sense key code if known
ac	=	SCSI Additional Sense Code
qc	=	SCSI Qualifier Code

Example:

```
.DVDRES/noeject
DVDRES Version 8.0(101)-4 - Copyright (C) 2001 Alpha Micro Products

Initializing SCSI DVD-RAM Recorder...
Found the following possible DVD-Recorders:

         ID  Description
 1.       6  HL-DT-STDVDRAM GSA-4082B
 2.       5  SAMSUNG SCR-1231 REV1.01

Select one of the above devices: 1
Using Generic SCSI-DVD-RAM driver (DVDRAM).
DVD-RAM Recorder located at SCSI id 6

You may enter an optional title for the DVD or press RETURN for none.
Title: AlphaDVD backup “A”

Enter list of disk devices to transfer onto the DVD media.  Devices
may be entered as a range (ex. dev0: -20 for dev0: through dev20:), or
may be comma separated, The list is terminated with a blank line:

dsk0: -6 RETURN

DSK0: 131072 blocks.
DSK1: 131072 blocks.
DSK2: 131072 blocks.
DSK3: 131072 blocks.
DSK4: 131072 blocks.
DSK5: 131072 blocks.
DSK6: 131072 blocks.

The DVD logical unit size is greater than 64K blocks
which could mean compatibility problems on AMOS 1.x systems.
Press RETURN to continue, or ^C to abort DVDRES:

Calculating space requirements:
        AMOS partition requires 229376 sectors.
        2007327 unused sectors remain.

Note that once started, the recording operation can be stopped
by pressing ^C.

Press RETURN to start recording or ^C to abort.
```

```
Transferring DSK0:
SCSI error - SCSI status = (1)
             sense key = 03 medium error Add Sense Code/Qualifier Code = 32.00
Error - Unable to write to the DVD.
```

No defect spare location available

Errors concerning the AMOS DVD data structure:

- Error - Disk geometry calculation was incorrect.
  The AMOS hidden sector parameters calculated are invalid.
- Error - memory previously calculated as available isn't
  Memory required for data buffers has disappeared.
- Error - Unable to calculate AMOS disk geometry.
  The AMOS hidden sector parameters could not be calculated.
- Error - unable to get AMOS data buffer
  The system was unable to acquire memory for data buffers.
- Error- Unable to remove DVD Recorder data buffer from memory.
- Error - Source Bitmap Words could not be calculated!
  For DVDs created before MAKDVD 8.0(101)-4, this error may exist. This error appears when DVDRES tries to calculate the Bitmap Words for a specific logical. The last block of the bitmap area following the hash value has garbage following it. This needs to be cleared for DVDRES 8.0(101)-5 to calculate the logical bitmap words. The logical will be ignored and you must use the COPY command to restore that logical.
- Error - zero UFD link! [0.]
  This error may appear when DVDRES displays the contents of the DVD. It means that the logical which was backed up had no data in it other than the label block and MFD. It is ignored because the bitmap words cannot be calculated.

Normal informational messages:

- The program has completed
  The recording of data from the DVD media is done.
- DVD-RAM Recorder located at SCSI id n
  This shows the SCSI id of the DVD-RAM Drive being used.
- Note that once started, the restoring operation can be stopped by pressing ^C.
  However, if the restoring is stopped, a DSKANA or SYSACT to the last logical that was interrupted needs to be done! The last logical that was interrupted will have a mixture of new and old blocks that will cause problems.
- Restoring DSK0:
- Using Generic SCSI-DVD-RAM driver (DVDRAM)
  This message shows the DVD driver name and description being used.
- Using Panasonic DVD-RAM driver (DVDPAN)

ERASE

FUNCTION

Erases files from the disk.

CHARACTERISTICS

ERASE is re-entrant, re-usable, a wildcard command, and recognizes ersatz names.

FORMAT

```
ERASE filespec{,filespec(s)}{/switch}
```

filespec is a file to be erased, and ***switch*** is an option request.

or:

```
ERASE filespec1=filespec2{,...filespecn}{/switch}
```

filespec1 is a file to be erased if a file matching any of ***filespec2*** through ***filespecn*** is present.

DEFAULTS

ERASE uses the device and account you are logged into as default file specifications. The default extension is null (an extension zero characters long).

OPTIONS

The switches are file switches, and may be abbreviated.

/QUERY	Confirm the erase.
/NOQUERY	Don’t confirm the erase.

OPERATION

Enter ERASE and the files you want to erase. For example:

```
ERASE ACCNT.BAK RETURN
ACCNT.BAK
Total of 1 files deleted, 45 disk blocks freed
```

If you use /Q, ERASE asks you to confirm each deletion:

```
ERASE *.BAK/QUERY RETURN
MATH.BAK? Y
TRIG.BAK? N
```

You don't need to press RETURN after typing Y or N. You may press CTRL/C at any time to stop erasing files.

The second format lets you erase a file only if some other file is present. For example, you want to delete backup (.BAK) files, but only if the corresponding .M68 file exists. You can use this command:

```
ERASE *.BAK=*.M68 RETURN
```

ERASE finds each .M68 file in turn, checks to see if there is a matching .BAK file, and erases it if it finds it.

MESSAGES

?Account does not exist - [p,pn]

Check your typing, or use PPN to list the accounts on your disk.

%Bypassing BADBLK.SYS[1,2]
BADBLK.SYS exists to prevent bad blocks on a device from
being allocated, and should never be directly accessed.
%No files transferred

You cannot erase the BADBLK.SYS file.

?Cannot find DSK0:CMDLIN.SYS[1,4]

ERASE needs this file to be able to process wildcard symbols. Check to see if CMDLIN.SYS exists in DSK0:[1,4]—if it does, it means you didn't have enough memory to load it into your partition. If so, try to increase your memory by erasing unnecessary files. See your System Operator for further help.

?Device not found or mounted - [device-name]

Check your syntax, or use DEVTBL to see a list of valid devices on your system, and try again. If the device isn't mounted, use MOUNT.

?FATAL ERROR. Program terminated.

Either the device's bitmap was corrupted or its Master File Directory (MFD) was damaged. Stop other users from accessing the device, and run the DSKANA program before trying again.

?Maximum input exceeded

You put more characters on the command line than ERASE could handle. Break your command into smaller commands.

?MEM or RES specified on network

You cannot access MEM: or RES: over a network.

?More than one output specification

Re-enter the command using one output specification.

%No files deleted

Check your syntax, or use DIR to find the file(s).

Specification error ^

The ^ symbol points to the error—try again with a corrected command line.

?Wildcard device or unit specified on network

You cannot use wildcard symbols over a network.

ERSATZ

FUNCTION

From the AMOS command line, displays or edits the currently defined ersatz names. In the system initialization command file, names an ersatz definition file.

CHARACTERISTICS

ERSATZ is re-entrant and re-usable. Ersatz names are defined in INI file(s) referred to by the ERSATZ command in your system initialization command file. ERSATZ will not display ersatz specifications added to the ersatz .INI file(s) since the last system reset. See your *System Operator's Guide* for more information about ersatz .INI files and ersatz names.

ERSATZ can change or delete current ersatz definitions and add new ones while your system is running. Any changes you make using ERSATZ are not stored in the ersatz .INI files and are therefore lost when your computer reboots.

FORMAT

```
ERSATZ{/switch}
```

OPTIONS

/A ersatzdef — Add new ersatz definition. There must be a blank entry in the ersatz table in order to use /A (see below).

/D ersatzname — Delete ersatz definition for ***ersatzname***.

/O ersatzdef — Change (override) definition of an existing ersatz name with the one you enter.

/WIDE or /W — Display ersatz definitions in multiple columns. Number of columns depends on the width of your terminal display.

OPERATION

To display existing ersatz definitions, enter ERSATZ at AMOS command level, with or without the /W switch. For example:

ERSATZ RETURN

To add, change or delete an ersatz definition, you must be logged in to OPR:.

To change an existing ersatz definition, use the /O switch, followed by an existing ersatz name and the new meaning you want:

```
ERSATZ/O OLDDEF:=DSK2:[112,0] RETURN
```

This changes the definition of OLDDEF: from whatever it was to DSK2:[112,0].

To delete an existing ersatz definition, use the /D switch and the ersatz name:

```
ERSATZ/D OLDDEF: RETURN
```

This deletes the ersatz definition for OLDDEF:.

✋ Any change you make using /D or /O takes effect immediately, for all users. If other users are using the ersatz name you change or delete, you could keep their commands from working, or cause a file copy or deletion, for example, to affect the wrong disk account. Be very careful when affecting ersatz names used by multiple users.

To add a new ersatz definition, follow the /A switch with the new definition:

```
ERSATZ/A NEWDEF:=1964439999-DSK3:[66,77] RETURN
```

This adds the indicated meaning for the name NEWDEF:.

To add an ersatz definition, there must be a blank entry in the ersatz table. Blank entries are created when you delete an ersatz entry, or by using the /B switch with the ersatz command in the system initialization command file. See the *System Operator's Guide to the System Initialization Command File* for more information about the /B switch.

☝ When adding an ersatz name, remember that ersatz names cannot start with a number. The first character in the name must be a letter.

MESSAGES

?Cannot add definition, ERSATZ table full

You used the /A switch to add a new ersatz name, but there are no blank entries in the ersatz table. You can use /D to delete an ersatz definition and create a blank entry, or add the /B switch to an ERSATZ command in the system initialization command file to create blank entries when the system boots.

?Ersatz device specification is not formatted properly

The definition of the ersatz name is not valid. Retype the line.

?Illegal Switch

You have entered an illegal switch (not /A, /D, /O, or /W). ERSATZ ignores the switch and continues.

%No ersatz devices have been defined

No ERSATZ statement was executed in the system INI file. See your *System Operator's Guide* for more information.

?You must define ersatz names from a file prior to the first SYSTEM command

You entered something after ERSATZ which was not recognized. If you want to add an ersatz name, use the /A switch.

ESLSI

FUNCTION

Displays Ethernet statistical information accumulated by the PCI LAN driver (.LDV) for use only with the AM-7000 computer system.

LDVs are similar to NDVs. The most notable difference is that LDVs are hardware drivers only. They do not perform any network protocol-specific functions. Use this command only on the AM-7000.

CHARACTERISTICS

ESLSI is re-entrant and re-usable. It displays Ethernet statistical information retrieved from a central depository. The LDV updates the central depository continuously. You can press CTRL/C at any time to exit the program.

FORMAT

```
ESLSI{/S}{/C}{/E}
```

If no switch is provided, a usage prompt is displayed.

OPTIONS

/S	Retrieves PCI static page (PAGE I)
/C	Retrieves PCI Rx and Tx status page (PAGE II)
/E	Clears accumulated totals and a new accumulation summary starts (PAGE III)

OPERATION

ESLSI returns the following information from the PCI hardware:

PAGE I: Static Page

BASE 10 – 24 is PCI base address & memory requirements
RDA is Rx descriptor starting & ending address
TDA is Tx descriptor starting & ending address
RBA is Rx buffer area
TBA is TX buffer area
MBADDR is the next available PCI memory address
MEMEND is the system end of memory address
CBMAR is the starting address for the PCI port 0 card

PCIPBR.BUF is the address of the PCI informational memory module
PCI.IMPURE is the address of the PCI impure area
PCI.FLAGS is the general flags
PCI.P0.FLAGS is the Port 0 flags
PCI.P1.FLAGS is the Port 1 flags
FLAGS is PCI Ethernet flags
RDA count is the number of Rx descriptors
TDA count is the number of Tx descriptors
HTDA is the currently held TDA index
ETDA is the end or last TDA
FREE.RX.QUEUE is the next Rx queue index
FREE.TX.QUEUE is the next Tx queue index
CTDAPFP is current TDA index

PAGE II: Rx & Tx Status Page

No RDA to Process is the number of RDAs to process
No TDA to Process is the number of TDAs to process
Interrupts (Total) is the count of all interrupts
Rx Interrupts (All) is the count of all Rx interrupts
Tx Interrupts (All) is the count of all Tx interrupts
Both Rx & Tx Int. is the count of all interrupts with Rx & Tx bits set
RDA Last & First is the count of Rx packets with the last & first segment bit set
Tx Collision count is the total Tx collision counts returned from the chip
Unregistered Type is the total count of unidentifiable packets
Total Send Packets is the total number of packets sent
Total Rx Stop is the total number of times the Rx process has stopped
Total No Rx Buffers is the total number of times an Rx buffer was not available

CINV is total count of referenced packets not on the receive queue
CDISC is total count of discarded request
NOFSD is the total number of Rx packets with no first segment flag set
NOLSD is the total number of Rx packets with no last segment flag set
ARDA.FCNT is the total number of free Rx descriptors
PRDA.UCNT is the total number of used Rx descriptors
ATDA.FCNT is the total number of free Tx descriptors
PTDA.UCNT is the total number of used Tx descriptors
TX.QU.CNT is the Tx queue count
FLAGS is processing flags used by PCI programs
RDES0 is the latest Rx descriptor processed
NTRI is the total count of interrupts without a Tx or Rx request present

CTDAPFP is the current TDA pointer for processing
Missed Frames is the total number of missed frames
Master Abort is the total number of Master Aborts encountered
TLLCNT is the total Tx link loop count (wrap count)
RLLCNT is the total Rx link loop count (wrap count)
PTDA is pending TDA index
CTDA is current free TDA index

CRDA is current RDA pending to be processed
RDA count* is total number of Rx descriptors assigned
TDA count* is total number of Tx descriptors assigned
Wrap count is the total number of times the Rx descriptors have been wrapped
TIMER.CNT is the total number of timer interrupts
ARL.CNT is current total number of available Rx descriptors
PRH.CNT* is the highest level of Rx descriptors used
ATL.CNT is current total number of available Tx descriptors
PTH.CNT* is the highest level of Tx descriptors used
PINFUS.CNT is the total number of packets not for us
IINT.CNT is total invalid interrupt count
NIS.CNT is the total number of normal interrupt count
AIS.CNT is the total number of abnormal interrupt count
CUNF.CNT is the total Tx underrun count
PRDA(A5) is pending RDA index
RCOKERR is the total receive dead status count
TCOKERR is the total transmit dead or txabort status count

*The **PRH.CNT** & **PTH.CNT** fields are very important. **RDA count** tells you the number of receive descriptors have been allocated. **PRH.CNT** tells you the highest number of receive descriptors that have been used at any one time. Conversely **TDA count** tells you the number of transmit descriptors have been allocated and **PTH.CNT** tells you the highest number of transmit descriptors that have been used at any one time. If the numbers become close to each other, then it might be time to think about increasing your allocation in the INI file.

Rx Status:

Rx Error Summary is the total of Rx Status Errors
Length Error is the count of Rx packets larger than standard
Runt Frame is the count of Rx packets smaller than standard
Collision is the total number of collisions encountered
CRC Error is the total number of CRC errors encountered
Frame Too Long is the total number of Rx packets with frames larger than standard
MII Error Report is total number of MII errors encountered
Receive Watchdog is total number of watchdogs encountered
Dribbling Bit is total number of dribbling bits encountered
FIFO Overflow is total number of FIFO overflows encountered
Fatal Bus Error is total number of fatal bus errors encountered

Tx Status:

Tx Error Summary is the total of Tx Status Errors
Loss of carrier is total number of times carrier was lost
No Carrier is total number of times no carrier was encountered
Late Collision is number of late collisions encountered
Excessive Collisions is number of excessive collisions encountered
Link Fail Report is number of link failures reported
Underflow Error is number of underflow errors encountered
Jabber Timeout is number of jabber timeouts encountered
Heartbeat Fail is number of heartbeat failures encountered

Deferred is the number of Tx packet that were not sent out directly
Illegal Descriptor is number of illegal descriptors encountered

PAGE III: Clearing Accumulated Totals

All totals are cleared and a new accumulation summary starts.

MESSAGES

%ERROR - This program is for an AM-7000 only!

This program is only for an AM-7000 Ethernet controller.

%ERROR - invalid switch

The switch you specified is invalid.

%ERROR - invalid impure index!

The PCI impure index has changed. PCI memory has been corrupted.

%ERROR - PCIPBR.BUF not found in system memory!

The PCI bus was not properly initialized.

ESNIC

FUNCTION

Displays Ethernet statistical information accumulated by the PCI LAN driver (.LDV) for use only with the Eagle 450 computer system.

LDVs are similar to NDVs. The most notable difference is that LDVs are hardware drivers only. They do not perform any network protocol-specific functions. Use this command only on the Eagle 450.

CHARACTERISTICS

ESNIC is re-entrant and re-usable. It displays Ethernet statistical information retrieved from a central depository. The LDV updates the central depository continuously. You can press CTRL/C at any time to exit the program.

FORMAT

```
ESNIC{/S}{/C}{/E}
```

If no switch is provided, a usage prompt is displayed.

OPTIONS

/S	Retrieves PCI static page (PAGE I)
/C	Retrieves PCI Rx and Tx status page (PAGE II)
/E	Clears accumulated totals and a new accumulation summary starts (PAGE III)

OPERATION

ESNIC returns the following information from the PCI hardware:

PAGE I: Static Page

BASE 10 – 24 is PCI base address & memory requirements
RDA is Rx descriptor starting & ending address
TDA is Tx descriptor starting & ending address
RBA is Rx buffer area
MBADDR is the next available PCI memory address
MEMEND is the system end of memory address
CBMAR is the starting address for the PCI port 0 card
PCIPBR.BUF is the address of the PCI informational memory module

PCI.IMPURE is the address of the PCI impure area
PCI.FLAGS is the general flags
PCI.P0.FLAGS is the Port 0 flags
PCI.P1.FLAGS is the Port 1 flags
RDA count is the number of Rx descriptors
TDA count is the number of Tx descriptors

PAGE II: Rx & Tx Status Page

Broadcast (Ours) is the count of broadcast packets sent by us.
Broadcast (All) is the count of all broadcast packets.
Interrupts (Total) is the count of all interrupts
Rx Interrupts (All) is the count of all Rx interrupts
Tx Interrupts (All) is the count of all Tx interrupts
Both Rx & Tx Int. is the count of all interrupts with Rx & Tx bits set
RDA Last & First is the count of Rx packets with the last & first segment bit set
Tx Collision count is the total Tx collision counts returned from the chip
Unregistered Type is the total count of unidentifiable packets
Total Send Packets is the total number of packets sent
Total Rx Stop is the total number of times the Rx process has stopped
Total No Rx Buffers is the total number of times an Rx buffer was not available

CINV is total count of referenced packets not on the receive queue
CDISC is total count of discarded request
NOFSD is the total number of Rx packets with no first segment flag set
NOLSD is the total number of Rx packets with no last segment flag set
ARDA.FCNT is the total number of free Rx descriptors
PRDA.UCNT is the total number of used Rx descriptors
ATDA.FCNT is the total number of free Tx descriptors
PTDA.UCNT is the total number of used Tx descriptors
CSR5 is the contents of the configuration register five
FLAGS is processing flags used by PCI programs
RDES0 is the latest Rx descriptor processed
NTRI is the total count of interrupts without a Tx or Rx request present

MF Overflow is the total number of missed frame count overflows
Missed Frames is the total number of missed frames
Master Abort is the total number of Master Aborts encountered
TLLCNT is the total Tx link loop count (wrap count)
RLLCNT is the total Rx link loop count (wrap count)
PTDA is pending TDA index
CTDA is current free TDA index
CRDA is current RDA pending to be processed
RDA count* is total number of Rx descriptors assigned
TDA count* is total number of Tx descriptors assigned
Wrap count is the total number of times the Rx descriptors have been wrapped
TIMER.CNT is the total number of timer interrupts
ARL.CNT is current total number of available Rx descriptors
PRH.CNT* is the highest level of Rx descriptors used

ATL.CNT is current total number of available Tx descriptors
PTH.CNT* is the highest level of Tx descriptors used
PINFUS.CNT is the total number of packets not for us
IINT.CNT is total invalid interrupt count
NIS.CNT is the total number of normal interrupt count
AIS.CNT is the total number of abnormal interrupt count
CUNF.CNT is the total Tx underrun count

*The **PRH.CNT** & **PTH.CNT** fields are very important. **RDA count** tells you the number of receive descriptors have been allocated. **PRH.CNT** tells you the highest number of receive descriptors that have been used at any one time. Conversely **TDA count** tells you the number of transmit descriptors have been allocated and **PTH.CNT** tells you the highest number of transmit descriptors that have been used at any one time. If the numbers become close to each other, then it might be time to think about increasing your allocation in the INI file.

<u>**Rx Status:**</u>
Rx Error Summary is the total of Rx Status Errors
Length Error is the count of Rx packets larger than standard
Runt Frame is the count of Rx packets smaller than standard
Collision is the total number of collisions encountered
CRC Error is the total number of CRC errors encountered
Frame Too Long is the total number of Rx packets with frames larger than standard
MII Error Report is total number of MII errors encountered
Receive Watchdog is total number of watchdogs encountered
Dribbling Bit is total number of dribbling bits encountered
FIFO Overflow is total number of FIFO overflows encountered
Fatal Bus Error is total number of fatal bus errors encountered

<u>**Tx Status:**</u>
Tx Error Summary is the total of Tx Status Errors
Loss of carrier is total number of times carrier was lost
No Carrier is total number of times no carrier was encountered
Late Collision is number of late collisions encountered
Excessive Collisions is number of excessive collisions encountered
Link Fail Report is number of link failures reported
Underflow Error is number of underflow errors encountered
Jabber Timeout is number of jabber timeouts encountered
Heartbeat Fail is number of heartbeat failures encountered
Deferred is the number of Tx packet that were not sent out directly
Illegal Descriptor is number of illegal descriptors encountered

PAGE III: Clearing Accumulated Totals

All totals are cleared and a new accumulation summary starts.

MESSAGES

%ERROR - This program is for an AM-450 only!

This program is only for an AM-450 Ethernet controller.

%ERROR - invalid switch

The switch you specified is invalid.

%ERROR - invalid impure index!

The PCI impure index has changed. PCI memory has been corrupted.

%ERROR - PCIPBR.BUF not found in system memory!

The PCI bus was not properly initialized.

EXP

FUNCTION

Expands a file compressed by the CMP command.

CHARACTERISTICS

EXP is an OS/Exec program that may be used as an AMOS command. Multiple files may be expanded using the "Expand" function of OS/Exec. Only files compressed by the CMP program may be expanded using EXP. The CTYPE command can be used to display the contents of a compressed sequential file. The CDIR command can be used to list the type, size and name of a compressed file.

FORMAT

```
EXP filespec
```

EXP assumes an extension of CMP.

OPERATION

Enter EXP and the specification of the file. For example:

```
EXP TRANS RETURN
```

EXP now displays:

```
Expanding TRANS.CMP...............
```

Each dot represents a block of the uncompressed file that has been expanded. If the original file already exists on the system, a message such as this appears:

```
%TRANS.TXT already exists - expanding to TRANS.EXP
```

When a file, such as "NAME.CMP" is processed, the expanded file is given the original name and extension of the file unless it already exists. In this case the file is named "TRANS.EXP", or "TRANS.E01", etc., depending on how many such files already exist.

MESSAGES

?Bad input file

The file can't be expanded due to a problem in the compressed file's content. Recover your backup file.

File is not an OS/Exec compressed file

You can't expand this file.

?[filename] not found

The file could not be located as specified.

?Insufficient space to allocate this file

There isn't enough space on the disk. Erase unneeded files, or see your System Operator for help.

?More than 101 files with this file name
Rename and reexpand

Too many expanded copies exist. Rename the file and try again.

FILCOM

FUNCTION

Lets you compare the memory contents of two sequential files. Displays the data differences between the two files.

CHARACTERISTICS

FILCOM is re-entrant and re-usable. All numeric displays are in the number base set for your job (see the SET reference sheet). You may press NO SCRL to stop and re-start the display, or press CTRL/S and CTRL/Q. Press CTRL/C to halt FILCOM.

FILCOM reads through the specified files comparing them byte by byte, reporting mismatches as encountered and/or indicating file matches/mismatches. A mismatch or error is reported as a pair of lines which display a mismatch count, the contents of the files at the point of the mismatch in hex/octal, the length(s) of the mismatching sequences, and the byte offsets of the sequences within the files. If a mismatch is longer than the output device width, the output is truncated.

FILCOM doesn't compare multi-part files like ISAM and USAM files. Files with the same data content but different in directory-stored information (e.g. protection, creation date, etc.) aren't reported as different by FILCOM.

See the SRCCOM reference sheet. SRCCOM is slower than FILCOM, but better for variable-length ASCII records of less than 511 characters that end with a carriage-return/line feed.

FORMAT

```
FILCOM filespec1,filespec2 {/switches}
```

filespecs specify the sequential files you want to compare.

SWITCHES

/A	Output in ASCII instead of hex/octal. Non-printable characters shown as ".".
/B{=#}	Minimum length sequence to resume matching. Default is 6.
/C	Compare contiguous files.
/E{=#}	Maximum errors to report before terminating. Default is to report to end of file. A zero reports file match/no-match only.
/F{fspec}	Optional output file. Default is on terminal.
/P{=#}	Starting byte offset in first file. Default is 0.
/Q{=#}	Starting byte offset in second file. Default is 0.
/S{=#}	If a mismatch string is > n, end compare. Default is 128.

OPERATION

Enter FILCOM and the files you want to compare. For example:

```
FILCOM DSKRED[1,4],DSKRED[100,3] RETURN
```

You see a display listing like this:

```
mismatch 1, length = 5:5
0104  43 20 50 4F 57
0104  42 4E 4D 4A 4B
```

The first line of the display above gives the number of the mismatch, and the length of the strings involved. Then you see the byte offset of the string within the file (0104) and the contents of the data (in this case, in hexadecimal).

MESSAGES

%End of file 2 [@offset] in file 1

The second file is shorter than the first.

%End of file 1 [@offset] in file 2

The first file is shorter than the second.

?Equal expected

Try again, using an equal sign. See the format.

?Extraneous file name

You can only compare two files at one time.

?File specification error

Check your syntax and try again.

%Files are identical from offsets [numbers]

From this point to the end of the files, they are the same.

?[filespec] not found

FILCOM couldn't find one or both of the files you specified. Check your syntax or use DIR to find the file(s).

?[filespec]: file type mismatch

At least one of the files you selected is a random file or other illegal type.

?Number expected

Try again, using a number. See the format.

?Starting address [addr] for file [fspec] not within file, size= [size]

You specified a starting point past the end of the file. Re-enter with a smaller number.

**** termination by error count offsets [@offsets] ****

The error count exceeded the number you specified.

**** termination for max mismatch length of [size] exceeded ****

The size of the string mismatch is greater than the size you specified (or the default). You may want to change the size with /S.

FILDMP

FUNCTION

Displays the contents of a sequential file in numeric form.

CHARACTERISTICS

FILDMP is re-entrant and re-usable. May only be used with sequential files. See the DUMP reference sheet for information on dumping random files. Displays the file data in the number base currently in use on your job. See the SET reference sheet for information about setting number bases. Sixteen bytes of data are displayed on each screen line.

FORMAT

```
FILDMP filespec
```

filespec specifies the file whose contents you want to see. The default device and account is where you are logged. The default extension is .OBJ.

OPERATION

Enter FILDMP and the specification of the file whose data you want to see. For example:

```
FILDMP INIT.LIT RETURN
057 124 124 114 040 106 111 114 104 115 120 040 050 103
157
^C
```

Press the NO SCRL key (or CTRL/S and CTRL/Q) to freeze and re-start the display. To end the display, press CTRL/C.

MESSAGE

?Cannot open [filespec] - file not found

Check your syntax, or use DIR to find the file, and try again.

?Cannot open [filespec] - file type mismatch

The file is a random file—use the DUMP command.

?File specification error

Check your format and typing, and try again.

FILTAP

FUNCTION

Writes copies of disk files to magnetic tape.

CHARACTERISTICS

FILTAP is re-entrant and re-usable. Writes files to a magnetic tape along with their device and account specifications. Used in combination with TAPFIL (to transfer files from a magnetic tape to a disk) and TAPDIR (to see list of files on a tape). FILTAP writes the date and time of backup to the tape.

✋ This program is included for compatibility purposes. MTUSAV and MTURES are the preferred backup methods for magnetic tape—see those reference sheets. **FILTAP does not work with extended format disks.** FILTAP is NOT for transferring data between Alpha Micro and non-Alpha Micro computers—use TAPE for that purpose. FILTAP works only on the AMOS/32 and AMOS/L versions of the operating system.

Lets you perform one backup on multiple tape reels. FILTAP is a wildcard file command. See your *AMOS User's Guide* for information on wildcard specifications. You may back up files from any disk account onto tape whether or not the account is within the project you are logged into. Although FILTAP writes the disk specification of the file to the magnetic tape along with the file, it does not transfer any password.

FORMAT

```
FILTAP filespec{/switch}{,...filespec}{/switch}
```

filespec specifies a file to back up, and ***switch*** is an option request.

DEFAULTS

The default file specification is *.* and the account and device you are logged into. The default magnetic tape drive device specification is MTU.

OPTIONS

Placing NO before the switch cancels it. All switches may be abbreviated. Defaults are /NOQUERY and /APPEND. Use /NOAPPEND if you are writing to a blank tape, otherwise FILTAP continuously searches for a file to append after.

/QUERY	Confirm each file before copying. File switch.
/APPEND	Add files at the end of existing files. Operation.

OPERATION

Enter FILTAP and the files you want to back up onto tape. For example:

```
FILTAP MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

Now FILTAP asks you to enter the tape unit number. Enter the unit number of the magnetic tape drive containing the tape reel you want to access (FILTAP uses the MTU device code automatically). FILTAP then tells you what files it is transferring. Remember you can use wildcard file specifications. For example, if you want to back up all .BAS files on the disk:

```
FILTAP *.BAS[] RETURN
```

When you use /Q, FILTAP asks for confirmation before each transfer. Enter Y for yes, or N for no; do not press RETURN after your answer. For example:

```
FILTAP/Q,*.BAS,*.LIT/NOQ,*.LST RETURN
Enter tape unit number: 1
LSTSQR.BAS to MTU1:LSTSQR.BAS? Y
STATUS.LIT to MTU1:STATUS.LIT
NEW.LST to MTU1:NEW.LST? N
```

You may press CTRL/C at any time to prevent further transfers. If FILTAP can't fit all the files you specified on one tape, it lets you continue the backup on another reel.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

FILTAP needs this file to process wildcard symbols. Make sure SCNWLD.SYS is in DSK0:[1,4] and you have enough memory to load it in your partition.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of valid devices, and try again.

?Cannot READ [device-name] - device is not mounted

Mount your device and try again.

?FILTAP does not support extended directories -- use MTUSAV instead.

Move the required files to a logical drive with a traditional format directory structure, or use the MTUSAV program.

%No file-oriented device corresponding to [device-name] is mounted

Check your syntax and try again, or mount the device.

?Program is not supported

FILTAP will not work under this version of AMOS.

%Tape is full, please mount another tape then type RETURN to
% continue, or type Control-C to abort copy

There is no more room on the current reel of tape. Mount another reel and press RETURN to continue the backup process, or press CTRL/C to abort the backup.

FIX

FUNCTION

Executes and symbolically debugs an assembly language program and data structures in a controlled manner.

CHARACTERISTICS

FIX is a screen-oriented debugger, similar in operation to AlphaVUE. It has two modes, Display Mode and Command Mode. In Display Mode you can examine your program and data areas, and you may single-step through portions of the program. In Command Mode you may examine and modify registers, examine data structures, and set up the debugging environment. You may switch between the two FIX modes by pressing ESC.

Both input and output values may be either in symbolic or numeric form. If FIX finds a .SYM file for the program you are debugging, it attempta to display all values in symbolic form. Either octal or hex form may be used for numeric values; use the SET command in Command Mode to change the current radix. For more information, see your *AlphaFIX User's Manual.*

FORMAT

```
FIX {/T:termname} filespec {command-line}
```

T:termname displays the output from the program being debugged on termname, ***filespec*** is the file you want to debug, and ***command-line*** is any input the program you want to debug would have. The default file extension is .LIT.

If you use /T, termname cannot be attached to a job.

OPERATION

Enter FIX followed by the specification of the file you want to debug and any following command line text. For example:

```
FIX REMOVE ACCT.LIT RETURN
```

FIX loads the file into your memory partition (unless it is already there). It also attempts to locate the corresponding .SYM file and load it into memory. FIX then enters Command Mode, prints a status display and the registers. It then prompts you with a right angle bracket >. You may now enter FIX commands, or press ESC to enter Display Mode. In the case above, FIX will debug the program REMOVE, which is acting upon the file ACCT.LIT.

To exit AlphaFIX, go to Command Mode and enter Q. FIX deletes all memory modules it created (including the program you were debugging) and returns you to command level.

To access a local symbol, specify the non-local symbol preceding the local symbol, enter a space, then enter the local symbol. For example, in using the Search command:

```
>S LABEL:10$ RETURN
```

LABEL is the non-local symbol preceding the local symbol ***10$***.

COMMAND SUMMARY

Below is a brief list of FIX commands—see your *AlphaFIX User's Manual* for a full list.

Display Mode

↓ or CTRL/J	Move cursor down one instruction.
↑ or CTRL/K	Move cursor up one instruction.
NEXT SCREEN or CTRL/T	Move cursor down a page (24 instructions).
HOME or CTRL/^	Move cursor to current PC location.
F5 or CTRL/P	Toggle breakpoint.
CTRL/X	Proceed to breakpoint.
RETURN	Single-step

Command Mode

S	Search for symbol.
Q	Leave AlphaFIX.
Dn or An	Modify address register.
GO	Execute AMOS command.

MESSAGES

?Alternate terminal does not exist

The terminal name you specified with the /T switch does not exist. Use TRMDEF to list the names of available terminals, and re-enter an amended command line.

?Alternate terminal is attached to a job

The terminal you specified is attached to a job. Detach it by attaching another terminal to that job, and re-enter the FIX command.

%Incorrect symbol file version

FIX only supports .SYM files generated with later versions of SYMLIT that produced variable-length symbols. FIX will ignore the .SYM file.

%Symbol file not found - debugging without symbols

A .SYM file corresponding to the file you are debugging was not found in the same directory as the file being debugged. FIX will continue, but it can only display numeric information and offsets rather than symbolic literals and labels.

What?

AlphaFIX does not recognize your command.

FIXCRC

FUNCTION

Reads and re-writes a disk block to try to correct a bad Cyclic Redundancy Checksum (CRC).

CHARACTERISTICS

FIXCRC is re-entrant and re-usable. **You must be logged into an operator's account [1,2] to use FIXCRC.**

You cannot use FIXCRC over a network.

The data written back to the specified disk block may not be correct, but at least you will be able to access that block. You should check the contents of the block for accuracy using DUMP after using FIXCRC.

FORMAT

```
FIXCRC {devn:}{block}
```

devn: is the disk device and ***block*** is the number of the block you wish to try to correct. The default device is DSK0:, and the block number defaults to block zero.

OPERATION

Log into [1,2]. Enter FIXCRC and the device and/or block number. For example:

```
LOG 1,2 RETURN
FIXCRC DSK1:512 RETURN
```

The block number is in either octal or hex, depending on your job's current setting.

If the block can't be corrected, an error message will be displayed.

Sometimes the block can be read from the disk seemingly successfully, especially if the CRC error is in a non-data part of the disk sector. However, some drives or controllers return a block filled with zeroes if a CRC error occurs on a read; in that case you cannot retrieve any byte of data, good or bad, from that sector. FIXCRC will warn you if the returned block consists of all zeroes, and ask you to confirm you want to write back zeroes to the block, overwriting any data in that block.

MESSAGES

?Privileged program - must be logged into [1,2]

Log into [1,2] and try again.

?Unable to correct disk error

The disk block you specified cannot be corrected. See your Alpha Micro representative for help.

FIXFLP

FUNCTION

Configures a floppy diskette driver for a specific combination of diskette format, disk drive, and disk controller. Used with the AM-212 and AM-214 controllers.

CHARACTERISTICS

FIXFLP is re-entrant and re-usable. Because of the large number of possible permutations of diskette formats, drives and controllers, it is no longer possible to provide a separate disk driver program for each combination. For information on the large number of floppy disk formats available, see your Alpha Micro dealer.

You must be logged into DSK0:[1,6] to use FIXFLP. You may not use single-density AMS format with either the AM-212 or AM-214 controller.

Remember to add a BITMAP command to your system initialization command file for each new format/drive/controller combination you create. You may also need to modify a DEVTBL command line. See your *System Operator's Guide* for details.

OPERATION

Log into the system Device Driver Library account, and enter FIXFLP:

```
LOG DSK0:[1,6] RETURN
FIXFLP RETURN
```

FIXFLP now asks questions to identify the type of diskette drive you have and the type of driver you want to create: diskette size, drive type, diskette format, single or double density, and single or double sided. Finally, it asks you for the driver name. Each driver must have a unique, three-letter name. Then, FIXFLP configures the driver and tells you the bitmap size. This is the number of words you assign to the bitmap when you define the device in your system initialization file. **Write this number down**.

For example, here is how you could define a driver for a 3.5" diskette drive using double-sided, double-density diskettes under AMOS:

```
FIXFLP RETURN
Enter drive type (A) 8 inch
                 (B) 5 1-4 inch
                 (C) 3 1-2 inch
Selection: C RETURN
Format (A) AMS or (B) DOS
Selection: A RETURN
Density (A) Double or (B) High
Selection: A RETURN
Enter new driver name: DDA RETURN
New driver is now in memory, bitmap size is 180
```

Although the new driver is in memory, it is not yet a file on the disk. Save it to the disk by using the SAVE command. For example:

```
SAVE DDA.DVR RETURN
```

If you are adding a new device to the system, remember to modify your system initialization command file to change the system device table and bitmap areas. See your *System Operator's Guide*.

MESSAGES

?AM-212 or 214 does not support single-density AMS format

Re-run FIXFLP, and select another format.

?Could not find 21XDVR.DVR
?Could not find APCDVR.DVR

The file listed was not found in DSK0:[1,6]. Use DIR to try and locate the file, or see your System Operator for help.

?Illegal filename

Check your syntax and re-enter the filename.

?Invalid device

You have a bad version of 21XDVR.DVR in DSK0:[1,6]. See your System Operator for help.

?Invalid response

Check your typing, and try again with a valid response.

Please enter Y or N

Enter Y for Yes or N for No.

?You must be logged into PPN 1,6 to modify the driver

Log into DSK0:[1,6] and try again.

FIXLOG

FUNCTION

Changes the number of logical devices on a self-configuring disk, or defines a new subsystem driver for a self-configuring disk.

CHARACTERISTICS

You must be logged into account DSK0:[1,2] to change the number of logical devices on a self-configuring disk. FIXLOG should only be run on self-configuring disks. You must be logged into account DSK0:[1,2] or DSK0:[1,6] to define a new subsystem driver.

✋ **Running the FIXLOG program without following all the procedures outlined below could severely damage the data on your disk and you may be unable to boot your system. Follow the instructions carefully.**

If you are generating a new monitor, you do not have to run FIXLOG unless you wish to change the number of logical devices. When using MONGEN for self-configuring disks, you should specify the correct generic SCSI driver program for your computer/SCSI bus combination in response to the "`New Disk Driver Name:`" prompt. See your *System Operator's Guide*.

OPERATION

Using FIXLOG itself is relatively simple. Log into DSK0:[1,2] or DSK0:[1,6] and type the command, then choose which of the two options you want to use. For example:

```
LOG OPR: RETURN
FIXLOG RETURN

1. Change the number of logicals
2. Create a subsystem driver

Enter choice:
```

However, FIXLOG itself is only part of a larger process. The two procedures FIXLOG is part of are described below.

TO CHANGE THE NUMBER OF LOGICAL DEVICES

✋ Before starting this procedure, ***back up the entire disk on which you are going to change the number of devices***. If you are changing the number of devices on your system disk, also ***make a warm boot tape***. As part of this procedure, you erase all data on the disk you're changing!

After backing up, follow this procedure:

1. Log into OPR: and enter FIXLOG, as described above.
2. Type **`1`** on the FIXLOG menu. For the device specification, type the name of the first logical device on the physical disk you want to change the number of logicals on. For example:

   ```
   Enter device spec: DSK0: RETURN
   ```

   If you have changed the number of logical devices before, FIXLOG displays the current number of logical devices. You then are asked to enter the new number of logical devices. The number may range from 1 to 65535.
3. After you answer the above question, FIXLOG asks you to confirm you really want to change the number of devices. If you answer `N`, FIXLOG returns you to AMOS without making any changes. If you answer `Y`, FIXLOG changes the number of logical devices, and displays:

   ```
   [device-name] has been changed to [number] logical drives.
   New bitmap size is [size] words.
   ```

   Write down the bitmap size given in this message—you may need this number in the next step.

   DO NOT reboot your system or mount the drive you just changed until you are told to below.
4. If necessary, update your system initialization command file to change the bitmap size and define the new number of logical devices. You may not need to do this if you are using self-configuring BITMAP and/or DEVTBL statements. See your *System Operator's Guide to the System Initialization Command File* for more information about changing the system initialization command file.
5. Back up the entire system. You need this backup, in addition to the one you made before starting this procedure, because this one includes the changes you've made up to this point. You will use this backup tape later in the procedure. The previous backup is a "failsafe" so you can return to your previous configuration if something goes wrong.
6. Create a warm boot tape that reflects the NEW number of logical devices. Make sure the warm boot tape contains VUE.LIT, DSKANA.LIT, the command to let you restore from your backup tape (MTURES.LIT, RESTOR.LIT, etc.) and other useful programs.
7. Warm boot using the new warm boot tape.
8. Run the SYSACT program (using the I—initialize option) on all of the disks on which you are changing the number of logical devices.
9. Run the DSKANA program. If everything is correct, run the SYSTAT command. If no `?Bitmap kaput` error appears for DSK0:, then continue.

10. If the disk you're changing is a SCSI drive, skip this step. If not, type the BADBLK command followed by the device name. Select the 'L' option to list the bad blocks on the disk. Select the 'H' option to see a list of other possible selections. Every disk has a certain number of bad blocks which are quite acceptable as long as they're listed in the bad block file so the system can work around them. An error message tells you if there are any problems. If no error messages appear, you know the logical devices have been successfully changed. If you have problems, contact your Alpha Micro dealer or the Alpha Micro Technical Assistance Center for help.
11. Now use MTURES or RESTOR to load all the information back onto the disk you changed.
12. Reboot your system.

    If you have any problems with your system initialization command file that do not allow your system to boot, perform the warm boot again, and then edit your system initialization command file to correct the problem.

It is a good idea to run the DSKANA program after this to verify everything is correct with your disk.

TO DEFINE A SUBSYSTEM DRIVER PROGRAM

1. Log into DVR: and enter FIXLOG:

```
LOG DSK0:[1,6] RETURN
FIXLOG RETURN
```

2. Type **2** on the FIXLOG menu. FIXLOG asks for the name of the generic driver to be used. The file extension default is .DVR.
3. FIXLOG next asks for the number of logical drives per physical device. Then, it asks for either the subsystem number (0 - 3), or the SCSI ID number (0 - 6 for the narrow SCSI bus, 0 - 6 or 8 - 15 for the Wide SCSI bus). If you are not sure what the subsystem number should be, see the documentation for your type of system and for your drive unit—the subsystem number depends on many hardware factors. If you have trouble, see your System Operator or Alpha Micro representative for help.
4. If you have a SCSI controller and driver which support it, FIXLOG then asks for the number of read-ahead blocks.
5. If you have an intelligent disk controller, you are next asked for the controller board number. FIXLOG needs to know which controller the disk for which you are defining a driver is connected to. See your Installation Guide to find out a board's number.
6. Finally, FIXLOG asks you for the new driver name. Enter a unique three-letter name for your driver program. FIXLOG then builds the driver program, and tells you the driver is in memory.

7. SAVE the driver to the disk. For example:

```
SAVE WIN.DVR RETURN
```

If you do not specify an extension, SAVE saves the file under the .DVR extension (indicating a device driver program).

Now that FIXLOG has defined a driver for you, you must revise your system initialization command file to include the new information about the device. For information on changing this file, see your *System Operator's Guide to the System Initialization Command File*.

MESSAGES

?[device-name] contains invalid disk controller information

The device you tried to run FIXLOG on is not a self-configuring drive. You cannot use FIXLOG on that device. See your *System Operator's Guide* for information on changing the number of logical devices.

?[devn:] is not the 1st logical unit

The device you entered is not the first logical device of its physical unit. Only that device name can be specified to FIXLOG. Use DEVTBL to locate the correct device name, and redo the FIXLOG command.

?[dev0:] does not exist

You either misspelled the device name or are trying to change the number of logical devices on a device that is not currently defined on the system.

?The number of logical drives requested is invalid.
The maximum number of logical drives allowed is n.

You asked for an invalid number of logical drives. Try again with a proper number.

?Cannot find [driver-name]

The driver for your drive was not found. You may have mistyped the name. See your Alpha Micro representative if you need help restoring the driver to the proper account (DSK0:[1,6]).

?Could not load [driver-name] - [AMOS error message]

The driver could not be loaded for the reason given. You may not be logged into DSK0:[1,6], or you may have typed the name incorrectly. Try to correct the situation or see your Alpha Micro representative for help.

?Invalid device driver

The device driver for your drive is incorrect. See your Alpha Micro representative for help.

?Invalid entry. {Must be between x and y.}

You entered an invalid number. Check the choices allowed and re-enter.

FIXTRN

FUNCTION

Lets you create and edit function key translation files.

CHARACTERISTICS

FIXTRN is re-entrant and re-usable.

Creates a file on the disk (with a default extension of .XLT), which can then be loaded into user or system memory as needed. You must be on the same type of terminal as the one the .XLT file will be used on.

✋ You will get unpredictable results if you use FIXTRN on a file that is not a function key translation table.

FORMAT

```
FIXTRN translation-table-name
```

OPERATION

Enter FIXTRN and the translation table name. For example:

```
FIXTRN KEYS RETURN
```

If the file does not exist, you are asked if you want to create it.   FIXTRN then asks:

```
Enter the unique character to terminate the sequence:
```

Press whatever single key you want to use to tell FIXTRN you are finished with a definition. The most commonly used key for a terminator (since you rarely want to include it in a definition) is RUBOUT or DELETE. As you press the key, FIXTRN echoes it (or its code) to your screen. You may NOT use as a terminator any key that sends a two-character sequence (for example, another function key). Next FIXTRN asks:

```
Enter the key you wish to have translated:
```

Press the key you wish to define (or re-define)—for example, the F1 key. If the .XLT module in memory already has a definition for the key you just pressed, FIXTRN displays the current definition.

You must enter the characters EXACTLY as you wish them sent—EVERY character you enter at this point is part of the key definition. This means you can't edit your definition, since a RUBOUT or

CTRL/U is entered as part of the key definition. If you make a mistake typing, just start again by entering the terminator character and re-entering the key to define. Once the key is defined to your satisfaction, enter the terminator character to end the definition.

To enter a decimal for a number (pressing a numeric key on the keyboard gives an ASCII value), press CTRL and the underline character followed by CTRL and a letter. CTRL/A represents an ESC sequence (which also equals decimal value one), CTRL/B represents decimal 2, CTRL/C equals decimal 3, etc. instead of a key you wish to define.

Once you have exited from FIXTRN, an updated module is saved on the disk. If you want the module to have a different name, you can use the RENAME command to rename the disk file.

MESSAGES

?File specification error

Enter FIXTRN again with a filename for the file you wish to create.

FIX210

FUNCTION

Configures a floppy disk driver for a specific combination of floppy disk format, disk drive, and disk controller. Used with the AM-210 Floppy controller, and the AM-1000 and AM-1200 systems.

CHARACTERISTICS

FIX210 is re-entrant and re-usable. Because of the large number of possible permutations of floppy disk formats, drives and controllers, it is no longer possible to provide a separate disk driver program for each combination. For information on the large number of floppy disk formats available, see your Alpha Micro dealer.

You must be logged into DSK0:[1,6] to use FIX210. You may not use single-density AMS format for 8 inch floppies if you are going to be running the drive under control of the AM-210 disk controller.

FIX210 works only under the AMOS/L version of the operating system.

Remember to add a BITMAP command to your system initialization command file for each new format/drive/controller combination you create. You may also need to modify a DEVTBL command line.

OPERATION

Log into the system Device Driver Library account, and enter FIX210:

```
LOG DSK0:[1,6] RETURN
FIX210 RETURN
```

FIX210 now asks you questions to identify the type of floppy drive you have.

CDC 8" drives have an LED indicator light in the middle of the door latch. Qume 8" drives have an LED indicator light on the front, upper left hand corner of the drive.

Then it asks you if you want to use double-density disks—enter **Y** for Yes or **N** for No. FIX210 then asks you to select the type of format you want the driver to use. You may not specify the AMS format if it is for an 8 inch floppy using single-density format.

FIX210 asks if you are using double-sided disks. Answer **Y** or **N**. Finally, FIX210 asks you to enter the new driver name. Each driver must have a unique, three-character name.

Now FIX210 configures the driver and tells you the bitmap size. This is the number of words you assign to the bitmap when you define the device in your system initialization file. **Write this number down.**

Although the new driver is in memory, it is not yet a file on the disk. Save it to the disk by using the SAVE command. For example:

```
SAVE DDS.DVR RETURN
```

If you are adding a new device to the system, remember to modify your system initialization command file to change the system device table and bitmap areas. See your *System Operator's Guide to the System Initialization Command File.*

MESSAGES

?AM-210 does not support single-density AMS format

Re-run FIX210, and select another format.

?Could not find 210DVR.DVR

The file 210DVR.DVR was not found in DSK0:[1,6]. Use DIR to try and locate the file, or see your System Operator for help.

?Illegal filename

Check your syntax and re-enter the filename.

?Invalid device

You have a bad version of 210DVR.DVR in DSK0:[1,6]. See your System Operator for help.

?Invalid response

Check your typing, and try again with a valid response.

Please enter Y or N

Enter Y for Yes of N for No.

?Program is not supported.

You are not running under the AMOS/L version of the operating system. The AM-210 floppy disk controller is only supported under that version.

?You must be logged into PPN 1,6 to modify the driver

Log into DSK0:[1,6] and try again.

FIX219

FUNCTION

Configures a diskette driver for use with the AM-219 diskette drive controller. Supports both 3.5" and 5.25" drives and both AMOS and DOS diskette formats.

CHARACTERISTICS

FIX219 is re-entrant and re-usable. The AM-219 supports a large number of diskette capacities and formats; FIX219 lets you create one or more drivers to support the types of diskettes you want to use.

You must be logged into DSK0:[1,6] to use FIX219.

Remember to add a BITMAP command to your system initialization command file for each new format/drive combination you create. You may also need to modify a DEVTBL command line. See your *System Operator's Guide* for details.

OPERATION

Log into the system Device Driver Library account, and enter FIX219:

```
LOG DSK0:[1,6] RETURN
FIX219 RETURN
```

FIX219 now asks what type of driver you want to create, and the name you want to give the driver program. It then configures the driver and tells you the bitmap size. This is the number of words you assign to the bitmap when you define the device in your system initialization file. **Write this number down**.

For example:

```
FIX219 RETURN
Enter desired driver format
      (A) PC 1.44Mb 3 1/2"
      (B) PC 720Kb 3 1/2"
      (C) PC 1.2Kb 5 1/4"
      (D) PC 360Kb 5 1/4"
      (E) AMOS 720Kb 3 1/2"
      (F) AMOS 800Kb 5 1/4"
      (G) AMOS 1.2Mb 5 1/4"
      (H) AMOS 1.44Mb 3 1/2"

Selection: F RETURN
Enter new driver name: MIN RETURN
New driver is now in memory. Bitmap size is 100 words.
```

This creates a driver for AMOS-formatted 5.25" diskettes with 800KB capacity.

Although the new driver is in memory, it is not yet a file on the disk. Save it to the disk by using the SAVE command. For example:

```
SAVE MIN.DVR RETURN
```

If you are adding a new device to the system, remember to modify your system initialization command file to change the system device table and bitmap areas. See your *System Operator's Guide*.

MESSAGES

?Cannot load DSK0:219DVR.DVR[1,6]

The file 219DVR.DVR was not found in DSK0:[1,6]. Use DIR to try and locate the file, or see your System Operator for help.

?Invalid response

Check your typing, and try again with a valid response.

?You must be logged into PPN 1,6 to modify the driver

Log into DSK0:[1,6] and try again.

FIX420

FUNCTION

Configures a disk driver for a specific Winchester disk drive.

CHARACTERISTICS

FIX420 is re-entrant and re-usable. **You must be logged into DSK0:[1,6] to use FIX420.**

Remember to add a BITMAP command in your system initialization command file for each new format/drive/controller combination you create. You also need to add a separate DEVTBL command line for each drive you add to the system. See your *System Operator's Guide to the System Initialization Command File* for more information.

OPERATION

Log into the system Device Driver Library account and enter FIX420:

```
LOG DSK0:[1,6] RETURN
FIX420 RETURN
```

FIX420 begins by asking you to select the type of drive you have (from a menu of devices). Select the letter corresponding to your type of drive.

If you are not sure what kind of disk drive you have, see the System History label.

FIX420 then asks you how many logical drives per physical unit. Enter a number between the minimum and maximum listed. Then you are asked if you want to create a subsystem driver. If your drive is an AM-1001 subsystem, answer **Y** (yes) to this question, and FIX420 creates a subsystem driver for you. As part of this process, FIX420 asks you to specify the subsystem. Enter the AM-1001 controller address (1, 2, or 3) for the subsystem you wish to create a driver for.

FIX420 continues by asking for the new driver name. Each driver must have a unique three character name.

After you have finished entering the information above, FIX420 configures the driver and displays the bitmap size. Write this number down—you will need it when you modify your system initialization command file.

Although the new driver is in memory, it is not yet a file on the disk. Save it to the disk by using the SAVE command. For example:

```
SAVE PLD.DVR RETURN
```

If you are adding a new device to the system, remember to modify the system initialization command file to change the system device table and bitmap areas. See your *System Operator's Guide to the System Initialization Command File.*

MESSAGES

?Could not find [filename]

FIX420 couldn't find the necessary file. You must have the proper driver program in DSK0:[1,6]. Use DIR to see what drivers are available in [1,6], and see your Alpha Micro representative if you need one you don't have.

?Invalid device

You have a bad version of your driver program in DSK0:[1,6]. See your Alpha Micro representative for help.

?Invalid response

Check your typing, and enter a valid response.

?You must be logged into PPN 1,6 to modify the driver.

Log into DSK0:[1,6] and try again.

[filename] is not compatible with this version of FIX420.

Your driver program was created under an earlier version of AMOS, and will not work with the current version. Re-create the driver on your system—see your Alpha Micro representative for help.

FLPDIR

FUNCTION

Allows you to display a list of the files on a floppy disk. Also allows you to create a disk file containing the floppy disk directory.

CHARACTERISTICS

This program is provided for compatibility. You normally should use BAKDIR. **FLPDIR does not work with extended format disks.**

FLPDIR is re-entrant and re-usable. Used in combination with WINFLP (to write Winchester disk files to a floppy disk and FLPWIN (to copy files from a floppy disk to a Winchester disk). The floppy disk you read with FLPDIR must previously have been written by the WINFLP program. FLPDIR is a wildcard command. See your *AMOS User's Guide* for information on wildcard file specifications.

FORMAT

```
FLPDIR {/switch}{listfilespec=}{filespec(s)}
```

switch is an option request. The optional ***listfilespec*** specifies a disk file to contain the floppy disk directory display. The ***filespec(s)*** specify the files on the floppy disk you want listed.

DEFAULTS

The default listfilespec is DIRECT.LST in the account and device you are logged into. The default filespec is *.* and the account and device you are logged into. The default floppy drive device specification is DDA0:.

OPTIONS

/KILL	Delete existing listfile before creating the new one. Operation switch.

OPERATION

Enter FLPDIR and the specifications you need. For example, to display all the files on a floppy disk on your terminal:

```
FLPDIR ALL:[] RETURN
```

Now FLPDIR asks you to enter the device name of the backup device. Enter the name of your floppy drive. The default device code is DDA0:.

The first number on the directory display line tells you the file's relative position on the floppy disk. Next you see the device specification, the filename and extension, and the account specification of the file as it appeared on the disk it was being backed up from. The next number tells you the number of disk blocks the file takes up on this disk. FLPDIR now tells you whether the file is a linked (sequential) file (L), or a contiguous (random) file (C), and also whether a file is split across multiple media (S). Finally, FLPDIR displays the date and time of the backup. At the end of the directory display, FLPDIR tells you how many files were listed in the display.

If your printer has been defined on your system as a terminal, you may send the display directly to a printer by using an output specification of TRM:printer-name.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

See your System Operator about locating the file.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Cannot READ [device-name] - device is not mounted

Mount the device, and try again.

?Device full

See your System Operator about clearing room on the disk and try again.

?Device is not properly file structured

The floppy disk was not written by WINFLP. Make sure you mounted the correct floppy disk.

?DSK is not a valid backup device

You could not have used DSK (the system disk) as a backup drive. Choose another device.

?More than one output specification

Try again, entering only one listfilespec.

%No file-oriented device corresponding to [device-name] is mounted

FLPDIR can't find a logical unit matching your specification. Check your syntax, or try mounting the device.

%No such files

FLPDIR couldn't find any files matching your input specification. Check your spelling, or use a more general specification.

FLPWIN

FUNCTION

Copies files from a floppy disk to a Winchester disk.

CHARACTERISTICS

This program is provided for compatibility purposes. You normally should use the RESTOR program. FLPWIN does not work with extended format disks.

FLPWIN is re-entrant and re-usable. FLPWIN may not be used to transfer data between Alpha Micro and non-Alpha Micro computers.

Used in combination with WINFLP (to write disk files to the floppy disk) and FLPDIR (to see a list of files on the floppy disk). Only copies files written using the WINFLP program.

You must use a separate FLPWIN command for each floppy disk. You may not copy to a disk account unless you are either in the same project as the account you are copying files to or you are logged into a System Operator's account, [1,2]. You may copy files into the account you are logged into from any other account.

FLPWIN is a wildcard file command. See your *AMOS User's Guide* for information on wildcard commands.

FORMAT

```
FLPWIN{/switch}{outspec}=filespec{,filespec{/switch}}
```

switch specifies a FLPWIN option, ***outspec*** is the device and account the files are to be written to on the disk, and to optionally rename the files as they are written out to the disk. The ***filespec(s)*** are the file(s) to be transferred from the floppy disk (including the disk device and account specifications where they were backed up from).

DEFAULTS

The output specification defaults to the input specification. If you are logged into [1,2], the default output account specification is [], and if the account you are copying to does not exist, FLPWIN creates it.

The input specification defaults to *.* and the account and device you are logged into. The default switches are /NOQ and /D. The default floppy device specification is DDA0:.

OPTIONS

If you place NO before the switch (i.e., /NOQ), it cancels the switch. Switches may be abbreviated. Defaults are /NOQ and /D.

/QUERY	Confirm before copying files. File switch.
/DELETE	Copy over existing files. File switch.

OPERATION

Enter FLPWIN followed by the specifications you need. For example, to copy all .LIT files from the floppy disk originally backed up from account [110,2] on DSK2: over to your current account DSK3:[110,5]:

```
FLPWIN DSK3:[110,5]=DSK2:*.LIT[110,2] RETURN
```

Now FLPWIN asks you to enter the backup device name (the name of your floppy drive). Remember you may specify wildcard file specifications to FLPWIN (as in the input specification *.LIT, above).

Use the /Q switch to ask for confirmation before each transfer. Enter **Y** for Yes or **N** for No after each prompt. Do not press RETURN after your answer. For example:

```
FLPWIN *.OLD[]=DSK3:*.M68[10,*]/Q RETURN
Enter backup device: DDA0: RETURN
DDA0:DSK3:NEW.M68[10,3] to DSK2:NEW.OLD[10,3]? Y
DDA0:DSK3:SCRTCH.M68[10,6] to DSK2:SCRTCH.OLD[10,6]? N
```

You may press CTRL/C at any time to stop the file transfer. Remember, the placement of the FLPWIN switches modifies their effect.

MESSAGES

?Attempt to copy files out of sequence.
?New file is number N, last file was number M

Files split between two floppy disks are given sequence numbers (0, 1, 2, etc.). You tried to get a file which is split between two floppy disks, but the file on the floppy disk you inserted isn't the second half of the file. Make sure you have the right floppy.

%Bypassing BADBLK.SYS[1,2]
% BADBLK.SYS exists to prevent bad blocks
% on a device from being allocated, and
% should never be directly accessed.

You cannot copy the BADBLK.SYS[1,2] file.

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

FLPWIN needs this file to be able to process wildcard symbols in your file specifications. This message can mean SCNWLD.SYS does not exist, is not in the proper account, or you do not have enough memory to load it into your partition. See your System Operator for help.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Cannot OPEN [device-name] - protection violation

Either log into [1,2] or the account you want to write to, and try again.

?Cannot READ [device-name] - device is not mounted

Mount the device and try again.

?Cannot restore 1.3 files to a 1.4 disk.

You cannot restore the files to a logical disk with an extended directory structure. Choose another output device.

?Device full

There is no more room on the disk. See if you can clear some memory space on the disk by erasing old files, .BAK files, etc.

?Device is not properly file-structured

The floppy disk you are trying to read was not written by WINFLP. Make sure you mounted the correct floppy disk.

?File unsplit mismatch error

You tried to restore a split file, but the next disk entered contained a new file. Make sure you have the correct disk.

?Files may not be transferred to RES:

You may only add programs to system memory by using the SYSTEM command in your system INI file. Change your output specification to restore the files to the disk.

?Missing output specification

You left out the equal sign in the FLPWIN command line; FLPWIN couldn't tell which information was your input specification and which was your output specification. Try again with an equal sign.

?More than one output specification

Try again with one output specification.

%No file-oriented device corresponding to [device-name] is mounted

You specified a device, but left off the unit number. FLPWIN tried to find a logical device that matched the device code you specified, but failed to do so. Check your syntax, or try mounting the device.

%Not copied - Destination file already exists

You tried to copy to an existing file while the /NOD option was in effect. Either specify /D, or move, rename or erase the file now on the disk.

?You are not logged in under [1,2]; can't create [p,pn]

Either log into [1,2] and try again, or change your output specification to an existing account.

FMSFLP

FUNCTION

Formats diskettes using the AM-212-20 SCSI diskette drive, initializes diskettes, or rewrites the hidden sector.

CHARACTERISTICS

FMSFLP is re-entrant and re-usable.

To run FMSFLP you must be logged into the System Operator’s Account.

To run FMSFLP, your computer must support the AM-212-20 floppy disk drive. You must have a SCSI dispatcher installed, and have an AM-212-20 diskette drive attached to the SCSI bus contained in your computer.

FMSFLP supports narrow and wide SCSI interfaces.The AM-SCSI and traditional AMOS format is supported, but PC formats are not supported and must be pre-formatted on a PC.

FORMAT

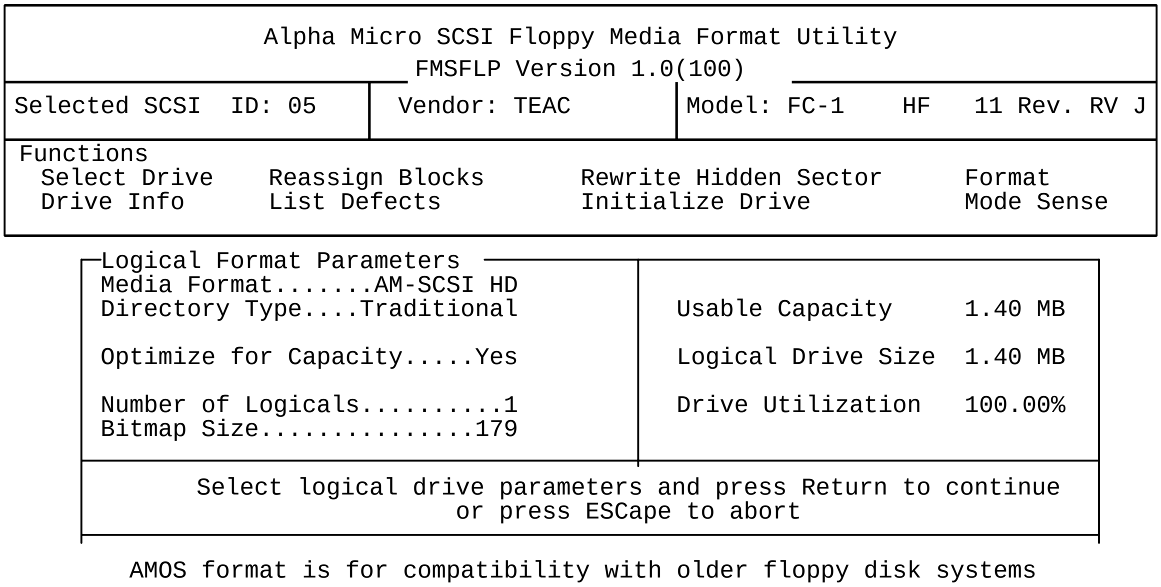
```
FMSFLP RETURN
```

If you use the format or initialize option, FMSFLP destroys all data on all logical devices on the diskette!

OPERATION

FMSFLP runs in interactive mode.

FMSFLP displays a list of the removable media SCSI drives on your computer. Select the drive you want to use and press RETURN. The FMSFLP menu then displays, as shown:



```
                Alpha Micro SCSI Floppy Media Format Utility
                          FMSFLP Version 1.0(100)
Selected SCSI  ID: 05 | Vendor: TEAC       | Model: FC-1    HF   11 Rev. RV J
Functions
  Select Drive    Reassign Blocks      Rewrite Hidden Sector     Format
  Drive Info      List Defects         Initialize Drive          Mode Sense

      Logical Format Parameters
      Media Format.......AM-SCSI HD
      Directory Type....Traditional          Usable Capacity     1.40 MB

      Optimize for Capacity.....Yes          Logical Drive Size  1.40 MB

      Number of Logicals..........1          Drive Utilization   100.00%
      Bitmap Size...............179

              Select logical drive parameters and press Return to continue
                                or press ESCape to abort

         AMOS format is for compatibility with older floppy disk systems
```

To navigate the menus use ←, →, ↑, and ↓. To invoke a highlighted function press RETURN. To abort menu functions and return to the AMOS prompt press ESC or CTRL/C. To return to menu functions from submenus press ESC.

You can do any of the following:

Select Drive

Selects drive to use in the operations listed below.

Reassign Blocks

The AM-212-20 does not support this function.

Rewrite Hidden Sector

Re-initializes the media’s hidden sector. If the hidden sector becomes corrupted, you may use this command to restore it without destroying any user data (assuming the hidden sector is initialized as it was before it became corrupted).

Whenever the hidden sector is written, the diagnostic cylinder is also re-initialized. This is necessary since the diagnostic cylinder always begins right after the last logical drive defined on the media.

This is ignored for AMOS compatible diskettes, which do not have a hidden sector.

Format

Formats and initializes the media in the selected drive. You can select the media format, directory type, and either set the bitmap size and number of logicals or have FMSFLP optimize the logical configuration. Here are the settings for some common configurations:

- **For traditional directories using the entire drive with the largest possible bitmaps:** set Directory Type to Traditional and Optimize to Yes. FMSFLP calculates both bitmap size and number of logical devices.
- **For extended directories using the entire drive:** set Directory Type to Extended and Optimize to Yes. Enter the number of logical devices you want. FMSFLP calculates the best bitmap size.
- For any other removable media configuration, you can set Optimize to No and enter the Directory Type, Bitmap Size, and Number of Logicals you want.

The number of logicals must be one (1) for AMOS format media. Although AM-SCSI format media will support multiple logical devices, one (1) logical is recommended for these diskettes.

The type of media in the drive is not detected prior to formatting, so the configuration defaults to high density AM-SCSI.

After choosing a configuration, press RETURN to continue.

If you decide you don’t want to format the drive, select Cancel and press RETURN. Otherwise, the drive begins formatting when you make your selection.

Drive Info

Displays the following information about the currently selected media if available.:

- Usable capacity.
- Block size.
- Format status.
- Formatted capacity: amount of space being used for logical drives.
- Number of logicals.
- Size of each logical drive.
- Bitmap size.
- Cylinders, heads, and sectors per track. These are calculated values; they don’t reflect the physical structure of the drive.

AMOS formatted media does not have the information available to display the logical information.

List Defects

The AM-212-20 floppy diskette drive does not support this feature.

Initialize Media

Same as the format option described above, except that it doesn’t format the media before writing the logical drive information.

If the diskette’s formatting is OK, use this option instead of format. This will save you time.

If you initialize a diskette using a density that differs from its formatted density, the diskette will be unusable.

Mode Sense

Retrieves mode sense information from the drive. You can view these values:

- **Current Values:** control the current operation of the drive.
- **Changeable Values:** indicate which bytes/bits are changeable.
- **Saved Values:** control the current operation of the drive, unless they are changed by a Mode Selected command.
- **Default Values:** used by the drive if current values have not been set or the drive is unable to access its saved values.

The information you requested is displayed within a scrollable window. Use ↑ and ↓ to view the information. Press ESC when you are done.

ERROR MESSAGES

?Logical format exceeds usable drive capacity!

You specified a logical drive count and bitmap size that exceeds the capacity of the drive. Specify a smaller number of logical drives and/or bitmap size.

?Program requires AMOS/32 execution!

FMSFLP requires an MC68020 or later processor. It will not run on a computer with an MC68000 or MC68010 processor.

?You must install a SCSI dispatcher to use FMSFLP on the system!

You are trying to run FMSFLP on a system that has a SCSI interface but does not have a dispatcher installed.

?Device error id 5 - sense key: 03 (media error) additional sense: 12h 00h!

Ignore this error message.

FMTDVD

FUNCTION

Formats DVD media using the AM-403 DVD-RAM drive for use by AMOS. Displays the drive status, initializes a drive, or rewrites the hidden sector.

CHARACTERISTICS

To run FMTDVD you must be logged into the System Operator’s Account.

To run FMTDVD, your computer must support the AM-403 DVD-RAM drive. You must have a SCSI dispatcher installed and have an AM-403 DVD-RAM drive attached to the SCSI bus.

FMTDVD supports narrow and wide SCSI interfaces.

FORMAT

```
FMTDVD  RETURN
```

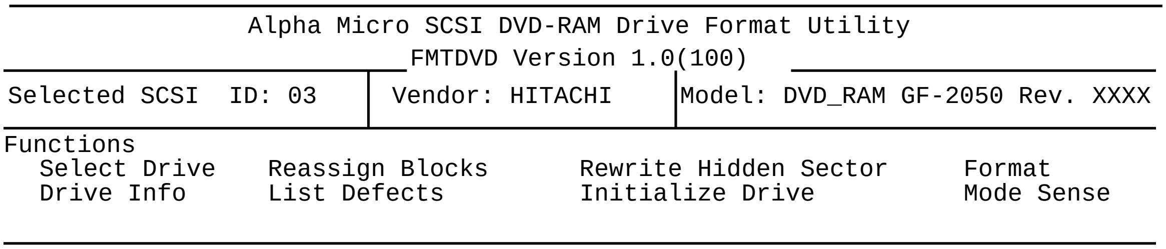
If you use the format or initialize option, FMTDVD destroys all data on all logical devices on the DVD media.

OPERATION

FMTDVD runs in interactive mode.

Interactive Mode

FMTDVD displays a list of the SCSI CD/DVD drives on your computer. Select the drive you want to affect and press RETURN. The FMTDVD menu then displays, as shown on the next page:



```
              Alpha Micro SCSI DVD-RAM Drive Format Utility
                         FMTDVD Version 1.0(100)
Selected SCSI  ID: 03 | Vendor: HITACHI    |Model: DVD_RAM GF-2050 Rev. XXXX
Functions
   Select Drive    Reassign Blocks      Rewrite Hidden Sector     Format
   Drive Info      List Defects         Initialize Drive          Mode Sense
```

To navigate the menus use ←, →, ↑, and ↓. To invoke a highlighted function press RETURN. To abort menu functions and return to the AMOS prompt press ESC or CTRL/C. To return to menu functions from submenus press ESC.

You can do any of the following in interactive mode:

Select Drive

Selects drive to use in the operations listed below.

Reassign Blocks

The AM-403 does not support this function.

Rewrite Hidden Sector

Re-initializes the drive’s hidden sector. If the hidden sector becomes corrupted, you may use this command to restore it without destroying any user data (assuming the hidden sector is initialized as it was before it became corrupted).

Whenever the hidden sector is written, the diagnostic cylinder is also re-initialized. This is necessary since the diagnostic cylinder always begins right after the last logical drive defined on the device.

Format

Unless you are tryingto correct a media problem, you should always use ***Initialize Drive*** instead of ***Format***.

Formats and initializes the selected drive. You can select the directory type, and either set the bitmap size and number of logicals or have FMTDVD optimize the logical configuration. Here are the settings for some common configurations:

- **For traditional directories using the entire drive with the largest possible bitmaps:** set Directory Type to Traditional and Optimize to Yes. FMTDVD calculates both bitmap size and number of logical devices.
- **For extended directories using the entire drive:** set Directory Type to Extended and Optimize to Yes. Enter the number of logical devices you want. FMTDVD calculates the best bitmap size.

- For any other drive configuration, you can set Optimize to No and enter the Directory Type, Bitmap Size, and Number of Logicals you want.

To figure the best traditional bitmap size for a given number of logical devices, set Directory type to Extended and Optimize to Yes. Enter the number of logical devices you want; FMTDVD calculates the bitmap size. Then, first turn off optimization and then change Directory Type to Traditional.

After choosing a configuration, press RETURN to continue. Then, to begin formatting the drive, select *Vendor Default Format*.

If you decide you don't want to format the drive, select Cancel and press RETURN. Otherwise, the drive begins formatting when you make your selection.

Drive Info

Displays the following information about the currently selected drive:

- Usable capacity.
- Block size.
- Format status.
- Formatted capacity: amount of space being used for logical drives.
- Number of logicals.
- Size of each logical drive.
- Bitmap size.
- Cylinders, heads, and sectors per track. These are calculated values; they don't reflect the physical structure of the drive.

List Defects

The AM-403 does not support this feature.

Initialize Drive

Same as the format option described above, except that it doesn't format the drive before writing the logical drive information.

If the drive's formatting is OK, use this option instead of format. This will save you time.

Mode Sense

Retrieves mode sense information from the drive. You can view these values:

- **Current Values:** control the current operation of the drive.
- **Changeable Values:** indicate which bytes/bits are changeable.
- **Saved Values:** control the current operation of the drive, unless they are changed by a Mode Selected command.
- **Default Values:** used by the drive if current values have not been set or the drive is unable to access its saved values.

The information you requested is displayed within a scrollable window. Use ↑ and ↓ to view the information. Press ESC when you are done.

ERROR MESSAGES

?Can’t specify bitmap size with optimization enabled!

Don’t specify a bitmap size, or turn optimization OFF.

?Logical format exceeds usable drive capacity!

You specified a logical drive count and bitmap size that exceeds the capacity of the drive. Specify a smaller number of logical drives and/or bitmap size.

?Logical format MUST be completely specified!

When optimization is disabled you must specify both the number of logical drives to create and the bitmap size.

?Program requires AMOS/32 execution!

FMTDVD requires an MC68020 or later processor. It will not run on a computer with an MC68000 or MC68010 processor.

?You must install a SCSI dispatcher to use FMTDVD on the system!

You are trying to run FMTDVD on a system that has a SCSI interface but does not have a dispatcher installed.

FMTFLP

FUNCTION

Formats diskettes used in floppy disk devices that run under the control of the AM-212 or AM-214 Floppy Disk Controller boards. Not used in Alpha Micro series prior to the AM-1500.

CHARACTERISTICS

FMTFLP is re-entrant and re-usable. The AM-212 and AM-214 Floppy Disk Controllers handle devices using single- or double-density and single- or double-sided diskettes.

When you run FMTFLP, your job MUST be the only job running on your system. You must be in the System Operator's Account (DSK0:[1,2]) to run FMTFLP. You cannot use FMTFLP over a network.

FMTFLP selects the format to use based on the device specification you provide. For example, if you have configured a floppy disk driver named DDA.DVR for a 3.5" drive using double-sided, double-density AMOS format, the device specification DDA0: tells FMTFLP to use AMOS format to format the diskette in drive zero of that device. For information on configuring floppy disk drivers, see your *System Operator's Guide.*

As it formats, FMTFLP writes over any data currently on the diskette. FMTFLP disables buffered writes if the diskette was mounted with /B (see MOUNT).

If the device is not mounted, FMTFLP mounts it, but without buffered writes enabled. After formatting the diskette, you may want to remount it to enable buffered writes.

After formatting a diskette, use the SYSACT I command to initialize it (unless you are going to use DSKCPY to make a literal image of another diskette on the newly formatted one).

FORMAT

```
FMTFLP devn: {/D}
```

devn: specifies the device holding the diskette you want to format. ***/D*** is an option which causes FMTFLP to display diagnostic information as it formats the diskette.

OPERATION

Enter FMTFLP and the device that holds the diskette you want to format. For example:

```
FMTFLP DDA1: RETURN
```

This tells FMTFLP to format the diskette in drive one of the floppy device using the DDA driver program.

MESSAGES

?[Cannot format diskette - write protected]

Remove the write-protection tab from the diskette and try again.

?Device does not exist

The device you specified is not defined. Check your spelling, or use DEVTBL to see a list of currently defined devices.

%Device being mounted without buffered writes. You may
%want to remount the device after formatting

The device you are formatting was not mounted, so FMTFLP mounted it for you. To use buffered writes after formatting, you must remount the device. See the MOUNT reference sheet.

[Error code x on track n]

A media, drive, or controller error occurred at track n of the diskette. For information on the error codes, see the hardware documentation that came with your disk device.

?Invalid device

The device you specified is not a floppy disk device, or is not compatible with the AM-212 or AM-214 Floppy Disk Controller board.

[No interrupt received after WRITE TRACK]

May indicate there is no diskette in the drive, or the door of the drive is not completely closed. If these are not the case, it indicates either a bad drive or a bad controller board. See your Alpha Micro representative for help.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

?Sector not found - MIN0:block0

This message is displayed when mounting an unformatted diskette— if this is the case, it may be ignored. If it occurs at any other time, it indicates a problem with the diskette— see your System Operator.

?Unit number for 5 1/4 inch floppies must be 0 or 1

Try again, specifying 0 or 1.

?Unit number must be 0-3

Re-enter, specifying a unit number of 0, 1, 2, or 3.

FMTSCZ

FUNCTION

Formats SCSI (Small Computer Systems Interface) disk drives, displays the drive status, lists defects for the drive, re-assigns defective blocks, initializes a drive, or reformats the hidden sector.

✋ As of March 1997, FMTSCZ has been superseded by FMTS2 for all 68020 and later systems. Use FMTSCZ only on computers which do not support FMTS2.

CHARACTERISTICS

FMTSCZ is re-entrant and re-usable. You must be logged into the System Operator's Account, DSK0:[1,2], to run FMTSCZ.

✋ **If you use the format option, FMTSCZ destroys all data on all logical devices on the specified physical disk!** Be sure you have a complete backup of the entire physical disk before proceeding. You can only run FMTSCZ on SCSI drives connected to the SASI/SCSI port. It does not use the SCZDVR.DVR driver program, nor does it require the drive to be set up in the system initialization command file.

SCSI drives do not have a BADBLK.SYS[1,2] file; all disk defects are handled automatically by the drive. However, you may use BADBLK to add new defects. See the BADBLK reference sheet for details.

FMTSCZ sets up account [1,2] on each logical device when it is done formatting. You must then re-install your files from your backup.

OPERATION

Log into DSK0:[1,2], and type FMTSCZ:

```
LOG OPR: RETURN
FMTSCZ RETURN
```

FMTSCZ displays the drive status for all drives on the SCSI bus. You are asked to press RETURN to continue, and when you do, you see the FMTSCZ menu, shown on the next page:

```
1. Drive status
2. List defects
3. Reassign defective blocks
4. Format drives
5. Initialize drive
6. Rewrite hidden sector
7. Display drive table
8. Exit to AMOS

Enter choice:
```

You may type ? at the main menu to see a HELP display. For more detailed instructions on using FMTSCZ, see *Installation Instructions, SCSI Disk Drives*, PDI-00436-21.

MESSAGES

%Could not list defects. Possible incompatibility. Press RETURN:

See your System Operator or contact your Alpha Micro representative for help.

Defect is in the wrong format. Re-enter.

The defect you entered is not in the proper format for the drive on your system. Re-enter a valid number.

Drive would not select

Make sure the drive is working and properly defined. See your System Operator for help.

Error on drive #n: sense key=n sense code=n

See your *System Operator's Guide* for a list of the error codes.

%Incompatible format of defect file.

The file you entered contained the wrong type of defect data. Use VUE to check your file. Option #3 will show you how the format should appear.

%Insufficient memory to run FMTSCZ.LIT

FMTSCZ could not allocate enough memory to execute. Try deleting unnecessary memory modules, or see about increasing memory.

Number of logicals is zero.

Try again, and enter a valid number of logical devices.

There are no drives available. Use the SELECT DRIVES option or abort.

Select option #1 or #5.

Warning. Drive displayed is the system disk.

This message reminds you the selected drive is your system disk. Be certain you have both a complete backup media and a bootable backup media.

FMTS2

FUNCTION

Formats SCSI (Small Computer Systems Interface) disk drives, displays the drive status, lists drive's defects, reassigns defective blocks, initializes a drive, or rewrites the hidden sector.

CHARACTERISTICS

FMTS2 is re-entrant and re-usable.

To run FMTS2 you must be logged into the System Operator's Account.

To run FMTS2, your computer must use an MC68020 or later processor. To use it with a SCSI interface, you must have a SCSI dispatcher installed.

Since FMTS2 lets you change the logical drive configuration, you can use any drive of equal or greater capacity as a replacement for a failed drive. FMTS2 also lets you create maximum size (32 MB) traditional logical drives.

The maximum size of a logical device is 4.2GB, which has a bitmap size of 524,288 words. FMTS2 will not let you create a logical device larger than this.

.CMD or .DO files can control the format process through the command line interface. FMTS2 sets JOBERR if it detects an error in the command line or a failed drive operation.

FMTS2 supports narrow and wide SCSI interfaces. It supports both SCSI and SASI interfaces when both are present, and lets you specify the one you prefer.

FORMAT

```
FMTS2 {/ID=number}{/switch(es)} RETURN
```

number is the SCSI ID of the drive you are interested in, and ***switch(es)*** is one or more option requests.

If you use the format or initialize option, FMTS2 destroys all data on all logical devices on the specified physical disk! Be sure you have a complete backup of the entire physical disk before proceeding.

OPTIONS

Options may be abbreviated only as shown in parentheses.

/BITMAP (/B) = number	Specifies bitmap size of a logical drive.
/EXTENDED (/E)	Creates extended format logicals.
/FORMAT (/F)	Formats and initializes.
/INFORMATION (/INFO)	Displays device information (default).
/INITIALIZE (/INIT)	Initializes only.
/LOGICALS (/L) = number	Specifies number of logical drives to create.
/NO OPTIMIZE (/NOPT)	Disables logical format optimization. Must also use /B and /L switches.
/OPTIMIZE (/O)	Optimizes logical format for drive capacity (default).
/REWRITE-HSZ (/RHSZ)	Rewrites just the hidden sector.
/SASI	The drive to format is on SASI bus.
/SCSI	The drive to format is on SCSI bus (default).

OPERATION

FMTS2 runs in command line or interactive mode.

Three features—Reassign Blocks, List Defects, and Mode Sense—are available only in interactive mode.

Command Line Mode

To use FMTS2 in command line mode, you include the SCSI ID and options you want on the command line. For example:

```
FMTS2 /ID=6 /SCSI /F /E RETURN
```

This command formats the disk at SCSI ID 6, and creates extended logicals.

Interactive Mode

To run FMTS2 in interactive mode, don’t include any parameters or switches on the command line.

If FMTS2 detects both SASI and SCSI interfaces on the system, a dialog box asks you to select the interface you want.

FMTS2 displays a list of the SCSI drives on your computer. Select the drive you want to affect and press RETURN. The FMTS2 menu then displays, as shown on the next page:

```
                 Alpha Micro SCSI Drive Format Utility
                        FMTS2 Version 1.0(101)
 Selected SCSI  ID: 00 | Vendor: QUANTUM  | Model: FIREBALL540S  Rev. 1Q09

Functions
  Select Drive   Reassign Blocks     Rewrite Hidden Sector    Format
  Drive Info     List Defects        Initialize Drive         Mode Sense
```

To navigate the menus use ←, →, ↑, and ↓. To invoke a highlighted function press RETURN. To abort menu functions and return to the AMOS prompt press ESC or CTRL/C. To return to menu functions from submenus press ESC.

You can do any of the following in interactive mode:

Select Drive

Selects drive to use in the operations listed below.

Reassign Blocks

Allows you to add one or more blocks to the drive’s grown defect list. Enter the number of the physical block to reassign (in hex or octal depending on the job’s current radix setting).

Rewrite Hidden Sector

Re-initializes the drive’s hidden sector. If the hidden sector becomes corrupted, you may use this command to restore it without destroying any user data (assuming the hidden sector is initialized as it was before it became corrupted).

Whenever the hidden sector is written, the diagnostic cylinder is also re-initialized. This is necessary since the diagnostic cylinder always begins right after the last logical drive defined on the device.

Format

Unless you are tryingto correct a media problem, you should always use ***Initialize Drive*** instead of ***Format***.

Formats and initializes the selected drive. You can select the directory type, and either set the bitmap size and number of logicals or have FMTS2 optimize the logical configuration. Here are the settings for some common configurations:

- **For traditional directories using the entire drive with the largest possible bitmaps:** set Directory Type to Traditional and Optimize to Yes. FMTS2 calculates both bitmap size and number of logical devices.
- **For extended directories using the entire drive:** set Directory Type to Extended and Optimize to Yes. Enter the number of logical devices you want. FMTS2 calculates the best bitmap size.

- **For absolute maximum 32MB traditional logicals:** set Directory Type to Traditional and Optimize to No. Enter 4096 for the bitmap size. Adjust the number of logicals until adding one more will put drive utilization over 100% (FMTS2 recalculates the percentage each time you leave the Number of Logicals field).
- For any other drive configuration, you can set Optimize to No and enter the Directory Type, Bitmap Size, and Number of Logicals you want.

To figure the best traditional bitmap size for a given number of logical devices, set Directory type to Extended and Optimize to Yes. Enter the number of logical devices you want; FMTS2 calculates the bitmap size. Then, first turn off optimization and then change Directory Type to Traditional.

After choosing a configuration, press RETURN to continue. Then, to begin formatting the drive, select which drive defect list to use:

- **Format Without Grown Defects:** reassigns only the bad blocks included in the manufacturer’s defect list. It does not reassign any blocks marked as bad since the drive was installed.

  Use this option only if you have reason to believe blocks have been added to the defect list in error—for example, if a bad cable had caused blocks to appear defective. Some drives reassign bad blocks automatically. If you use this option, those blocks are no longer marked as bad.

- **Format With Grown Defects:** reassigns all blocks currently marked as bad. Use this option in most circumstances.
- **Vendor Default Format:** use this option only if you cannot format the drive using either of the above options. It uses vendor default parameters to format the drive.

If you decide you don’t want to format the drive, select Cancel and press RETURN. Otherwise, the drive begins formatting when you make your selection.

Drive Info

Displays the following information about the currently selected drive:

- Usable capacity.
- Block size.
- Format status.
- Formatted capacity: amount of space being used for logical drives.
- Number of logicals.
- Size of each logical drive.
- Bitmap size.
- Cylinders, heads, and sectors per track. These are calculated values; they don’t reflect the physical structure of the drive.

List Defects

Displays one or both defect lists maintained by the drive. You can display the primary defect list, grown defect list, or both. The drive displays the list in one of these three formats:

- **Cyl. Hd. Sector:** defect location specified by cylinder, head, and sector.
- **Cyl. Hd. Offset:** defect location specified by cylinder, head, and the number of bytes from the beginning of the track.
- **Block #:** defect location specified by 32-bit decimal block number.

You may scroll the list output by using ↑ and ↓. To return to the above defect list options, press ESC. Because of the different implementations, this information cannot be compared to AMOS block numbers.

Initialize Drive

Same as the format option described above, except that it doesn't format the drive before writing the logical drive information.

If the drive's formatting is OK, use this option instead of format. This will save you time.

Mode Sense

Retrieves mode sense information from the drive. You can view these values:

- **Current Values:** control the current operation of the drive.
- **Changeable Values:** indicate which bytes/bits are changeable.
- **Saved Values:** control the current operation of the drive, unless they are changed by a Mode Selected command.
- **Default Values:** used by the drive if current values have not been set or the drive is unable to access its saved values.

The information you requested is displayed within a scrollable window. Use ↑ and ↓ to view the information. Press ESC when you are done.

ERROR MESSAGES

?Can't specify bitmap size with optimization enabled!

Don't specify a bitmap size, or turn optimization OFF.

?Can’t specify logical count or size while optimized traditional logical format is selected!

You must turn optimization OFF to be able to specify the number of traditional logicals to create and the bitmap size.

?Logical count incorrectly specified!

You used the /LOGICALS switch but did not specify a logical drive count, or specified a drive count of zero or greater than 999.

?Logical format exceeds usable drive capacity!

You specified a logical drive count and bitmap size that exceeds the capacity of the drive. Specify a smaller number of logical drives and/or bitmap size.

?Logical format MUST be completely specified!

When optimization is disabled you must specify both the number of logical drives to create and the bitmap size.

?Program requires AMOS/32 execution!

FMTS2 requires an MC68020 or later processor. It will not run on a computer with an MC68000 or MC68010 processor.

?SASI interface not available on this system!

You used the /SASI switch on a system that does not have a SASI interface.

?SCSI ID of drive to operate on MUST be specified!

You must tell FMTS2 which SCSI drive to format.

?SCSI interface not available on this system!

You used the /SCSI switch on a system that does not have a SCSI interface.

?Specified drive does not exist!

There is no disk drive at the specified SCSI ID on the selected interface bus.

?You must install a SCSI dispatcher to use FMTS2 on the system!

You are trying to run FMTS2 on a system that has a SCSI interface but does not have a dispatcher installed.

FMT210

FUNCTION

Formats diskettes used in floppy disk devices under the control of the AM-210 Floppy Disk Controller board and the AM-1000 and AM-1200 5-1/4" Mini-floppy Disk Controller.

CHARACTERISTICS

FMT210 is re-entrant and re-usable. The AM-210 Floppy Disk Controller handles devices that use double- or single-density diskettes and single- or double-sided diskettes.

When you run FMT210, your job MUST be the only job running on your system. You must be in the System Operator's Account (DSK0:[1,2]) to run FMT210. The AM-210 controller does not support single-density AMS format for 8 inch floppies.

FMT210 runs only under the AMOS/L version of the operating system.

FMT210 selects the specific format to use based on the device specification you provide. For example, if you have previously configured a floppy disk driver named DDS.DVR for a Qume device that uses double-sided, double-density STD format, the device specification of DDS0: tells FMT210 to use STD format to format the diskette in Drive Zero of that device. For information on configuring floppy disk drivers, see your *System Operator's Guide.*

As it formats, FMT210 writes over any data currently on the diskette. FMT210 requires you to mount a diskette before formatting it. After formatting a diskette, use the SYSACT I command to initialize it (unless you are going to use DSKCPY to make a literal image of another diskette on the newly formatted one).

FORMAT

```
FMT210 devn:
```

devn: specifies the device holding the diskette you want to format.

OPERATION

Enter FMT210 followed by the specification of the device holding the diskette you want to format. For example:

```
FMT210 DDA1: RETURN
```

This tells FMT210 to format the diskette in Drive One of the floppy device using the DDA driver program (and therefore, to use the AMS format).

MESSAGES

?[Cannot format diskette - write protected]

Remove the write-protection tab from the diskette and try again.

?Device does not exist

The device you specified is not defined. Check your spelling, or use DEVTBL to see a list of currently defined devices.

?Disk not mounted

Mount the diskette and try again.

[Error code x on track n]

A media, drive, or controller error occurred at track n of the diskette. For information on the error codes, see your disk device hardware documentation.

?Invalid device

The device you specified is not a floppy disk device, or is not compatible with the AM-210 Floppy Disk Controller board. Check your spelling, or use DEVTBL to see the devices on your system.

[No interrupt received after WRITE TRACK]

Indicates either a bad drive or a bad controller board. See your Alpha Micro representative.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

Program not supported

You can only run FMT210 under the AMOS/L version of the operating system.

?Sector not found - MIN0:block0

This message is displayed when mounting an unformatted diskette—if this is the case, it may be ignored. If it occurs at any other time, it indicates a problem with the diskette—see your System Operator.

?Unit number for 5 1/4 inch floppies must be 0 or 1

Try again, specifying 0 or 1 for the unit number.

?Unit number must be 0-3

Re-enter, specifying a unit number of 0, 1, 2, or 3.

FMT219

FUNCTION

Formats diskettes used in diskette drives that run under the control of the AM-219 diskette drive controller.

CHARACTERISTICS

FMT219 is re-entrant and re-usable.

When you run FMT219, your job MUST be the only job running on your system. You must be in the System Operator's Account (DSK0:[1,2]) to run FMT219.

FMT219 selects the format to use based on the device specification you provide. For example, if you have configured a floppy disk driver named PCF.DVR for a 3.5" drive using double-sided, double-density PC format, the device specification PCF0: tells FMT219 to use PC format to format the diskette in drive zero of that device. For information on configuring floppy disk drivers, see your *System Operator's Guide.*

As it formats, FMT219 writes over any data currently on the diskette. FMT219 disables buffered writes if the diskette was mounted with /B (see MOUNT).

If the device is not mounted, FMT219 mounts it, but without buffered writes enabled. After formatting the diskette, you may want to remount it to enable buffered writes.

After formatting a diskette, use the SYSACT I command to initialize it (unless you are going to use DSKCPY to make a literal image of another diskette on the newly formatted one).

FORMAT

```
FMT219 devn:
```

devn: specifies the device holding the diskette you want to format.

OPERATION

Enter FMT219 and the device that holds the diskette you want to format. For example:

```
FMT219 MIN1: RETURN
```

This tells FMT219 to format the diskette in drive one of the floppy device using the MIN driver program.

MESSAGES

?Cannot format diskette - [AMOS error message]

The diskette could not be formatted for the reason given. Try to correct the situation or see your System Operator for help.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

?Sector not found - MIN0:block0

This message is displayed when mounting an unformatted diskette—if this is the case, it may be ignored. If it occurs at any other time, it indicates a problem with the diskette—see your System Operator.

?This program is for use with AM-219 drivers only

You have attempted to format a diskette using a device driver that was not created for the AM-219 controller. You can use FMT219 only with the AM-219 controller and drivers created for it using FIX219.

?Unit number for 5 1/4 inch floppies must be 0 or 1

Try again, specifying 0 or 1.

?Unit number must be 0-3

Re-enter, specifying a unit number of 0, 1, 2, or 3.

FORCE

FUNCTION

Allows you to force terminal input to another job.

CHARACTERISTICS

FORCE is re-entrant and re-usable. FORCE has two modes; single-line and multi-line. Be careful when using FORCE to make sure the job you are forcing input to has enough memory allocated to it to handle the task you are giving it.

You can't force input to a job not attached to a terminal, but you can use FORCE to force input to a job attached to a pseudo-terminal (for example, to bring up the printer spooler under control of a pseudo-terminal).

You may not use FORCE to force input to a guarded job unless you are logged into the System Operator's account, [1,2]. For information on "guarding" a terminal, see the SET reference sheet.

FORMAT

```
FORCE jobname commands/data
```

or:

```
FORCE jobname
commands/data
commands/data
[blank line]
```

commands/data are any valid AMOS commands or data you can enter from the keyboard.

OPERATION

Enter FORCE followed by the name of the job you wish to force input to. Then enter the commands/data you want to force. For example:

```
FORCE JOB2 RUN INVEN RETURN
```

Here's an example of a multi-line FORCE:

```
FORCE JOB3 RETURN
LOG DSK0:110,5 RETURN
TXTFMT HEADER RETURN
RETURN
```

MESSAGES

?Guarded

The job you tried to force is guarded. Log into OPR: if you want to try again.

?Job busy

The targeted job is not ready to receive further commands (it is not in Ti state). Try again later.

?No terminal attached to job

You need to use the ATTACH command to assign a terminal to the job you want to force input to. You can assign a pseudo-terminal if you do not need to see any output from that job. However, you cannot force to a pseudo-terminal that uses a NULL terminal driver.

?Nonexistent job

FORCE doesn't recognize the name of the job you are trying to force to. Check your syntax or use TRMDEF to see what jobs are on your system.

FREE

FUNCTION

Displays the number of free blocks on the disk, and the number of blocks in the largest free contiguous space.

CHARACTERISTICS

FREE is re-entrant and re-usable.

FORMAT

```
FREE devn:
```

devn: is the disk you want information about.

OPERATION

Enter FREE and the specification of the disk you want information about. For example:

```
FREE DSK2: RETURN
9414 free blocks
9410 blocks in largest free contiguous space
```

MESSAGES

?File specification error

Check your syntax, or use the DEVTBL command to see what devices are defined on your system, and try again.

FWUPD

FUNCTION

Switches the firmware in the flash ROM of the AM-627 tape drive between SCSI-1 and SCSI-2 versions. You should use SCSI-2 with the AM-190 board for maximum performance.

CHARACTERISTICS

FWUPD works only from the system operator account (DSK0:[1,2]. Once you use FWUPD to update the AM-627 to SCSI-2, it is not compatible with CPU boards earlier than the AM-190. To use the tape drive with an earlier CPU, you must convert the firmware back to SCSI-1.

FORMAT

```
FWUPD DVR:file
```

file is TSCZ2 to update to SCSI-2 firmware or TSCZ1 to convert back to SCSI-1 firmware.

OPERATION

To update an AM-627 to SCSI-2, enter the following commands:

```
LOG OPR: RETURN
FWUPD DVR:TSCZ2 RETURN
```

FWUPD asks you for the name of the device. Type:

```
Enter target device (e.g. STR0:): STR0: RETURN
```

FWUPD then updates the firmware; this takes about a minute. After the AMOS prompt re-appears, you need to power the computer down and then up again for the new firmware to take effect.

If you need to return the AM-627 to SCSI-1 operation, follow the same procedure, but enter this command:

```
FWUPD DVR:TSCZ1 RETURN
```

MESSAGES

?Can't locate specified firmware file

Check to make sure you typed the firmware file name correctly and try again.

?FWUPD is for use with non-disk devices only

Check your device specification; you cannot use FWUPD on a disk device.

?Invalid device specification

The device you entered does not exist. Check your spelling and try again.

?Privileged program - must be logged into OPR:

You must be logged into the System Operator's account, DSK0:[1,2], to use FWUPD.

GETVER

FUNCTION

Extracts version data from AlphaBASIC, AlphaBASIC PLUS, AlphaC, and M68 program source files.

CHARACTERISTICS

GETVER is an OS/Exec program that may be used as an AMOS command. Multiple files may be processed using the "Get Source Version" function of OS/Exec. If the source file does not have a recognizable extension, the file is processed as if it were an M68 file.

FORMAT

```
GETVER filespec{/switches}
```

GETVER assumes an extension of M68.

OPTIONS

/L:n	Specifies the number of lines to search in the source file for the version information (default is 500).

OPERATION

Enter GETVER and by the specification of the file. For example:

```
GETVER TRANS.M68 RETURN
```

GETVER then displays the current version data from the source file. For example:

```
4.3(453)
```

MESSAGES

?Invalid switch -- ignored

Check your syntax and try again.

?Language not supported, assuming M68...

If the source file does not have a recognizable extension, the file is processed as if the file were an M68 file.

GLOBAL

FUNCTION

Produces an alphabetic cross-reference of all global symbols in one or more object (.OBJ) files. Also shows which files define which symbols, and which are externally defined symbols.

CHARACTERISTICS

GLOBAL is re-entrant and re-usable. The Alpha Micro macro-assembler, M68, allows you to segment assembly language programs. You can assemble these segments separately, and then link them together with LNKLIT, the linkage editor. Each segment is able to refer to symbols occurring in other segments, using INTERN and EXTERN statements.

M68 also allows you to overlay a portion of a program with a program from the disk; the OVRLAY statement does this. For each OVRLAY statement, an INTERN statement must exist in another segment which identifies the start of the overlay in that segment.

GLOBAL produces a listing file containing a cross-reference of all symbols that have been referenced in an INTERN, EXTERN, or OVRLAY statement, so you can see in which segments those references occur. For more information on INTERN, EXTERN, OVRLAY, and M68, see your *Assembly Language Programmer's Manual.*

GLOBAL produces the listing file in the account and device you are logged into. The list file has a .GLB extension and the name of the first segment specified on the GLOBAL command line.

FORMAT

```
GLOBAL{/switch} {filespec}{,filespec(s)}
```

switch is an option and the ***filespecs*** specify the .OBJ files.

DEFAULTS

The default file extension is .OBJ. The device and account defaults to where you are logged.

OPTIONS

GLOBAL switches may be abbreviated, and are operation switches.

/LONG:n Produces a list file up to n lines long. The default is 80.
/T Outputs in a slightly different format with more lines per page.
/WIDE:n Produces a list file up to ***n*** characters on a line. The default is 130.

OPERATION

Enter GLOBAL, any optional switches, and a list of the files you want. For example:

```
GLOBAL/W/L MAIN,SUB1,SUB2 RETURN
```

If you have more file specifications than will fit on one command line, end the line with a comma. GLOBAL prompts you with an asterisk, and you can enter the next line of file specifications. You may enter as many lines as you want, as long as all preceding lines end with a comma.

GLOBAL reads each file you specify and builds a table of global symbols in memory. Here is a portion of what a GLOBAL listing file might look like:

```
                        M  S  S
                        A  U  U
                        I  B  B
                        N  1  2
                        -  -  -
ALPHA                   I  E  .
BETA                    I  .  E
ZETA                    I  O  .
```

The listing file above tells us the symbol ALPHA appeared in an INTERN statement in the file MAIN and in an EXTERN statement in file SUB1, BETA appeared in an INTERN statement in MAIN and in an EXTERN statement in SUB2, and ZETA appeared in an INTERN statement in MAIN and in an OVRLAY statement in SUB1.

MESSAGES

?Fatal error - Incompatible object file version

One or more of the specified object files is in an old format incompatible with the current version of GLOBAL. The object file source should be re-assembled with the current version of the assembler.

?Undefined switch [switch] - ignored

If you made a typing mistake, re-run GLOBAL with the proper switch.

HASHER

FUNCTION

Generates a hash total for a specified disk.

CHARACTERISTICS

HASHER is re-entrant and re-usable. A hash total is a number computed based on the characteristics of a group of data; the hash total thus uniquely identifies that group of data. HASHER generates a hash total for a disk based on the contents of the disk. Therefore, two disks only have the same hash total if they contain identical data. **You must be logged into [1,2] to run HASHER.**

HASHER is especially useful when you are making multiple copies of a disk. You can use HASHER to generate the hash total of the source disk. Then, every time you use DSKCPY to make copies of that disk, you can tell DSKCPY to generate a hash total for the disk copied to. If the hash total for the source disk does not match the hash totals for the disks copied to, it means a problem occurred during the disk copy.

OPERATION

Enter HASHER at AMOS command level:

```
HASHER RETURN
```

HASHER prompts you to specify the device you want a hash total for. It then displays how many blocks are on the disk, and the hash total.

MESSAGES

?Disk size not defined in table

HASHER can't find the device. Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Driver not found

Check your syntax, or make sure the proper device driver is available. See your System Operator for help.

?Privileged program - must be logged into [1,2]

Log into [1,2] and try again.

HELP

FUNCTION

Displays text files on your terminal containing information about the system.

CHARACTERISTICS

HELP is re-entrant and re-usable. HELP looks first for the specified .HLP file in the System HELP File Library, DSK0:[7,1]; next it searches in your project library account ([your-proj#,0]), and if unsuccessful there, it looks in the device and account you are currently logged into.

If there are .HLP files on the same topic in different accounts, HELP uses the searching technique described above and displays the first one it finds. For example, if there is a .HLP file for DATE in DSK0:[7,1], your project library account, and the account you are logged into, you see the contents of the one in DSK0:[7,1]. If it exists only in your project library account and the account you are currently logged into, you see the one in your project library account.

HELP uses a function key translation file for your terminal if it finds one with the name *driver-name*.AMX in system or user memory, or in DSK0:[7,0].

FORMAT

```
HELP {topic}
```

If you do not specify a ***topic***, HELP displays the HELP.HLP file, which contains a list of help topics, or which may be modified to include whatever helpful information you wish.

You can insert TCRT codes for terminal attributes (-1,x) in a help file by entering an ESCAPE character followed by the decimal value of the code for the required attribute. See Chapter 7 of the *AMOS Monitor Calls Manual* for the values for each attribute. Terminate the codes with a non-numeric character or a trailing ESCAPE character.

A FORMFEED character in a help file displays `[Press any key to continue]` and pauses for keyboard input before clearing the screen and displaying the rest of the file.

You can also design help files that call other help files in response to user input. This allows you to have multi-level help files that cover broad areas of information and allowing users to see only the information pertinent to their needs. You do this by associating help file specifications with numbers. A left brace, {, begins the definitions, and a right brace, }, ends the definitions (the text of which is not displayed on the screen). For example:

```
{
1=TAX.HLP
2=FILE.HLP
3=INVEN.HLP
}
```

When the file above is accessed, you'll see only the help file text (without the definition part), and then you can press 1, 2, or 3 to see the appropriate help file. If you press CTRL/C or CANCEL, you return to AMOS command level. If you press MENU or ESC/ESC, you are returned to the last help file level.

OPERATION

Enter HELP followed by the name of a topic to see the text file associated with that topic. For example:

```
HELP VUE RETURN
```

Now the screen clears and you see information on the topic you have chosen.

MESSAGES

[Error while reading help file]

A disk (or other) error was encountered while reading the help file from disk. Contact your System Operator.

[Unable to locate help file]

There is no .HLP file for that topic.

ISMBLD

FUNCTION

Builds an ISAM index file/data file combination.

CHARACTERISTICS

ISMBLD is re-entrant and re-usable.

ISAM (Indexed Sequential Access Method) is a method for organizing and accessing data. An ISAM file is an index file/data file combination. The index file contains pointers to records in the data file. The ISAM.SYS program quickly finds data records by searching the index file instead of searching the data file itself.

Although you call ISAM functions from within your AlphaBASIC or assembly language programs, you may not run the program ISAM.SYS directly from AMOS command level.

ISMBLD can create a new ISAM file, it can add data to a new or existing file, and it can change the device specification of a data file. You can use ISAM functions from within AlphaBASIC programs or assembly language programs. For information on using ISAM, see your *ISAM System User's Guide.*

Two keyed sequential access methods may co-exist on your computer, the traditional ISAM and the newer ISAM Plus. ISAM Plus is a re-organized, easier-to-use version of ISAM, with more power and features. If you are using ISAM Plus, use the ISMUTL utility instead of ISMBLD. See the ISMUTL reference sheet.

FORMAT

```
ISMBLD filespec{/switch(s)}
```

filespec selects the name you want to assign to the .IDA (data) and .IDX (index) files, and a ***switch*** is an option request.

OPTIONS

/D	Change the data file device specification.
/N	Prevent ISMBLD from using Exclusive Open Mode.

For information on Exclusive Open Mode and Counted Update Mode, see your *ISAM System User's Guide.*

OPERATION:

Enter ISMBLD followed by the name you want to assign to the file. For example:

```
ISMBLD LABELS RETURN
```

To create an ISAM file in Counted Update Mode, use the /N switch. If the file you specify does not yet exist, ISMBLD asks you a series of questions; from the parameters you supply, ISMBLD generates a data file/primary index file combination. ISMBLD asks:

1. Size of key: - Enter the size of the desired key in bytes. When you later access the ISAM file you are now building, you must remember to pad with blanks or other characters keys smaller than this size.
2. Position of key: - Enter the location of the key within the data record. Enter the number of the first character-position in the record the key occupies.
3. Size of data record: - Specify in bytes the size of the records in the data file (or the maximum size in the case of variable length records).
4. Number of records to allocate: - Number of records which the data file is to contain.
5. Empty index blocks to allocate: - Enter the number of additional empty index blocks you want to allocate.
6. Primary Directory? - If you are creating a data file/primary index file combination, enter Y; otherwise, enter N.
7. Secondary index to file: - If you are creating a secondary index file instead of a data file/primary index file combination, ISMBLD prompts you for the specification of the primary index file to which this secondary index file cross-indexes. After you supply this information, ISMBLD returns you to AMOS command level.
8. Data File Device? - ISMBLD asks this question if you are creating a data file/primary index file combination. If the index file and data file are to be on the same device, just press RETURN—otherwise enter the specification of the device on which the data file is to reside.

Once ISMBLD has created a new data/primary index file combination, it enters file loading mode. It asks you which file you want to load data from. You may either press RETURN (to create an empty data file) or you may specify a sequential data file from which you want to load data. ISMBLD assumes a file extension of .SEQ for this data file. After loading the data file, ISMBLD returns you to AMOS command level.

If you are not creating a new data/index file combination (that is, if you specified a file to ISMBLD that already exists), ISMBLD goes directly into file loading mode. Instead of asking you the list of file parameter questions above, it tells you it is processing the existing file, and asks for the name of the file from which to load data. If you press RETURN, ISMBLD does not load from a file.

To change the data file device after an ISAM file has been created, use the /D switch on the ISMBLD command line. For example, if you want to change the device of the data file from DSK0: to DSK1:

```
ISMBLD MAIL/D RETURN

[Processing existing file]
Current device name is DSK0:
Enter new device name: DSK1: RETURN
```

MESSAGES

%Attempt to add duplicate key [key]

Make sure you have not tried to load a key twice from the same data file.

?Duplicate secondary key left out [key]

You tried to use ISMBLD on a secondary index file—the key listed is already in an index file.

?End of input file in middle of record

You loaded an ISAM file with data from a sequential data file, but the parameters you gave to ISMBLD when you originally created the file did not match the data in the data file (the record size in the data file is not the same as the size you specified to ISMBLD).

?Illegal device specification

Use DEVTBL to see a list of legal devices and try again.

?Invalid record size

Make sure all your records are less than 513 bytes.

?Invalid number

Check the proper range of numbers for the question and try again.

?ISBAFL Data file full

You did not specify enough records when you built the ISAM file. When you loaded the ISAM file, the data file was not large enough to hold all of the data.

?ISBXFL Index file full

You did not specify enough additional index blocks when you built the ISAM file. When you loaded the ISAM file with data, the index was not large enough to hold the necessary entries.

?Key must be within record

You entered an incorrect number for the record or key size. Check the size limits and try again.

?Key size causes entries per index block to be 2 or less.
Key size must be reduced.

Try again with a smaller key size.

ISMDMP

FUNCTION

ISMDMP writes the contents of an ISAM data file to a sequential file or displays the structure of an index file on your terminal.

CHARACTERISTICS

ISAM (Indexed Sequential Access Method) is a method of organizing and accessing data. An ISAM file is a data file/index file combination. The index file contains pointers to records in the data file. ISAM.SYS quickly finds data records by searching the index file instead of searching the data file itself.

Two keyed sequential access methods may co-exist on your computer, ISAM and the more powerful, easier-to-use ISAM Plus. If you are using ISAM Plus, use the ISMUTL utility instead of ISMDMP. See the ISMUTL reference sheet. ISMDMP may also be used to convert ISAM files to ISAM Plus format. See the conversion hints in your *ISAM Plus User's Guide*.

The purpose of ISMDMP in display mode is to aid in debugging programs that use ISAM. Much of the information in the display is of help only to the experienced systems programmer and some of the information is of use only to programmers working on the ISAM program itself. Dumping data to a sequential file can be useful for data backup.

Although you call ISAM functions from within your AlphaBASIC or assembly language programs, you may not run the ISAM.SYS program directly from AMOS command level. For more information on using ISAM and ISMDMP, see your *ISAM System User's Guide*.

FORMAT

```
ISMDMP filespec{/N}
```

filespec selects the ISAM data or index file you want to dump and ***/N*** selects the Counted Update Mode option.

DEFAULTS

The default extension of the ISAM file you want to dump is .IDX. The default extension of the file that will contain the data is .SEQ.

OPTIONS

/N Use Counted Update Mode instead of Exclusive Open Mode.

For information on Counted Update and Exclusive Open Mode, see your *ISAM System User's Guide.*

OPERATION

Enter ISMDMP followed by the specification of the ISAM file whose contents you want to see. For example:

```
ISMDMP ADDRSS RETURN
```

Now ISMDMP asks you for the file to output the data to. If you want to see the file on your terminal, type **`TTY:`** RETURN; otherwise, enter the name of the file you want the data in. ISMDMP displays the number of data records it wrote to the file.

You can now use the TYPE or PRINT commands to display the file, or AlphaVUE to examine the file. Your *ISAM System User's Guide* discusses the elements of the ISMDMP display in detail.

Several of the items of information in the upper portion of the display are parameters that you supply when you used ISMBLD to build the ISAM file (for example, Size of data record:, Size of key:, etc.). Some of the other important elements of this display are:

1. Size of dir entry: - Amount of storage needed to store key—key (rounded up to even) + 4.
2. Size of dir block: - 512 bytes.
3. Type of key: - Always zero.
4. Blocking factor: - This value gives the number of logical data records that fit into each physical disk block. This number gives the blocking factor for the data file, and is thus 512/record size.
5. IDA freelist pointer: - A longword pointer into the data file.
6. IDA freecount: - Number of records free in data file.
7. IDX freelist pointer: - Logical block number of next free block in index.
8. IDX freecount: - Number of free logical index blocks.
9. Records allocated: - Number of data records used.
10. Top dir blk pointer: - Block pointer to beginning of top index block.

The rest of the display contains debugging information about the structure of the index file. This information is mostly of use to the experienced programmer who understands the internal workings of ISAM.

MESSAGES

?Cannot rename [filespec] - file not found

Check your device and account specifications and your spelling, and try again.

No records dumped

You tried to dump data from an empty ISAM data file.

ISMUTL

FUNCTION

ISMUTL performs a variety of operations on an ISAM Plus file, including: creating the ISAM Plus file, loading records into it, reformatting, displaying, and adjusting it. ISMUTL may be used interactively, or may be accessed through your assembly language, AlphaBASIC, or AlphaC programs.

CHARACTERISTICS

ISAM (Indexed Sequential Access Method) is a method of organizing and accessing data. An ISAM Plus file is a data file/index file combination. The index file contains pointers to records in the data file. ISAM Plus quickly finds data records by searching the index file instead of searching the data file itself.

Two keyed sequential access methods may co-exist on your computer, ISAM and the newer ISAM Plus. If you are using ISAM, use the ISMDMP and ISMBLD utilities instead of ISMUTL.

Although you call ISAM Plus functions from within your AlphaBASIC, AlphaC or assembly language programs, you may not run the ISAMP.SYS program directly from AMOS command level. For more about using ISAM Plus, see your *ISAM Plus User's Guide.*

FORMAT

```
ISMUTL filespec
```

filespec selects the ISAM Plus index/data file combination you want to create, examine, or change.

DEFAULTS

The default extensions of the index/data ISAM Plus file combination are .IDX and .IDA. If you use ISMUTL to load or dump an ISAM Plus file, the default extension of the input/output file is .SEQ.

OPERATION

Enter ISMUTL and the specification of the ISAM Plus file you want to create, modify or examine. For example:

```
ISMUTL ADDRSS RETURN
```

If the file does not exist, ISMUTL begins to ask a series of questions concerning the number of data records and their size, as well as information on the position, type, and size of the keys the new index file will contain.

If the file does exist, ISMUTL displays a menu from which you can choose the operation you want to perform on the file. You may choose from the following:

LOAD	Load a file.
CHANGE	Change data device name.
ADD2ND	Add secondary key directory.
DELETE	Delete existing secondary key directory.
DUMP	Dump ISAM Plus file.
STAT	Display statistical information.
ADDIDX	Add index block.
DESCRP	Change key description.
REBUILD	Rebuild an index file.
EXIT	Exit to AMOS.

You may enter a ISMUTL command from the list above in any combination of upper or lower case. You may abbreviate if there is no conflict between command names.

MESSAGES

?Attempt to add duplicate key

Duplicate keys aren't allowed for this file.

?Cannot add record, not enough free index blocks

Use the ADDIDX utility to add extra index blocks or delete some records.

?Cannot change key

The ISAM Plus file was created in such a way that the keys in this file can't be modified.

?Cannot create existing ISAM Plus file

An ISAM Plus file by the same name already exists. This message only appears if you interface your assembly language program to ISMUTL.

?Cannot delete primary key

You may not delete a primary key for any reason.

?Data file full

You are trying to add more records than you allowed room for when you created the file.

?Data file smashed

This message appears if the .IDA free list chain is smashed. See your System Operator or Alpha Micro representative for help.

?Incompatible ISAM Plus file

Your file is in an older ISAM format—see your *ISAM Plus User's Guide* for help converting an old ISAM file to ISAM Plus format.

?Index file full

If this happens during the splitting of an index block, your index file may be destroyed. It's always a good idea to add extra empty index blocks when you create the file.

?Index structure is smashed

This message indicates serious structural damage to your index file. You may need to rebuild your ISAM Plus file.

?Invalid key type

Enter 1 for alphanumeric, 2 for unsigned binary, and 3 for concatenated key.

?Invalid record size

Enter a record size of between 4 and 65535 bytes.

?ISAMP.SYS not found

You must load ISAMP.SYS in MEM: or RES: prior to using ISMUTL's functions.

?Key outside record

The key is outside the record boundary. All keys must be within a record.

?Maximum binary type size = 8

Enter a key size of eight bytes or less.

?Maximum extra percentage = 900

You can request up to tenfold the number of index blocks allocated.

?Maximum key size = 161

Enter a key size of 161 or less.

?Maximum number of 2nd key directories = 64

This message appears when an assembly language program is interfacing with ISMUTL. Make sure the number is 64 or less.

?No such secondary key number

You are trying to access a secondary key directory which has not been created.

?Number of records dumped is mismatched with the number of records in the file

There is an inconsistency between the number of records dumped and the number of the records in the file. This usually means your index file is damaged. You might see this message if you are dumping the file and you press CTRL/C before the task was finished.

?Overlap keys must be alphanumeric type

You can't define any byte in a record as both binary and alphanumeric. You may define any byte as alphanumeric and concatenated, since a concatenated key is an alphanumeric key which is formed by combining alphanumeric fields into one key.

?System error

This message indicates a serious error. Contact your Alpha Micro dealer with information on the conditions under which the error occurred.

?This secondary key has been deleted

This message also appears when you're trying to obtain statistical information about a deleted directory.

?Too many concatenated fields

The number of repetitions for a concatenated key may not exceed 16. Check your program key definitions.

?Too many data file blocks

Your .IDA file contains more than 2**32 logical records.

?Too many index blocks

Your index file has more than 2 ** 32 blocks.

?Warning, free index blocks is less than minimum requirement

Use the ADDIDX command to add more index blocks, or delete some records. You won't be allowed to add more records until you create more space.

ISOCD

FUNCTION

Allows access to the files on ISO-9660 CDs. Files may be typed or copied to AMOS sequential or random access files.

CHARACTERISTICS

[*] This is currently unsupported software, meaning it has not been fully tested and documented, that errors may not be corrected, and that its specifications and/or behavior may be changed. But please advise us of any documentation or program errors so that we have the opportunity to correct them.

ISOCD is both re-entrant and re-useable and requires a 68020 or higher processor.

ISOCD enters a DOS like prompt and allows for displaying directories, changing directories, copying files (both sequential and random), typing files, specifying DOS or UNIX line termination.

FORMAT

```
ISOCD
```

Please contact Alpha Micro Products if you wish to customize this program or to access an ISO CD from within a program.

DEFAULTS

Uses the first CD it finds on the SCSI bus, starting with ID 6 and scanning down.

OPERATION

Enter `ISOCD`. It will return with a failure message or a C:\> prompt. At the prompt, you may enter a question mark (?) to get a list of commands and their descriptions. For example:

```
ISOCD RETURN
ISOCD Version 1.0(101) - Copyright (C) 1993 Alpha Microsystems Inc.

Scanning SCSI bus for CD-ROM....
CD-ROM drive located at SCSI id 4
Volume ID: PR062000                         created: 11/20/2005 06:43:15

CD:\>? RETURN

Available commands:

  QUIT                - return to AMOS
  CD directory        - change directory
  DIR                 - list files
  DIR/W               - wide file list
  COPY file amosfile  - transfer file to AMOS
  COPYR file amosfile - transfer random file to AMOS
  TYPE file           - display file on terminal
  SET DOS             - sets normal line termination
  SET UNIX            - sets UNIX style line termination

CD:\>
```

MESSAGES

?AlphaCD is installed - please uninstall ACD before using ISOCD

?ISOCD requires a SCSI dispatcher - it cannot be used with the SASI port.

?No CD-ROM drives found - cannot continue

?Disc is not an ISO-9660 or High Sierra compatible CD-ROM

?Invalid command

Unix line termination mode selected

Normal line termination mode selected

?File specification error

For at least the TYPE command.

?File not found

For at least the TYPE, COPY, and COPYR commands.

?ISO file specification error

Bad CD file name. For at least the COPY and COPYR commands.

?AMOS file specification error

Bad AMOS file name. For at least the COPY and COPYR commands.

?No directory specified

For at least the CD command.

?Invalid directory

Means "not found" for the CD command.

Fatal dispatcher execution error code

The SCSI dispatcher got an error that it could not process. Usually this means the SCSI bus is not functioning properly. Note that it may or may not include a leading question mark symbol.

?CD-ROM drive is not ready

?Disc appears to be an audio CD
additional sense=

The SCSI code information from the CD device indicates that this is not an acceptable data CD. The additional SCSI sense information may be of assistance in trouble shooting.

JOBALC

FUNCTION

Displays your job name.

CHARACTERISTICS

JOBALC is re-entrant and re-usable.

JOBALC is also used in the system initialization command line to define jobs to the system. See your *System Operator's Guide to the System Initialization Command File* for more information.

OPERATION

Enter JOBALC at AMOS level. For example:

```
JOBALC RETURN
Your job name is MELVIN
```

JOBPRI

FUNCTION

Displays and changes job priorities.

CHARACTERISTICS

JOBPRI is re-entrant and re-usable. In a timesharing environment, each user receives a certain number of real time clock ticks before the CPU moves on to another job. If you increase this unit of time (called a quantum) for a particular user, you speed up that job and, consequently, slow down the jobs of the other users on the system.

Increasing the number of ticks the CPU spends on a job is called increasing the job's priority. You should not change your job's priority or the priority of other jobs on the system unless there is a very good reason for it; indiscriminate changes in job priorities might be unpopular with other users on the system, and may slow overall system performance.

You may have job priorities between 1 and 254. The JOBPRI command value tells the system to use that many clock ticks for the specified job. The normal setting for a job is 13.

To change another job's priority, you must be logged into an operator's account [1,2], or the command must appear in your system initialization command file before the final SYSTEM command.

You cannot use JOBPRI to change any job's priority if dynamic job priority scheduling is active. You turn dynamic scheduling on and off using the SET command; you can adjust the values in the dynamic scheduling priority table using the ADJIT command.

FORMAT

```
JOBPRI {jobname} {priority}
```

jobname is the name of the job whose priority you want to change and ***priority*** is the number of clock ticks you want the job to have.

OPERATION

To find out your job's priority, enter JOBPRI:

```
JOBPRI RETURN
Current priority is 13
```

To find out another job's priority, enter JOBPRI and the name of the job. For example:

```
JOBPRI MELVIN RETURN
Current priority is 15
```

To change your job's priority, enter JOBPRI and a priority number. For example:

```
JOBPRI 50 RETURN
```

To change the priority of another user's job, log into [1,2], enter JOBPRI, the name of the job, and a priority number. For example:

```
LOG 1,2 RETURN
JOBPRI MELVIN 50 RETURN
```

MESSAGES

?Dynamic job priority scheduling is active!
?Request is denied

You cannot change any job's priority while dynamic job priority scheduling is active. You can turn dynamic scheduling on and off using the SET command.

%Illegal job priority level

You specified a number less than 1 or greater than 254. Re-enter a valid number.

?Nonexistent job

JOBPRI could not find the job you entered on the command line. Check your spelling. For a list of jobnames defined on your system, use TRMDEF.

?You must be logged into PPN [1,2] to set another job's priority.

Log into [1,2] and try again.

JOBS

FUNCTION

Displays the number of jobs allocated on the system and the number currently in use.

CHARACTERISTICS

JOBS is re-entrant and re-usable.

Also used in the system initialization command file to define the number of jobs on the system. See your *System Operator's Guide to the System Initialization Command File* for more information.

OPERATION

Enter JOBS at AMOS level. For example:

```
JOBS RETURN
20 jobs allocated, 8 currently assigned
```

MESSAGES

?Cannot allocate jobs after system is up

Enter JOBS and press RETURN. JOBS has no other functions at AMOS level. If you need to allocate jobs, see your System Operator about changing the JOBS command in your system initialization file.

KILL

FUNCTION

Forces a Control-C interrupt to another user's job to attempt to halt the program that job is currently running.

CHARACTERISTICS

KILL is re-entrant and re-usable. Depending on what the job you want to stop is doing, KILL may not be able to halt the task. In this case, and if that job is "locked up," you may have to reboot your system to free the job.

FORMAT

```
KILL jobname
```

jobname selects the job you want to try to interrupt.

OPERATION

Enter KILL and the name of the job whose program you want to try to stop. For example:

```
KILL JOB4 RETURN
```

MESSAGES

?No terminal attached to job

The job you tried to KILL does not have a terminal attached (and so KILL cannot work on it).

?Nonexistent job

You entered an invalid job name. Check your spelling or use the TRMDEF command to see a list of the valid jobs on the system.

LABEL

FUNCTION

Assigns a descriptive label to a logical unit of a disk, and displays disk labels. Can also correct a damaged label block.

CHARACTERISTICS

LABEL is re-entrant and re-usable. To create or change a label, or correct a damaged label block, you must be logged into an operator's account, [1,2].

You cannot run LABEL across a network. The disk you are accessing the label for cannot be on a remote system.

✋ **Changing a logical device's directory format can damage its file structure!** You should use the /E and /S switches only on a logical device which has had its block 0 label damaged in some way. To change the directory structure of a disk, you should back up the entire disk, use SYSACT to re-initialize the disk (this erases all data on the disk), then restore the files from the backup.

Disk labels are stored in block zero of the logical device and are used both to allow the operator to easily determine what disk is mounted, and to allow programs to verify the correct disk has been mounted. LABEL maintains as part of the label the date the disk was last mounted and the date the disk was originally labeled.

FORMAT

```
LABEL devn: {/switch}
```

devn: is the device which you want to label or for which you want the current label displayed or changed, and ***switch*** is an option.

OPTIONS

/E	Force logical device to extended format.
/S	Force logical device to standard (traditional) format.

OPERATION

To display a label, enter LABEL and a disk specification. For example:

```
LABEL DSK0: RETURN
Payroll Data (PAY001)
Created on 1-Jan-80 at OzWiz, Inc. on System 1 by Melvin
Last access:  2-Apr-88
```

To create or change a label, log into 1,2 and enter LABEL and the device specification. LABEL displays the old label (if one exists) and asks for new contents for each of the label fields. You can press CTRL/C at any time to halt the program. The fields are:

Volume Name: Enter the textual description of the disk, up to 40 characters. The operator can use this field to determine which disk is mounted.

Volume ID: Enter up to ten characters as the Volume ID. This field may be used by programs to determine if the proper disk has been mounted. The XMOUNT subroutine (which can be called from AlphaBASIC) returns this field. The MOUNT program also displays this field whenever a disk is mounted.

Installation: Enter the name of your installation or company. This field, which may be up to 30 characters long, may be useful when exchanging disks between different installations.

System: Enter the name of the computer system this disk was created on. This field, which can be up to 30 characters long, is useful when a particular installation has more than one computer system.

Creator: Enter the name of the person creating the disk. This field may be up to 30 characters long.

To change a logical device to extended format after its label block has been damaged:

```
LABEL DSK0: /E RETURN
Payroll Data (PAY001)
Created on 1-Jan-90 at OzWiz, Inc. on System1 by Melvin.
Last access: 2-Apr-94

Are you sure you want an EXTENDED logical? Y RETURN
Logical changed to extended format.

Label updated
```

MESSAGES

?Cannot combine both /E and /S switches

These two switches are mutually exclusive; you cannot use them in the same LABEL command.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see what devices are defined on your system, then try again.

?Disk is not labeled

The disk does not have a label. If you wanted to give it a label, this message means you are not logged into account [1,2]—do so, and try again.

?File specification error

Check your syntax against the format of the LABEL command, and try again.

?Illegal switch

You have entered an invalid switch. Only /E and /S are legal switches for LABEL.

Label updated

The label block has been successfully updated—its directory format was changed and/or the "noise" words were corrected.

"Noise" words will be updated

When using the /E or /S switch, if the label block's "noise" words are wrong, LABEL will update them when it updates the label.

%Switch valid only in Operator Account [1,2]

You can use the /E or /S switches only when logged in an operator account ([1,2]). Log into [1,2] and try again.

LDVSTS

FUNCTION

Displays statistical information accumulated by a particular LAN driver (.LDV).

LDVs are similar to NDVs. The most notable difference is that LDVs are hardware drivers only. They do not perform any network protocol-specific functions.

CHARACTERISTICS

LDVSTS is re-entrant and re-usable. It displays statistical information retrieved from the LDV specified on the command line. The LDV is polled for this information several times a second; only changed statistics are updated on the screen. You can press CTRL/C at any time to exit the program.

FORMAT

```
LDVSTS ldv
```

ldv is the name of the driver whose statistics you want to see. You do not need to include the .LDV extension.

OPERATION

LDVSTS displays three categories of information:

Driver Information: The driver name, version, type of network hardware it controls, and a device number indicating which hardware interface it controls (some interfaces can be re-addressed to allow multiple interfaces on the system).

Driver Status: These fields let you monitor the activity level of the network connection, and its quality. The individual fields are:

Packets Transmitted — Number of packets transmitted by this interface.

Packets Received — Number of packets received that were specifically addressed to this interface. This does not include broadcast packets.

Broadcasts Received — Packets received with a broadcast destination address. Broadcast packets are typically used for network management functions. Some broadcast packets are normal: a high rate of broadcast packets may indicate a network problem.

Transmissions Pending Packets the driver has received for transmission from upper level network software. This is normally zero. but can briefly become non-zero if the system or network is exceptionally busy.

Receptions Pending Packets the driver is holding, waiting to be retrieved by upper level network software. This is normally zero, but can briefly become non-zero if the system or network is exceptionally busy.

Protocols Registered The number of network protocols registered with the driver. Protocols must register their type with the driver in order for the driver to receive packets of that type.

Failed Transmissions The number of packets that could not be successfully transmitted. This is normally the result of too many collisions.

CRC Errors The number of incoming packets that were rejected due to a CRC error. A high CRC rate may indicate a faulty network card or poor signal quality on the network cable.

Framing Errors The number of incoming packets that were rejected due to a framing error. A high framing error rate may indicate a faulty network card or poor signal quality on the network cable.

Collision The number of transmission attempts that were unsuccessful because another interface tried to transmit at the same time. This number will normally go up gradually; if it increases quickly, it indicates a high amount of network traffic.

Lost Packets The number of incoming packets lost because the network interface was not in a state where it could receive packets. It is normally zero; if it isn’t, it usually indicates the system could not respond fast enough to the packet being received.

Rx Resources Exhausted The number of times the driver ran out of buffers to hold received packets. This should normally be zero; if it isn’t, the driver had to discard one or more received packets to make room for new incoming packets. The lost packet count includes the number of packets discarded.

Protocols: The protocol type code and name for each protocol registered with the driver. If LDVSTS doesn't recognize a type code, it displays "unknown" as the protocol name.

MESSAGES

?Could not find driver in system memory

The specified LDV was not found in system memory. Since LDVs must be in system memory to be used, LDVSTS only looks there for them.

?Retrieving driver statistics failed

LDVSTS cannot retrieve all the information the driver can provide, or the format of the information has changed. Contact Alpha Micro for an updated version of LDVSTS

?Usage: LDVSTS driver name

You must specify the name of the LDV you want LDVSTS to display information for.

LIBLIT

FUNCTION

LIBLIT is an object file library generator. It combines separate .OBJ files into one library (.LIB) file. You may also use LIBLIT to update an existing .LIB file.

CHARACTERISTICS

LIBLIT is re-entrant and re-usable. A library file gives you a way to make available to all programmers on the system a standardized set of machine language routines. It also keeps you from having to rewrite the same utility routines again and again for multiple programs.

At the time you link your object files into an executable program (using LNKLIT or SYMLIT), you may include the specification of a library file on the command line. If the other files specified on the command line make use of a symbol defined in the library file, LNKLIT or SYMLIT will process the routine within the library file that defines that symbol, linking it into your program file.

Each object file placed into the library file should be a separate routine because when your program refers to a symbol in the library file, LNKLIT or SYMLIT links in the entire object file required to resolve the reference. For example, if the library file UTILIT.LIB contains the object files GETNUM, SUBT, REAL, and BINWRT, and your program refers to a routine contained in the GETNUM file, LNKLIT or SYMLIT links in the entire object file GETNUM from UTILIT.LIB even if that file contains more than one routine.

For more information on library files, and on LIBLIT, M68, LNKLIT, and SYMLIT, see your *Assembly Language Programmer's Manual.*

FORMAT

LIBLIT works either in a creating/editing mode, or in a display mode:

```
LIBLIT {library-spec=}{filespec}{\}{(}{,...filespec}{)}
```

or:

```
LIBLIT{/L} {listspec=}{library-spec}}{\{(}filespec...{)}}
```

The first mode is the creating/editing mode, where ***library-spec*** selects the name of the library file you want to build, and the ***filespec(s)*** specify the object files for the library. The second is the display mode, where ***listspec*** indicates a disk file for the listing.

The backslash symbol (\) indicates the following file should be removed from the library file or excluded from the listing. If you include files inside parenthesis, those files are treated as a group.

You must supply at least one filespec. If you don't specify it on the LIBLIT line, you see an asterisk prompt. If you want to specify more files than will fit on one command line, you may continue the command line by ending the current line with a comma. LIBLIT displays an asterisk and you may continue entering filespecs. You may enter as many lines as you wish as long as the preceding line ends with a comma.

DEFAULTS

The default library-spec extension is .LIB. The default filespec extension is .OBJ. If you do not include an account and device specification, LIBLIT looks for the files specified in the account and device you are logged into, then it looks in your project library account, [P,0]. Finally, LIBLIT looks in the System Library account, DSK0:[7,7].

If you do not include an output specification, LIBLIT creates an output file with the same name as the first input specification. If you use the /L switch to create a library listing, LIBLIT uses the default extension .LST for that listing output file. If you use the /L switch and omit an output file specification, LIBLIT displays the listing on your terminal.

OPTIONS

/L List the library file, either on the terminal or in a file. This listing looks like a load map file, and lists all library object files and all INTERNed symbols.

OPERATION

TO CREATE A LIBRARY FILE:

Enter LIBLIT and the specification of the library file you want to create, an equal sign, and the specifications of the object files you want to combine. For example:

```
LIBLIT MYLIB=ADNUM,RDBIN,WRTBIN,ASCCHK RETURN
```

The command line above causes LIBLIT to create an output file named MYLIB.LIB containing the specified .OBJ files.

TO DISPLAY A LIBRARY FILE:

Use the /L switch. For example:

```
LIBLIT/L NEWLIB RETURN
```

sends the listing of NEWLIB to your terminal display. To tell LIBLIT to place the listing in a disk file, specify an output file and the /L switch. For example:

```
LIBLIT/L LIST=NEWLIB RETURN
```

TO UPDATE A LIBRARY FILE:

To update an existing library file, enter LIBLIT, the library file you want to modify, an equal sign, and the list of filespecs you wish to add and/or delete. For example:

```
LIBLIT UTILIT=UTILIT.LIB,NADDR RETURN
```

or:

```
LIBLIT UTILIT,NADDR RETURN
```

Both of these command lines tell LIBLIT to take the existing library, UTILIT.LIB, and modify it by adding the object file NADDR to it.

You may specify a group of files by using the () inclusion symbols, and you may delete files by using the \ symbol. For example:

```
LIBLIT NUMLIB\FORMAT RETURN
```

This command line tells LIBLIT to delete the object file FORMAT. The command:

```
LIBLIT NEWLIB,MATH\(BINADR,SMLLNUM,BINWRT) RETURN
```

tells LIBLIT to add MATH, and delete the BINADR, SMLLNUM, and BINWRT from NEWLIB.

When replacing an existing module in a library, DO NOT just add a new version of the module without first deleting the original module of the same name. Doing so can cause problems because both versions will still be in the library. The recommended procedure is to first delete the module and then to add the new version of the module. For example, to replace the object file KEYSUB:

```
LIBLIT MACLIB\KEYSUB,KEYSUB RETURN
```

MESSAGES

Command error

LIBLIT did not understand your command line. Check your syntax and try again.

?Fatal error - Incompatible library file version
?Fatal error - Incompatible object file version

An object file or library file you specified is in an incompatible format. The object file should be re-assembled and the library rebuilt using the current versions of M68 and LIBLIT.

?Fatal error - xxx is an overlay

You may not specify an overlay as an element of an object file library. Re-type the command line without the overlay.

?Listing aborted

LIBLIT was not able to finish the library listing. For example, an error occurred while LIBLIT was trying to access a file.

?OBJ files are not libraries -- they cannot be restricted by a modifier

You may only use the \ and () symbols if you are modifying a library.

?The following module was not found - xxx

You tried to modify an existing library file, but the object files you specified were not present in the library file. Make sure you did not accidentally use \.

?Undefined switch [switch] - ignored

Make sure you did not accidentally type \ when you meant to type /, and try again.

LINCNT

FUNCTION

Counts and displays the number of lines in a file. You may also adjust the line count prior to the display.

CHARACTERISTICS

LINCNT is re-entrant and re-usable. LINCNT considers a line to be terminated by a line-feed character, whether or not a corresponding carriage-return character accompanies it.

LINCNT is designed to work with text files. Using it on binary data files will not yield useful results.

FORMAT

```
LINCNT filespec {adjustment}
```

filespec is the file specification and ***adjustment*** is a factor applied to the result number.

OPERATION

Enter LINCNT followed the file specification for the file in which you wish to count lines. For example:

```
LINCNT MALLST.TXT RETURN
```

You may optionally include an adjustment factor which is applied to the line count prior to displaying the count. This can be used to account for fixed format output which may contain blank or header lines you do not wish to count. For example:

```
LINCNT MALLST.TXT -5 RETURN
```

LINCNT is useful when used with IO redirection and piping. For example, to display the number of ersatz devices defined on your system, you can send the output of the ERSATZ program to LINCNT, and include an adjustment factor to account for the header and blank line output by ERSATZ:

```
ERSATZ | LINCNT -2 RETURN
```

MESSAGES

?Cannot OPEN [filename] - file not found

Check your syntax, or use DIR to see what files exist and try again.

LNKLIT

FUNCTION

Creates executable machine language programs by linking and resolving one or more assembled object files.

CHARACTERISTICS

LNKLIT is re-entrant and re-usable. When you use M68 to assemble an assembly language program, the .OBJ file that results is in an intermediate form that is not ready for execution. Separate .OBJ files may contain symbol references to each other that cannot be fully resolved because these files cannot be assembled together.

LNKLIT is a linkage editor that links together and resolves several .OBJ files to produce an .OVR or .LIT program file. If the program you assembled with M68 was made up of only one file that contains no internal or external symbol references, M68 automatically calls LNKLIT for you as Phase 4 of the assembly to produce a program file. Otherwise, you must use LNKLIT yourself to link the .OBJ files that will make up the single .LIT file.

LNKLIT links files together in the order in which you specify them on the LNKLIT command line. LNKLIT does not produce a program file if one or more of the files you specify is not found in its assembled object (.OBJ) form.

LNKLIT supports the use of object file libraries (see the LIBLIT reference sheet for information on library files). For more information on LNKLIT and assembly programming, see your *Assembly Language Programmer's Manual*. It also contains information on library, optional, and load map files.

FORMAT

```
LNKLIT {/switch}filespec{,...filespec(s)}{/switch}
```

filespec is the specification of a file you want to link and ***/switch*** is an option request. **You may not specify an overlay or library file as the first filespec on the command line.**

If you have too many filespecs to fit on one screen line, you may continue the LNKLIT command line by ending it with a comma. LNKLIT accepts as many lines of filespecs as you wish, as long as you end the preceding line with a comma.

If a switch appears in front of a filespec (e.g., LNKLIT MATH,/O NUM,SUB), that option request becomes the default for the rest of the command line. If a switch follows a filespec (e.g., LNKLIT MATH,NUM/O,SUB), it affects only that filespec. Certain switches (identified in the discussions below as "operation switches") affect all filespecs on the command line no matter how they are placed.

DEFAULTS

LNKLIT uses the default extension of .OBJ, unless you are specifying a library file, in which case LNKLIT uses the default extension of .LIB.

If your filespec does not contain an account and device specification, LNKLIT assumes the file is in the account and device you are logged into. Next it looks in your project library account, [P,0]. Finally, it looks in the System M68 account, DSK0:[7,7]. The default switches are /P and /R.

OPTIONS

/B Doesn’t force word alignment of .OBJ modules.

/D Requests DSECT initialization. The default is no DSECT initialization. Operation switch.

/E Includes equated symbols in symbol table file. Must use with /M or /S. Operation switch.

/L Designates a library file. File switch.

/M Generates a load map (.MAP) file. Operation switch.

/N Suppresses the /P switch. Operation switch.

/O Designates an optional file. File switch.

/P Generates a program (.LIT or .OVR) file. Operation.

/R Designates a required file. Cancel /L and /O. Default, file switch.

/S Generates a symbol table (.SYM) file. Default, operation switch.

/U Doesn’t automatically include SYSLIB.LIB in linkage.

/X Allows maximum DSECT area of 64K, rather than the 32K default, by allowing full, 16-bit signed offsets.

OPERATION

Enter LNKLIT and the specifications of the files you want to link together. For example:

```
LNKLIT/M VISFIL,VIS1,UTILIT.LIB/L RETURN
```

Notice the command line above specifies a library file, UTILIT.LIB. By using the /M switch, we are also asking LNKLIT for a load map file.

LNKLIT displays several messages as it process the files (the exact messages you see depend on the options you have requested and files you have specified).

MESSAGES

?Attempt to directly reference a DSECT symbol

Index through a base register when referencing a symbol defined in a data section.

?Command error

Check your syntax and try again.

?Fatal error - At most one DSIZE may appear in an overlay

Check the instructions for use of the DSIZE pseudo opcode, and try again.

?Fatal error - Attempt to specify overlay [overlay-name] as optional

You may not use /O if that object file is an overlay.

?Fatal error - DSIZE must not appear in an overlay

Check the instructions for use of the DSIZE pseudo opcode, and try again.

?Fatal error - Expression stack error

An error occurred when LNKLIT evaluated some expressions in your files. If you see this error, report it, and the conditions under which it occurred, to Alpha Micro.

?Fatal error - Expression stack overflow

You exceeded the number of nested expressions that LNKLIT can handle. Try to find the overly complex expression in your source file and simplify it.

?Fatal error - First file must not be a library

To enable LNKLIT to correctly resolve external references to a library, you must specify the program referencing that library before you specify the library file itself. Try again with the library file after the reference file.

?Fatal error - First file must not be an overlay

To enable LNKLIT to correctly resolve external references to an overlay, you must specify the program that references that overlay before you specify the overlay file itself. Try again with the files in the proper order.

?Fatal error - Incompatible library/object file version

One or more of the object or library files is in an old format not compatible with the current version of LNKLIT. The object file should be re-assembled or the library file rebuilt using a current version of the software.

?Fatal error - Insufficient memory

See your System Operator about increasing the size of your memory partition.

?Fatal error - Overlays of code are not permitted
Next expected address is [address]
Overlay code address is [address]

Your program is trying to overlay previous code. Check your .M68 programs to make sure your overlay references are correct.

?Fatal error - Overlay symbol [symbol] in segment [segment-name]
was not defined in a previous input segment

You may not reference an undefined overlay. In other words, LNKLIT is trying to process a supposed overlay file, but has seen no references to the overlay in a previous file. Without such a reference, LNKLIT cannot construct the overlay, so it aborts and returns you to AMOS command level.

?Fatal error - Overwriting of impure zone not permitted Next expected address is xxxx Overwriting address is yyyy.

You backstepped the DSECT location counter, overwriting previously allocated storage in a DSECT area.

?[symbol] undefined

An external symbol is undefined. This is a very common error. You have referenced a symbol which has not previously been defined. Make sure an EXTERNed symbol in one segment is defined by an INTERN statement in another segment.

?Undefined switch [switch] - ignored

Try again, using a valid switch.

LOAD

FUNCTION

Loads disk files into your memory partition as memory modules.

CHARACTERISTICS

LOAD is re-entrant and re-usable. You may use LOAD to load memory modules only in your own memory partition.

You cannot load a file from a remote system over a network.

LOAD does not understand wildcard symbols, but it does understand ersatz names. If you specify an ersatz name but omit a file extension, LOAD uses the default extension for that ersatz name. For example, the default extension for the BAS: account is .SBR. The ersatz device default extensions are:

Ersatz Device/Extension		Ersatz Device/Extension	
BAS:	.SBR	BOX:	.BOX
CMD:	.CMD	DVR:	.DVR
HLP:	.HLP	LIB:	.LIT
SYS:	.LIT	MAC:	.M68
OPR:	.LIT	PAS:	.PSB

FORMAT

```
LOAD filespec
```

filespec selects the disk file you want to load.

OPERATION

Enter LOAD and the specification of the file you want to load into your memory partition. For example:

```
        LOAD DSK0:ISAM.SYS[1,4] RETURN
```

If you see the AMOS prompt symbol (and you don't see an error message), you know the program you requested is now loaded into memory. You can verify this by using the DIR MEM: or MAP command.

MESSAGES

?Cannot DELETE [filespec] - file may not be deleted

A file of the same name as the one you tried to LOAD already exists in memory—normally, LOAD would write your new file over the old, but the one in memory is locked there by AMOS.

?Cannot INIT [filespec] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Cannot load [filespec] - file not found

Check your syntax, or use DIR to find the file, and try again.

?Cannot load [filespec] - disk not mounted

MOUNT the disk and try again.

?Contiguous files may not be loaded

Random files cannot be loaded into memory.

?Program restricted to use on local system only

You cannot LOAD a file from a remote system over a network. COPY the file to your system, then LOAD it.

%Warning -- Program is not reusable

You have loaded a program file that is not re-usable. The file has been loaded, but it may not function properly after the first time it is executed. We recommended you use DEL to remove it from your memory partition.

LOG

FUNCTION

Logs you into an account. Once you are on the system, LOG displays which account you are logged into or transfers you between accounts and devices.

CHARACTERISTICS

LOG is re-entrant and re-usable. You may only use a few AMOS commands if you are not logged into the system, such as: LOG, LOGON, SYSTAT, MEMORY, ATTACH, SYSTEM, DATE, TIME, HELP, and SET.

LOG recognizes ersatz devices. For example, **LOG BAS:** RETURN logs you into the AlphaBASIC library account, DSK0:[7,6]. For a list of the ersatz devices available on your system, enter ERSATZ at AMOS command level.

Because they are such common typing mistakes, LOG treats the characters "m" and "." as commas. However, if the "comma" comes right after the word LOG, a mistake is not translated (because LOG doesn't know if you made a typing mistake or mis-entered a user name). For example, **LOG 100m5** RETURN works, **LOG m5** RETURN doesn't.

If an account is password protected, LOG checks your password entry before logging you into that account. It also validates your user name and user password before logging you in. LOG also sets your job's file-locking status according to the Lock/Nolock and Elock/Noelock options set up by MUSER. If the status is changed, the event is recorded in the system log file (if event logging is active).

If you have a command file in your account named START.CMD, LOG automatically runs that file after it logs you in (unless you specify /N). This command file can contain AMOS system commands, program invocations, the names of other command files, etc.

If you have a MAIL.JNK file in DSK0:[7,2], LOG displays the first line of that file whenever a user logs into the system.

FORMAT

```
LOG {/switch}{devn:}{[{p}{,pn}]} {user name}
```

switch is an option, ***devn:*** is the device name, ***p*** is the project number, and ***pn*** is the programmer number. If you are already logged into an account, you may be able to abbreviate the account number depending on where you want to LOG to (see OPERATION, below). The ***user name*** is required if you are not logged in and you have a user-name system, but if you do not include it in the LOG command, you are prompted for it. If you use user name alone, you are logged into your root account.

DEFAULTS

If you leave out a device specification when you first log into the system, LOG uses DSK0: as a default. If the account you have specified doesn't appear on DSK0:, LOG searches the rest of the units of that device.

If you are already logged in, but leave out the device specification, LOG uses as a default the device you are logged into; if the account does not appear on that device, LOG searches the rest of the units of that device, beginning with device unit #0.

If you use LOG when you are already logged into the system, LOG uses the project or programmer number of the account you are logged into as the defaults.

OPTIONS

/N	Do not access the START.CMD file when logging in to this account. Operation switch.

OPERATION

To log into the system, enter LOG and an account specification and/or user name. For example:

```
LOG DSK1:47,2 RETURN
LOG RANDOLPH RETURN
```

LOG then searches for the account you specified. In the first example above, LOG looks on DSK1: for account [47,2]. In the second example, the user name causes LOG to log you into your root account. When the account is entered, LOG then looks to see if a password is required (passwords are assigned by the System Operator for system security). If an account password is needed, you are prompted for it.

The system doesn't display your password on the terminal as you type it; this prevents other users from seeing your password. If AMOS recognizes the password, it logs you into the system. Once you have logged onto the system, LOG displays a message telling you which device and account you've logged into. If any other users are logged into the same account, LOG warns you (certain AMOS programs should not be run if other people are active in your account and/or logged into the same disk).

☝ The first time a user logs on to a computer, the first line of the file DSK0:MAIL.JNK[7,2] is displayed, if that file exists.

If you are already logged into an account, enter: **LOG** RETURN to find out which account and device you are logged in under.

Once you are logged into the system, you can use LOG to transfer to other accounts. Enter LOG followed by the device and account to which you wish to transfer. For example:

```
LOG DSK4:123,5 RETURN
```

If you are in a project, and you wish to move to another account in the same project, you can abbreviate the LOG command, because of the defaults. For example:

```
LOG ,5 RETURN
```

MESSAGES

?Account number invalid

Make sure you gave the correct device, and the account number is in the proper form, and try again.

?Already logged in as [user name]
?Please use LOGOFF, then try again

You tried to log to another account using a different user name than the one you are currently logged in under. In order to change your user name, you must first LOGOFF, then LOG on under a different user name.

?Already logged in under [account]

You tried to log to where you are currently logged.

?Bad password

Try again, and be careful with your spelling. If you still have no success, see your System Operator for help.

?Command format error

You made a mistake in typing in the LOG command. Check your syntax and spelling and try again.

?Disk not mounted

Mount the disk and try again.

?Error setting lock mode
?Insufficient queue blocks

LOG could not set your file-locking status because there are not enough queue blocks. You are logged on, but file locking is as it was. See your System Operator about allocating more queue blocks.

?Invalid user name

The user name you specified is not defined on your system. Use MUSER to display a list of valid user names for your system. See your System Operator if you want to add or change a user name.

?Nonexistent device

You tried to log to an account on a device LOG cannot access; the device is not defined in the DEVTBL command in your system INI file, does not have a driver program in account [1,6] of your System Disk, or is not file-structured. Use DEVTBL to see a list of currently defined devices on your system.

Not logged in

You entered LOG to find out what account you are logged in under, but you are not logged in. This message is also seen when you try to execute a command that can't be run unless you are logged in.

?User [name] is a remote user only and may not log in to this system

You cannot log into the system you tried to log into. See your System Operator if you need information about the network.

?Unable to locate requested language

Your user definition specifies a language not defined on your system. Either use a different user name to log in, or see your System Operator about defining that language or changing your user definition to an available language.

LOGOFF

FUNCTION

Logs you off the system.

CHARACTERISTICS

LOGOFF is re-entrant and re-usable. Use LOGOFF if you leave your terminal for any length of time; this prevents other users from using your terminal to access your files.

LOGOFF resets your default device to DSK0:. LOGOFF also resets the flags in your job table to ECHO, OCTAL, NODSKERR, NOVERIFY, and NOGUARD. See the SET reference sheet for an explanation of these flags.

You may only use a few AMOS commands when logged off, such as: ATTACH, SYSTEM, HELP, LOG, LOGON, SYSTAT, MEMORY, DATE, TIME, and SET.

LOGOFF deletes any memory modules in your memory partition as it logs you off the system. It updates the accounting information that tells how much computer time you used. This information can be viewed using the MUSER program.

OPERATION

Enter LOGOFF at AMOS command level:

```
LOGOFF RETURN
```

LOGOFF logs you off the system and lets you know which account you are leaving, the date and time, the number of disk reads and writes since you logged on, the CPU (or actual processing) time, and the connect time (length of time since you logged in).

MESSAGES:

?Error reading USER.SYS
?Error writing USER.SYS

The user database file, DSK0:USER.SYS[1,2], could not be accessed. Usage information is not updated for the user logging off the system.

?Unable to locate current user in USER.SYS

There is no record of the user in the user database file, DSK0:USER.SYS[1,2]. No usage information can be updated.

LOGON

FUNCTION

Logs you into your root account.

CHARACTERISTICS

LOGON is re-entrant and re-usable. You may use the conversational LOGON program when signing on to the system from a logged out state. The program displays a menu request for your user name. When you enter your user name and an optional password, you are logged in to your root account. LOGON also sets your job's file-locking status according to the Lock/Nolock and Elock/Noelock options set up by MUSER. If the status is changed, the event is recorded in the system log file (if event logging is active).

The LOGON program makes use of function keys and provides an online HELP facility. Translation tables with the extension .AMX must be installed to use the function keys.

OPERATION

Enter LOGON at AMOS level:

```
LOGON RETURN
```

LOGON displays a menu screen. A blinking cursor shows you where to enter information. LOGON asks you for your user name, and possibly a password (if you have security on your system). If your identification is correct, LOGON will verify you have been logged in to your root account.

MESSAGES

?Command format error

Check your syntax and spelling and try again.

?Disk not mounted

Mount the disk and try again.

?File in use - cannot set lock mode -
Press RETURN to continue

LOG could not set your file-locking status because the job has a file locked. You are logged on, but file locking is as it was. See your System Operator for help.

**?Insufficient queue blocks - cannot set lock mode -
Press RETURN to continue**

LOG could not set your file-locking status because there are not enough queue blocks. You are logged on, but file locking is as it was. See your System Operator about allocating more queue blocks.

?Improper password - try again.

Try again, and be careful with your spelling. If you still have no success, see your System Operator for help.

?That name is not recognized - try again.

The user name you entered is not defined on your system. Try another user name, or see your System Operator for help.

LOKUTL

FUNCTION

LOKUTL allows general system users to see a status display of the File/Record Locking Service system. LOKUTL also allows the System Operator (when logged into OPR:) to display the current file lock status, and monitor its operation.

CHARACTERISTICS

LOKUTL is re-entrant and re-usable. When you use LOKUTL from OPR:, LOKUTL enters a privileged mode and allows you to execute a variety of functions. When you use LOKUTL from any other account, LOKUTL displays the current status of the file locking data base.

OPERATION

FROM STANDARD SYSTEM ACCOUNTS:

Enter LOKUTL:

```
    LOKUTL RETURN
```

The program displays data on which files and records are currently locked on your system. LOKUTL then lists each job currently active. The Job ID is shown on the same line as its first file specification.

Under each job ID, LOKUTL lists the files the job is currently using. The word "Exclusive" indicates the file is locked exclusively, and the word "Writer" indicates the file is open for output. If it's a random file, LOKUTL then lists the records locked by this job. If a file is locked exclusively, LOKSER doesn't need to lock individual records.

FROM THE SYSTEM OPERATOR'S ACCOUNT:

Enter LOKUTL as above. LOKUTL displays an asterisk prompt to indicate LOKUTL is waiting for a command.

COMMAND SUMMARY

A = Abort a User from the Data Base

Cancels the program being run by a particular job, and releases all of its locked files and records. LOKUTL asks you the name of the job and processes the job as if it EXITed. The job is not aborted and the files are not CLOSEd as far as AMOS is concerned.

C = Close a File for a User

Unlocks a file and releases all its records. LOKUTL asks you for the job name and file ID shown on the File Sequence Display (see the F command below). As in the command above, the file is not CLOSEd as far as AMOS is concerned.

F = List Data Base Sorted by File ID

Allows you to see the same information as the U command, but sorted in a different order. Instead of showing you the files being used by each job, this command shows you which jobs are accessing each file.

H = List LOKUTL commands

L = List Lock options.

Lists jobs, filespecs, and job/filespec combinations that have locking turned off.

M = Monitor File Locking Operation

Gives you a dynamic display of the data base. The display is the same as you see from any normal account, except that it is updated whenever AMOS services a request, or every 50 seconds to reflect the current file lock status of each job. At the bottom of your screen you see the word "Waiting." LOKUTL prints one dot after this word every second until it renews the display. When you are ready to stop, press CTRL/C.

O = Set Lock options.

Turn locking ON or OFF for jobs, filespecs or job/filespec combinations.

Q = Quit

Returns you to AMOS command level when you are finished using LOKUTL.

R = Unlock a Record for a User

Unlocks a specific record in a random file. LOKUTL asks you for the job name, the file ID, and the record number.

S = Unlock a Stream for a User

Unlocks a specific stream in a USAM file. LOKUTL asks you the job name, the file ID, the starting byte position, the stream length, and whether or not it is locked exclusively.

U = List data base sorted by User ID

Displays the currently active jobs on your system and the files they are using. This display is the same as when you use LOKUTL from normal accounts.

W = Wake up a user

Wakes up a job waiting for a file or record. Can also wake up a job trapped in a deadlock.

X = Enable Diagnostic Messages

Causes diagnostic messages to appear on your terminal whenever a program tries to execute a conflicting instruction. The messages are `%File not OPEN` and `%File already OPEN.` You probably want to use these two messages only when debugging a program.

Y = Disable Diagnostic Messages

Turns off the diagnostic messages.

MESSAGES

?File in use

Try again later.

?File not found

Use DIR to list files and try again.

?File specification error

Check your syntax, or use DIR to see files, and try again.

?Insufficient queue blocks

See your System Operator about increasing system queue blocks.

?Invalid argument

Check your syntax and try again.

?Invalid job name

Use SYSTAT to see the jobnames on your system and try again.

MAKACD

FUNCTION

Copies one or more AMOS logical disks to a recordable CD media in a supported CD-recorder. CDs created with MAKACD can be used for software distribution or for system backups. Using a 4 speed CD-recorder it only takes about 15 minutes to record an entire 600MB CD. CD's created with MAKACD can be easily read after mounting the CD with the ACD program.

CHARACTERISTICS

MAKACD copies logical AMOS disk drives onto a recordable or rewritable CD in a format that is compatible with the Alpha Micro ACD program. An ACD compatible CD can contain up to approximately 600 megabytes of data. MAKACD creates a logical drive structure on the CD media such that each logical drive is equal in size to the largest logical disk drive copied. If logical drives of differing sizes are specified, the smaller drives will be padded on the CD to equal to the largest logical size copied. Only entire logical drives, including unused areas, can be copied to the CD. Rewritable CDs may be erased and reused.

When recording to a blank CD, MAKACD will start recording at the beginning of the CD and use only as much space as required to hold the desired data. The Table of Contents will normally be written and the CD can then be used with the ACD program.

When recording to a partially recorded CD, MAKACD will start recording at the first available unrecorded location on the CD. Normally, all of the desired data will be recorded and then extra filler will be recorded followed by the ACD special sector. Finally, the Table of Contents will normally be recorded and the newly recorded data can then be used with the ACD program. If you record data on a previously recorded CD, ACD will use the newly recorded information and ignore all data that was previously placed on the CD.

MAKACD uses the available user memory for data buffers in order to continue supplying data to the CD-recorder while other system or multi-user activity occurs. Excessive system or multi-user activity can still interfere with the steady flow of data to the CD-recorder, causing fatal recording errors.

FORMAT

```
MAKACD {switches}
```

OPTIONS

/HELP Display the available options and exits

/? Same as /HELP

/V Display version information and exits

/COUNT:n Creates n CDs containing the same data

/DEV:xxx: Uses device and driver named xxx: instead of the default CDR:

/EJECT Ejects the CD in the recorder and exits

/ERASE:ALL Erases the entire rewritable CD by overwriting all data areas on the CD.

/ERASE:QUICK Erases the rewritable CD by clearing only the control information without actually overwriting the data areas of the CD. This causes the CD to react like a blank CD when read or written. Do not use this switch if the rewritable CD contains more than one session.

/ERASE:SESSION Erases the last session from a multi-session rewritable CD by overwriting all data areas of the last recorded session on the CD. This command may be used more than once to successively erase multiple sessions from the CD. Once a session is erased, the previous session may become available.

/ID:n Uses the CD-Recorder at SCSI ID n instead of scanning the SCSI bus to find a CD-Recorder. The ID can be from 0 to 15.

/NOEJECT The CD will not be ejected from the recorder.

/NOFILL Do not write AMOS filler and ACD special sector information. The newly recorded data will not be accessible by the ACD program.

/NOTOC Do not write out the table of contents when recording is finished. The newly recorded data will be inaccessible until the /TOC option is used to write the table of contents.

/PIC Displays the Product Installation Code

/SPEED:n Sets the maximum recording speed to n times the normal audio speed. This switch can be used to force recording at a slower speed if the system is unable to supply data to the CD-Recorder.

Speeds from 1 to 32 may be specified. If the CD-Recorder does not support the speed specified, recording will be done at a lower supported speed.

/TOC Writes the table of contents of the current CD and exits.

/TEST Write CD in test mode, which does everything except turn the CD laser on when recording.

/TESTFIRST Does a TEST first, followed by the actual CD recording if no errors were encountered in the TEST.

/VERBOSE Display additional error messages.

MAKACD with no switches will create an ACD compatible CD, using the CDR: device found by scanning the SCSI bus. The CD will be created using the maximum recording speed of the CD-Recorder, without first doing a test copy.

OPERATION

Before starting the program, place a blank CD or partially recorded CD in the CD-recorder.

Recording on a partially recorded media will render all previously recorded information inaccessible.

It is recommended that the system be idle. Other users or system activity could interfere with CD recording and cause the CD to be unusable. Once recording has started, the CD-recorder must receive a constant stream of data until the entire recording is finished. If the CD-recorder runs out of data before recording is finished, the program will abort with a fatal error.

Copying logical disks to the CD-recorder that are being updated by other users can result in CDs containing incorrect or incomplete data.

Type MAKACD from the AMOS prompt:

```
MAKACD RETURN
```

MAKACD will attempt to find a CD-recorder that is compatible with the CD-recorder driver being used. The driver must have the same name as the CD-recorder device name and either be loaded in system memory or reside in DSK0:[1,6]. MAKACD will find the CD-recorder either using the command line switches /DEV and /ID or by defaulting to CDR: if /DEV is not specified and by scanning the SCSI bus if /ID is not specified. If more than one CD type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for recording.

Scanning the SCSI bus will find CDROM devices as well as CD-recording devices.

After entering the MAKACD command, the following will be displayed:

```
      MAKACD Version X.X(xxx) - Copyright (C) 1999 Alpha Microsystems Inc.

      Initializing SCSI CD-Recorder...
```

If MAKACD finds multiple possible CD-recorders (including CDROM drives) while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible CD-Recorders:

          ID  Description
      1   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
      2   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx

      Select one of the above devices:
```

Additional information about the CD-recorder, driver, and media is then displayed:

```
      Using Generic SCSI-MMC CDR driver (CDRMMC)
      CD-Recorder located at SCSI id 5
      A blank CD is in the CD-Recorder
```

MAKACD then asks for an optional title for the CD. The title may be up to 60 characters long.

```
      You may enter an optional title for the CD or press RETURN for
      none.
      Title:
```

Next MAKACD asks for the AMOS logical drives to copy to the CD, as follows:

```
      Enter the list of disk devices to transfer onto the CD-Recordable
      disk.  Devices may be entered as a range (ex. dev0: -20 for dev0:
      through dev20:), or may be comma separated, The list is terminated
      with a blank line:

*
Enter the logical drives to be copied and then just a [return] when all
desired drives have been entered.

      *DSK0:
      *DSK6:
      *
```

MAKACD will the check the transfer rate of the drives specified to make sure they are fast enough to supply the continuous data stream required by the CD-recorder. If the speed is less the 300K per second, the program will terminate. If the speed is between 300K and 600K per second, recording speed will be limited to 1x. If the speed is between 600K and 1000K per second, recording speed will be limited to 2x. If the speed is greater than 1000k per second, recording will take place at the maximum speed of the CD-recorder or the speed specified by /SPEED in the command line, whichever is slower.

```
      DSK0: 64660 blocks. Transfer rate: 1263K per second - ok
      DSK6: 64660 blocks. Transfer rate: 1196K per second - ok
```

MAKACD then displays information about how much space is required on the CD and where recording will start.

```
Calculating space requirements:
        AMOS partition requires 16165 sectors
        289735 unused sectors remain
        Calculated starting AMOS sector is 0
```

MAKACD then gives you the opportunity to abort or to start the recording process.

```
Note that once started, the recording operation can be stopped by
pressing ^C which will render the CD-R disk unusable.

Warning: The CD-Recorder must receive data constantly. Other users
on the system could delay data transfers and render the CD-R disk
unusable.

Press RETURN to start recording or ^C to abort.
```

The recording process then begins. As it progresses, status messages are displayed:

```
Transferring DSK0: in real mode
Transferring DSK6: in real mode
Waiting for CD-recorder to finish writing...Completed.
```

Also the following information is displayed on the status line:

```
 20% complete  buffer 95%
```

The percentage complete shows how much of the total amount of data has been written to the CD. The buffer percentage shows how full the CD-recorder's internal cache buffer is.

When all data has been written to the CD in real mode the following messages are shown:

```
Writing Table Of Contents...
AlphaCD creation complete
```

And then the CD is ready to use.

REQUIREMENTS AND SETUP

MAKACD requires the following:

- A 68030 or faster processor
- A full interrupt enabled SCSI dispatcher.
- DCACHE, with the number of read-ahead blocks set to 7 for best performance
- AMOS 2.3A or later.
- A supported CD-Recorder.

The MAKACD package contains the following required files:

- The device driver for the CD-Recorder.
- The CDR.DEV file that contains supported CD-recorder information.

- The SSD overlay file (CDR000.OVR)

MODIFYING THE SYSTEM INITIALIZATION FILE:

The CD-recording device must be specified as a non-sharable device in a DEVTBL statement in the system initialization file.

Example:

```
DEVTBL      /CDR0
```

No other changes are required in the system initialization file.

The available CD-recorder device driver files are supplied either with the MAKACD package or with the Alpha Micro CD-recorder you purchased. The device driver must be installed in DSK0:[1,6] and given the same name as the CD-recorder device in the DEVTBL statement. For example, using the supplied CDRMMC.DVR device driver and the device name CDR: you would have:

```
DEVTBL      /CDR0
```

in the system initialization file. Then copy the supplied device driver as follows:

```
LOG DSK0:[1,6]
COPY CDR.DVR=CDRMMC.DVR
```

If desired you may load the device driver into system memory during system initialization by adding the following statement in you system initialization file:

```
SYSTEM DSK0:CDR.DVR[1,6]
```

This statement should be added in the same area of the initialization file that is currently loading other system device drivers.

The CDR.DEV device information file must be installed in DSK0:[1,4]. This file is supplied with the MAKACD package or with the Alpha Micro CD-recorder. If you received more than one copy of the file, you should use the newer one.

You must enter the Product Installation Code (PIC) to actuate MAKACD. Contact your dealer for the PIC for your computer system. The first time you attempt to use MAKACD you will be asked to enter the PIC. After entering the correct PIC, MAKACD is ready to use.

MESSAGES

Command line syntax messages:

- Error - Cannot have /EJECT, /TOC, /NOTOC together.
- Error - Cannot have /TEST and /TESTFIRST together.

- Invalid switch
- Invalid switch option

System requirements messages:

- MAKACD requires a 68030 or higher CPU.
- MAKACD requires a full interrupt level dispatcher.
- MAKACD requires a SCSI dispatcher.
- MAKACD requires AMOS 2.x or compatible operating system.
- Memory partition is too small for MAKACD. An additional nnnK of memory is required.

CD-Recorder device or driver messages:

- ?Cannot open xxx: - device in use

  Another user is currently using the CD-recorder.
- Device specified is not a CD-Recorder.
- This CD-Recorder requires a different driver.
  The current driver is: xxxxxx
  The required driver is: xxxxxx

  The device and driver selected are inappropriate for the physical CD-recorder.
- Unable to find a CD-Recorder.
- Unknown CD-Recorder!
  Error - Unsupported CD recorder found.

  The CD-recorder is not supported by MAKACD.

Error messages when setting up or writing to the CD-Recorder

- Error - Buffer not initialized.
- Error - CD-Recorder out of data during recording.

  The computer was unable to supply data to the CD-recorder fast enough to keep the recorder supplied with data. The CD is incomplete and unusable. If others were using the system during recording, try again without the other users. Otherwise try again using a slower maximum recording speed (see the /SPEED switch).
- Error - Disk in CD-Recorder is not writeable.
- Error - Disk in CD-Recorder is not writeable, last session is not empty
- Error - Disk is full and cannot be used.
- Error - Media is not rewritable and cannot be erased.
- Error - Total data requirements exceed CD-R capacity.
- Error - Unable to load CDR media.

  This indicates a hardware problem with the CD-recorder or a problem with the CD media.
- Error - Unable to open CD recording session.

  Try a different CD media. This can also indicate a possible CD-recorder problem.
- Error - Unable to open track for recording.

  Try a different CD media. This can also indicate a possible CD-recorder problem.
- Error - Unable to read disk information from media.

  Try a different CD media. This can also indicate a possible CD-recorder problem.

- Error - Unable to set desired write mode.
  A device error has occurred while attempting to setup the CD-recorder for real mode or test mode recording.
- Error - Unable to set recording speed.
  A device error has occurred while attempting to setup the CD-recorder for the desired recording speed.
- Error - Unable to set write mode.
  A device error has occurred while attempting the setup the CD-recorder recording mode.
- Error - Unable to write to the CD.
  A device error has occurred while attempting to record data on the CD.
- Fatal SCSI error. Sense key=nn additional sense=nn
  CD-recorder device error has occurred. Sense key and additional sense provide further error information.
- Please insert a CD-Recordable disk
- SCSI error - xxxxxxxxx
  [sense error message] Code= nn.nn
  CD-recorder device error has occurred. Code provides additional SCSI error sense information.
- Too slow.
  The disk drive is too slow to keep up with the CD-recorder.
- Warning - Unable to close track.
  Device error occurred while closing the current CD track. The CD may or may not be usable.
- Warning - Unable to read existing track numbers. Starting with track 0.

Errors concerning the AMOS CD data structure:

- Calculated and true starting points are different.
  Recording will start at sector nnnnnn with a filler of nnnnnn sectors
  This is only a warning indicating that recording will start at a different location on the CD than originally assumed.
- The AlphaCD logical unit size is greater than 64K blocks which could mean compatibility problems on AMOS 1.X systems. Press RETURN to continue, or ^C to abort MAKACD:
  The logical disk size on the CD will be greater than the maximum size of a traditional logical drive.
- Error - Disk geometry calculation was incorrect.
  The AMOS hidden sector parameters calculated are invalid.
- Error getting AMOS data buffer
  The system was unable to acquire memory for data buffers.
- Error - memory previously calculated as available isn't
  Memory required for data buffers has disappeared.
- Error - No devices specified.
  User did not specify any AMOS logical disks to be copied to the CD.
- Error - Unable to calculate AMOS buffer size.
  The system was unable to find a buffer size that allows the AlphaCD special sector to properly recorded.
- Error - Unable to calculate AMOS disk geometry.

The AMOS hidden sector parameters could not be calculated.

- Error- Unable to remove CD-Recorder data buffer from memory.
- Error - Unable to write AlphaCD special sector.
  An error was received while trying to record the AlphaCD special sector.
- Unable to continue due to one or more errors shown above.
  Testing of logical disk drive transfer rates resulted in the errors listed above.

Normal informational messages:

- A blank CD is in the CD-Recorder.
  The CD media in the CD-Recorder is blank and unused. A blank CD does not require filler and an AlphaCD special sector.
- AlphaCD test complete
  The test recording is done.
- AlphaCD creation complete
  The recording of data on the CDR media is done.
- Are you sure you want to erase data from this CD (Y/N)?
  If you really want to erase the CD, type Y RETURN*. The CD will be erased as requested. If this was a mistake, type N* RETURN *and the program will exit without erasing the CD.*
- Calculating space requirements:
  AMOS partition requires 16165 sectors
  Filler requires 38127 sectors
  Calculated starting AMOS sector is 251608
  This shows information about where data will be recorded on the CD and how much space it consumes.
- CD-Recorder located at SCSI id n
  This shows the SCSI id of the CD-Recorder being used.
- Completely erase entire CD
  MAKACD will erase all data from the rewritable CD. This writes to the entire CD and can take 30 minutes or longer.
- DSK0: 64660 blocks. Transfer rate: 1273K per second - ok
  The disk transfer rates are being tested.
- Erase last session on CD
  MAKACD will erase the last session on the rewritable CD. This overwrites the entire last session on the CD and can take 30 minutes or longer, depending on the size of the session.
- not calculated - disk is too small.
  The specified disk is too small for speed testing. The disk will be copied to the CD.
- Note that once started, the recording operation can be stopped by pressing ^C which will render the CD-R disk unusable.

  Warning: The CD-Recorder must receive data constantly. Other users on the system could delay data transfers and render the CD-R disk unusable.

- Press RETURN to start recording or ^C to abort.
  This is the final prompt before recording begins. You may abort by pressing control-C or start the recording process by pressing RETURN.
- NOTE: Disk will be recorded as a multi-session recording

Disk currently has nnnnn free sectors
CD contains tracks 1 through 10

If the CDR media is not blank, this message shows how much space is available and what CDR tracks are currently recorded. Recording new information on this CDR will make the previously recorded data inaccessible by the ACD program.

- NOTE: Writing in TEST mode.

  This message is shown if the /TEST or /TESTFIRST switches are included in the command line.
- OK for 2x recording.

  The disk is too slow for 4 speed recording so 2 speed recording will be used for the entire CD.
- Quick erase CD

  MAKACD will erase just enough information to make the rewritable CD look like a blank CD. This normally takes less than 5 minutes to complete. Do not use this switch if the rewritable CD contains more than one session.
- This operation may take over 30 minutes to complete

  This just warns that the erase operation requested will take a long time to complete. Nothing will be shown on the terminal screen until the erase operation completes.
- Transferring DSK0:in test mode

  Test mode does everything but turn on the recording laser.
- Using Generic SCSI-MMC CDR driver (CDRMMC)

  This message shows the CDR driver name and description being used.
- Waiting for CD-recorder to finish writing...Completed.

  The memory data buffers and the CD-Recorder's cache buffers are being recorded on the CDR media.
- Writing filler...

  This message is shown if filler is required before recording the AlphaCD special sector.
- Writing Table Of Contents...

  All data has been recorded and the Table of Contents is being recorded on the CDR media.
- nn% complete buffer nn%

  This message shows percentage of the recording process already completed and how full the CD-recorder's cache buffer is. This message appears on the terminal's status line.

MAKBD

FUNCTION

Copies one or more AMOS logical disks to a recordable DVD-RAM or Blu-ray disc (BD-RE) in a supported DVD-RAM or Blu-ray drive. DVDs and BD-REs created with MAKBD can be used for system backups. DVDs and BD-REs created with MAKBD can be easily read with the DIRBD or BDRES programs.

AlphaDVD is NOT compatible with AlphaDBD. AlphaDVD supports DVD-RAM media backups. AlphaDBD supports DVD-RAM and BD-RE media. The two packages have different formats. AlphaDVD copies an entire logical, but AlphaDBD copies only used logical blocks. AlphaDVD can not read AlphaDBD media and AlphaDBD cannot read AlphaDVD media.

CHARACTERISTICS

MAKBD copies used blocks from logical AMOS disk drives onto a DVD or BD-RE in a format that is compatible with the DBD program. A DVD can contain up to approximately 4.7 gigabytes of data, and a BD-RE contains up to 23 gigabytes of data. MAKBD creates a drive structure on the DVD or BD-RE that is supported by the DBD program. Only used blocks are copied to the DVD-RAM or BD-RE media. DVD-RAM or BD-RE media may be reused.

MAKBD will start recording at the beginning of the DVD or BD-RE and use only as much space as required to hold the used data blocks.

MAKBD uses the available user memory for data buffers in order to continue supplying data to the DVD-RAM or Blu-ray drive while other system or multi-user activity occurs.

FORMAT

```
MAKBD {switches}
```

OPTIONS

/HELP	Display the available options and exits
/?	Same as /HELP
/V	Display version information and exits
/COUNT:n	Creates n DVDs or BD-REs containing the same data
/DEV:xxx:	Uses device and driver named xxx: instead of the default DBD:

/EJECT Ejects the DVD or BD-RE in the drive

/ID:n Uses the DVD-RAM or Blu-ray drive at SCSI ID n instead of scanning the SCSI bus to find a DVD-RAM or Blu-ray drive. The ID can be from 0 to 15.

/NOEJECT The DVD or BD-RE media will not be ejected from the drive.

/PIC Displays the Product Installation Code

/VERBOSE Display additional error messages.

MAKBD with no switches will create a DVD or BD-RE using the DBD: device found by scanning the SCSI bus.

OPERATION

✋ MAKBD works best on a job with 132 columns set as the terminal width.

Before starting the program, place a DVD-RAM or BD-RE media in the drive.

✋ Copying logical disks that are being updated by other users to the DVD-RAM or Blu-ray drive can result in DVD-RAMs or BD-REs containing incorrect or incomplete data.

Type MAKBD from the AMOS prompt:

```
MAKBD RETURN
```

MAKBD will attempt to find a DVD-RAM or Blu-ray drive that is compatible with the DVD-RAM or Blu-ray driver being used. The driver must have the name DBD.DVR and be loaded in system memory. MAKBD will find the DVD-RAM or Blu-ray drive either using the command line switches /DEV and /ID or by defaulting to DBD: if /DEV is not specified and by scanning the SCSI bus if /ID is not specified. If more than one DVD-RAM or Blu-ray type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for recording.

After entering the MAKBD command, the following will be displayed:

```
MAKBD Version X.X(xxx) - Copyright 2007, Alpha Microsystems

Initializing SCSI DVD-RAM or Blu-ray Recorder...
```

If MAKBD finds multiple DVD-RAM or Blu-ray drives, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible DVD-RAM or BD-RE Recorders:

      ID  Description
1     nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
```

```
2   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx

Select one of the above devices:
```

Additional information about the DVD-RAM or Blu-ray drive, driver, and media is then displayed:

```
Using Generic SCSI DVD-RAM or BD-RE driver (DVDBD).
DVD-RAM or BD-RE Recorder located at SCSI id 4
```

MAKBD then asks for an optional title for the DVD or Blu-ray drive. The title may be up to 60 characters long.

```
You may enter an optional title for the DVD or press RETURN for
none.
Title: END OF MONTH BACKUP...
```

Next MAKBD asks for the AMOS logical drives to copy to the DVD or BD-RE, as follows:

```
Enter list of disk devices to transfer onto the DVD or Blu-ray
media.  Devices may be entered as a range (e.g.: DEV0: -20 for
DEV0: thru DEV20:), or may be comma separated, The list is
terminated with a blank line:
```

*

Enter the logical drives to be copied and then just a [return] when all desired drives have been entered.

```
*REX0: -15
*


           L ---------B--L--O--C--K--S---------  --BITMAP--
 #   ITEM  T --Total---  ---Used--- ---Free----  --words---
  1 REX00: E     307200.      20928.     286272.      19200.
  2 REX01: E     307200.     216928.      90272.      19200.
  3 REX02: E     307200.       2617.     304583.      19200.
  4 REX03: E     307200.      36155.     271045.      19200.
  5 REX04: E     307200.      63972.     243228.      19200.
  6 REX05: E     307200.       7085.     300115.      19200.
  7 REX06: E     307200.      57016.     250184.      19200.
  8 REX07: E     307200.      17996.     289204.      19200.
  9 REX08: E     307200.      40664.     266536.      19200.
 10 REX09: E     307200.       8072.     299128.      19200.
 11 REX10: E     307200.      32551.     274649.      19200.
 12 REX11: E     307200.       3804.     303396.      19200.
 13 REX12: E     307200.      84153.     223047.      19200.
 14 REX13: E     307200.      19063.     288137.      19200.
 15 REX14: E     307200.      52946.     254254.      19200.
 16 REX15: E     307200.     241467.      65733.      19200.
TOTAL:          4915200.     905417.    4009783.
(megabytes)        2400.000     442.098    1957.901
(gigabytes)           2.3438      0.4317      1.9120
```

MAKBD then displays information about how much space is required on the media and where recording will start.

```
Calculating space requirements:
        AMOS partition requires 226354 sectors.  (442.098 Mb)
        Media sectors available = 2462959
        2236605 unused sectors remain.  (4368.369 Mb)
```

MAKBD then gives you the opportunity to abort or to start the recording process.

```
Note that once started, the recording operation can be stopped
by pressing ^C.

Press RETURN to start recording or ^C to abort.
```

The recording process then begins. As it progresses, status messages are displayed:

```
Transferring REX000:      20928 used blocks   1 of 16
Transferring REX001:     216928 used blocks   2 of 16
Transferring REX002:       2617 used blocks   3 of 16
Transferring REX003:      36155 used blocks   4 of 16
Transferring REX004:      63972 used blocks   5 of 16
Transferring REX005:       7085 used blocks   6 of 16
Transferring REX006:      57016 used blocks   7 of 16
Transferring REX007:      17996 used blocks   8 of 16
Transferring REX008:      40664 used blocks   9 of 16
Transferring REX009:       8072 used blocks  10 of 16
Transferring REX010:      32551 used blocks  11 of 16
Transferring REX011:       3804 used blocks  12 of 16
Transferring REX012:      84153 used blocks  13 of 16
Transferring REX013:      19063 used blocks  14 of 16
Transferring REX014:      52946 used blocks  15 of 16
Transferring REX015:     241467 used blocks  16 of 16
Waiting for DVD-recorder to finish writing...Completed.
```

Also the following information is displayed on the status line:

> The percentage complete shows how much of the current logical’s used blocks has been written to the DVD-RAM or Blu-ray media.

When all data has been written to the DVD-RAM, the following message is shown:

```
AlphaDBD creation complete.
```

And then the DVD-RAM or BD-RE is ready to use.

REQUIREMENTS AND SETUP

DBD requires the following:

- AM-8000, Eagle 800, or AMPC 7.x system
- A fully interrupt-enabled SCSI dispatcher.
- AMOS 8.1(102)-2 or later.
- A supported DVD-RAM or Blu-ray drive.

The DBD package contains the following required files:

- DBD.LIT

- The device driver (DBD.DVR) for the DVD-RAM or Blu-ray drive, in system memory.
- The SSD overlay file (DVD000.OVR)
- MAKBD.LIT
- DIRBD.LIT
- BDRES.LIT

MODIFYING THE SYSTEM INITIALIZATION FILE:

You must load the device driver into system memory during system initialization by adding the following statement in your system initialization file:

```
SYSTEM DSK0:DBD.DVR[1,6]
```

This statement should be added in the same area of the system initialization file that is currently loading other system device drivers.

MESSAGES

Command line syntax messages:

- Invalid switch
- Invalid switch option

System requirements messages:

- If your memory partition is too small for MAKBD, the following message will display:
  %Error - Memory requirements have not been met. CODE: N.
  - Minimum memory to run MAKBD.LIT is 430 KB (449,320 bytes)

DVD-RAM or Blu-ray Recorder device or driver messages:

- Device specified is not a DVD-RAM or Blu-ray Recorder.
- Unable to find a DVD or Blu-ray Recorder.

Error messages when setting up or writing to the DVD Recorder

- Error - Buffer not initialized.
- Error - Device is already in use.
  This indicates that either another user is running the MAKBD program or the DBD is being used in shared read/write mode.
- Error - Disk in DVD-Recorder is not writeable.
- Error - DVD-RAM driver must be in system memory.
- Error - Total data requirements exceed DVD capacity.
- Error - Unable to load DVD media.
  This indicates a hardware problem with the DVD-RAM drive or a problem with the DVD media.

- Error - Unable to open DVD recording session.
  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to open for recording.
  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to read disk information from media.
  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to write to the DVD.
  A device error has occurred while attempting to record data on the DVD.
- Fatal SCSI error. Sense key=nn additional sense=nn
  DVD drive device error has occurred. Sense key and additional sense provide further error information.
- Please insert a DVD-RAM media
- SCSI error - xxxxxxxxx
  [sense error message] Code= nn.nn
  DVD-RAM drive device error has occurred. Code provides additional SCSI error sense information.
- Warning - Maximum number of devices exceeded - extras ignored.
- Warning - Unable to close DVD.
  Device error occurred while closing the current DVD. The DVD-RAM may or may not be usable.

Errors concerning the AMOS DVD data structure:

- Error - Disk geometry calculation was incorrect.
  The AMOS hidden sector parameters calculated are invalid.
- Error - memory previously calculated as available isn't
  Memory required for data buffers has increased, bump your memory partition.
- Error - No devices specified.
  User did not specify any AMOS logical disks to be copied to the CD.
- Error - unable to get AMOS data buffer
  The system was unable to acquire memory for data buffers.
- Error- Unable to remove DVD Recorder data buffer from memory.
- Unable to continue due to one or more errors shown above.
  Testing of logical disk drive transfer rates resulted in the errors listed above.

Normal informational messages:

- AlphaDBD creation complete
  The recording of data on the DVD media is done.
- Calculating space requirements:
  AMOS partition requires 16165 sectors
  Media sectors available = 2236703
  2220538 unused sectors remain.
  This shows information about how much space the data consumes on the DVD and how much empty space remains.
- DVD-RAM Recorder located at SCSI id n
  This shows the SCSI id of the DVD-RAM Drive being used.
- Note that once started, the recording operation can be stopped by pressing ^C.

- Press RETURN to start recording or ^C to abort.

  This is the final prompt before recording begins. You may abort by pressing control-C or start the recording process by pressing RETURN.
- Transferring DSK0:
- Using Generic SCSI DVD-RAM and BD-RE driver (DVDBD)

  This message shows the DVD driver name and description being used.
- Waiting for DVD-Recorder to finish writing...Completed.

  The memory data buffers and the DVD-RAM Drive's cache buffers are being recorded on the DVD media.
- nn% complete

  This message shows percentage of the recording process completed for the current logical. This message appears on the terminal's status line.

MAKDVD

FUNCTION

Copies one or more AMOS logical disks to a recordable DVD-RAM media in a supported DVD-RAM-drive. DVDs created with MAKDVD can be used for software distribution or for system backups. DVDs created with MAKDVD can be easily read or written after mounting the DVD with the DVD program.

CHARACTERISTICS

MAKDVD copies logical AMOS disk drives onto a DVD in a format that is compatible with the Alpha Micro DVD program. A DVD can contain up to approximately 4.7 gigabytes of data. MAKDVD creates a logical drive structure on the DVD media such that each logical drive is equal in size to the largest logical disk drive copied. If logical drives of differing sizes are specified, the smaller drives will be padded on the DVD to equal to the largest logical size copied. Only entire logical drives, including unused areas, can be copied to the DVD. DVD-ram media may be erased, reused, and modified.

If logical drives of differing sizes are specified, the smaller logicals that have been padded on the DVD media will not be randomly writeable later when using the DVD program. However, all logical units on the DVD can be randomly read when using the DVD program.

MAKDVD will start recording at the beginning of the DVD and use only as much space as required to hold the desired data.

MAKDVD uses the available user memory for data buffers in order to continue supplying data to the DVD-RAM-drive while other system or multi-user activity occurs.

FORMAT

```
MAKDVD {switches}
```

OPTIONS

/HELP Display the available options and exits

/? Same as /HELP

/V Display version information and exits

/COUNT:n Creates n DVDs containing the same data

/DEV:xxx: Uses device and driver named xxx: instead of the default DVD:

/EJECT Ejects the DVD in the drive and exits

/ID:n Uses the DVD-RAM Drive at SCSI ID n instead of scanning the SCSI bus to find a DVD-RAM Drive. The ID can be from 0 to 15.

/NOEJECT The DVD media will not be ejected from the drive.

/PIC Displays the Product Installation Code

/VERBOSE Display additional error messages.
/VERIFY Set hardware read after write verification.

MAKDVD with no switches will create a DVD, using the DVD: device found by scanning the SCSI bus.

OPERATION

Before starting the program, place a DVD media in the DVD-RAM drive.

Copying logical disks that are being updated by other users to the DVD-RAM drive can result in DVDs containing incorrect or incomplete data.

Type MAKDVD from the AMOS prompt:

```
MAKDVD RETURN
```

MAKDVD will attempt to find a DVD-RAM drive that is compatible with the DVD-RAM driver being used. The driver must have the same name as the DVD-drive device name and be loaded in system memory. MAKDVD will find the DVD-RAM drive either using the command line switches /DEV and /ID or by defaulting to DVD: if /DEV is not specified and by scanning the SCSI bus if /ID is not specified. If more than one DVD-RAM type device is found when scanning the SCSI bus, you will be asked to choose the device you wish to use for recording.

After entering the MAKDVD command, the following will be displayed:

```
      MAKDVD Version X.X(xxx) - Copyright (C) 2001 Alpha Micro Products
      Inc.

      Initializing SCSI DVD-RAM-Recorder...
```

If MAKDVD finds multiple possible DVD-RAM drives while scanning the SCSI bus, the following message will be displayed to allow you to select the drive to use:

```
Found the following possible DVD-Recorders:

          ID  Description
      1   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx
      2   nn  xxxxxxxxxxxxxxxxxxxxxxxxxxx

      Select one of the above devices:
```

Additional information about the DVD-RAM drive, driver, and media is then displayed:

```
      Using Generic SCSI-DVD-RAM driver (DVDRAM)
      DVD-RAM-Recorder located at SCSI id 3
```

MAKDVD then asks for an optional title for the DVD. The title may be up to 60 characters long.

```
      You may enter an optional title for the DVD or press RETURN for
      none.
      Title:
```

Next MAKDVD asks for the AMOS logical drives to copy to the DVD, as follows:

```
      Enter the list of disk devices to transfer onto the DVD media.
      Devices may be entered as a range (ex. dev0: -20 for dev0: through
      dev20:), or may be comma separated, The list is terminated with a
      blank line:

*
Enter the logical drives to be copied and then just a [return] when all
desired drives have been entered.

      *DSK0:
      *DSK6:
      *

      DSK0: 64660 blocks.
      DSK6: 64660 blocks.
```

MAKDVD then displays information about how much space is required on the CD and where recording will start.

```
      Calculating space requirements:
              AMOS partition requires 16165 sectors
              2220538 unused sectors remain
```

MAKDVD then gives you the opportunity to abort or to start the recording process.

```
Note that once started, the recording operation can be stopped by
pressing ^C.


Press RETURN to start recording or ^C to abort.
```

The recording process then begins. As it progresses, status messages are displayed:

```
Transferring DSK0:
Transferring DSK6:
Waiting for DVD-Recorder to finish writing...Completed.
```

Also the following information is displayed on the status line:

```
 20% complete
```

The percentage complete shows how much of the total amount of data has been written to the DVD-RAM.

When all data has been written to the DVD-RAM, the following message is shown:

```
AlphaDVD creation complete.
```

And then the DVD is ready to use.

REQUIREMENTS AND SETUP

MAKDVD requires the following:

- A 68030 or faster processor
- A full interrupt enabled SCSI dispatcher.
- DCACHE, with the number of read-ahead blocks set to 7 for best performance
- AMOS 2.3A or later.
- A supported DVD-RAM drive.

The MAKDVD package contains the following required files:

- MAKDVD.LIT
- The device driver for the DVD-RAM drive.
- The DVD.DEV file that contains supported DVD-RAM drive information.
- The SSD overlay file (DVD000.OVR)

MODIFYING THE SYSTEM INITIALIZATION FILE:

See the software installation instructions in PDI-00403-00 for software installation information.

MESSAGES

Command line syntax messages:

- Invalid switch
- Invalid switch option

System requirements messages:

- MAKDVD requires a 68030 or higher CPU.
- MAKDVD requires a full interrupt level dispatcher.
- MAKDVD requires a SCSI dispatcher.
- MAKDVD requires AMOS 2.x or compatible operating system.
- Memory partition is too small for MAKDVD. An additional nnnK of memory is required.

DVD-RAM Recorder device or driver messages:

- Device specified is not a DVD-RAM Recorder.
- This DVD-RAM Recorder requires a different driver.
  The current driver is: xxxxxx
  The required driver is: xxxxxx

  The device and driver selected are inappropriate for the physical DVD-RAM drive.
- Unable to find a DVD-Recorder.
- Unknown DVD-Recorder!
  Error - Unsupported DVD-Recorder drive found.

  The DVD-RAM Recorder is not supported by MAKDVD.

Error messages when setting up or writing to the DVD Recorder

- Error - Buffer not initialized.
- Error - Device is already in use.

  This indicates that either another user is running the MAKDVD program or the DVD is being used in shared read/write mode.
- Error - Disk in DVD-Recorder is not writeable.
- Error - DVDram driver must be in system memory.
- Error - Total data requirements exceed DVD capacity.
- Error - Unable to load DVD media.

  This indicates a hardware problem with the DVD-RAM drive or a problem with the DVD media.
- Error - Unable to open DVD recording session.

  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to open for recording.

  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to read disk information from media.

  Try a different DVD media. This can also indicate a possible DVD-RAM drive problem.
- Error - Unable to write to the DVD.

A device error has occurred while attempting to record data on the DVD.

- Fatal SCSI error. Sense key=nn additional sense=nn
  DVD drive device error has occurred. Sense key and additional sense provide further error information.
- Please insert a DVD-RAM media
- SCSI error - xxxxxxxxx
  [sense error message] Code= nn.nn
  DVD-RAM drive device error has occurred. Code provides additional SCSI error sense information.
- Warning - Maximum number of devices exceeded - extras ignored.
- Warning - Unable to close DVD.
  Device error occurred while closing the current DVD. The DVD-RAM may or may not be usable.

Errors concerning the AMOS DVD data structure:

- The DVD logical unit size is greater than 64K blocks which could mean compatibility problems on AMOS 1.X systems. Press RETURN to continue, or ^C to abort MAKDVD:
  The logical disk size on the DVD will be greater than the maximum size of a traditional logical drive.
- Error - Disk geometry calculation was incorrect.
  The AMOS hidden sector parameters calculated are invalid.
- Error - memory previously calculated as available isn't
  Memory required for data buffers has disappeared.
- Error - No devices specified.
  User did not specify any AMOS logical disks to be copied to the CD.
- Error - Unable to calculate AMOS disk geometry.
  The AMOS hidden sector parameters could not be calculated.
- Error - unable to get AMOS data buffer
  The system was unable to acquire memory for data buffers.
- Error- Unable to remove DVD Recorder data buffer from memory.
- Unable to continue due to one or more errors shown above.
  Testing of logical disk drive transfer rates resulted in the errors listed above.

Normal informational messages:

- AlphaDVD creation complete
  The recording of data on the DVD media is done.
- Calculating space requirements:
  AMOS partition requires 16165 sectors
  2220538 unused sectors remain.
  This shows information about how much space the data consumes on the DVD and how much empty space remains.
- DVD-RAM Recorder located at SCSI id n
  This shows the SCSI id of the DVD-RAM Drive being used.
- Note that once started, the recording operation can be stopped by pressing ^C.

- Press RETURN to start recording or ^C to abort.

This is the final prompt before recording begins. You may abort by pressing control-C or start the recording process by pressing RETURN.

- Transferring DSK0:
- Using Generic SCSI-DVD-RAM driver (DVDRAM)

  This message shows the DVD driver name and description being used.
- Using Panasonic DVD-RAM driver (DVDPAN)
- Waiting for DVD-Recorder to finish writing...Completed.

  The memory data buffers and the DVD-RAM Drive's cache buffers are being recorded on the DVD media.
- nn% complete

  This message shows percentage of the recording process already completed. This message appears on the terminal's status line.

MAKE

FUNCTION

Creates a sequential file by making an entry in your User File Directory and creating an empty disk record for it.

CHARACTERISTICS

MAKE is re-entrant and re-usable.

FORMAT

```
MAKE filespec{,size}
```

filespec specifies the new file, and ***size*** is the number of bytes for the file. The size can be any positive number (use caution with very large numbers or you may use up too much disk space).

DEFAULTS

The default device and account are where you are logged. The default extension is .M68, and the size is 0 bytes.

OPERATION

Enter MAKE followed by the specification of the file you want to create, and (optionally) a size in bytes. For example:

```
MAKE SRCFIL.BAS,1000 RETURN
```

You can use DIR to verify the file was created.

MESSAGES

?File specification error

Check your spelling and syntax, and try again.

?Command error

You did not specify a valid size, or you left out the comma in the command line. Check your syntax and try again.

MAKQUE

FUNCTION

Creates a queue file for use with the Task Manager. Creates both batch queues and print spooler queues.

CHARACTERISTICS

MAKQUE is re-entrant and re-usable. MAKQUE creates batch queue files inside the account you are logged into. Therefore, if you wish to submit tasks to that queue from more than one account, you must create it in account [1,4]. Otherwise, the queue is only available to run tasks if you are logged into the specific account where the queue file was created. We recommend you allocate 100 records for BATCH queue files. This is usually enough space in which to schedule tasks, and it does not take up much disk space. If you schedule a great number of tasks, allocate more records.

MAKQUE creates only one spool file: DSK0:SPLQUE.SYS[1,4]. You can use MAKQUE to re-create the file if you need to change its parameters. Spool queue files handle one file per record—set up as many records as you need to handle your usual load of printer requests. For example, if you allocate 20 records to SPLQUE.SYS, it will be able to handle 20 print requests at a time.

For information on the Task Manager, see your *Task Manager User's Manual.* For information on the Print Spooler, see your *System Operator's Guide.*

OPERATION

Enter MAKQUE at AMOS command level:

```
MAKQUE RETURN
```

MAKQUE asks you what type of queue file you want, Batch (B) or Spooler (S). Enter the letter for the type of queue file you would like to create.

Then you are asked for the name of the queue file (this question won’t display if you are creating the spool queue). The program assumes an extension of .SYS. You must specify a name for the queue, or you will get a file specification error.

MAKQUE then asks for the number of queue records to be allocated. Your response defines the size of the queue and how many tasks it can handle, or how many files the printer queue can have in it. For example, if you specify 100 records, the Task Manager would be able to schedule about 100 tasks. This number also controls the sequence rotation. The sequence numbers in this case would increment to 100 before starting again at 1. If you do not enter an allocation number, MAKQUE prompts you again.

MESSAGES

?Cannot delete [filename] - file in use

A problem was encountered while processing the queue file; usually a disk block could not be read from or written to. Contact your System Operator.

??Fatal Error - RES:QFLOCK.SYS not found.
?File error during queue file initialization.

You did not provide enough queue blocks. Run MAKQUE again, and increase the number of queue blocks you specified.

?File specification error

You did not provide a correct name for the queue file you wanted to create. Run MAKQUE again and enter a correct filename.

MAP

FUNCTION

Allows you to see what modules are in your memory partition and in system memory. Also provides information about those memory modules.

CHARACTERISTICS

MAP is re-entrant and re-usable. You may not use MAP to see information about memory modules in other users' partitions.

When you load disk files into your memory partition, those copies in memory are called memory modules. A memory module retains the same name and extension as its corresponding disk file.

MAP displays memory addresses in the number base the system is using for your numeric displays (usually octal). If you want MAP to display these memory addresses as hexadecimal numbers, make sure the HEX option is in effect before using MAP. For information on changing the number base the system uses for your numeric displays, see the SET reference sheet.

FORMAT

```
MAP {filespec}{/switch(s)}
```

filespec selects the memory module about which you want information. A ***switch*** selects various options.

DEFAULTS

If you do not specify a filespec, MAP assumes you want information on all of the memory modules in your partition. If you do not specify any switches, MAP assumes you want full information on the memory module(s) you specified. **Specifying any one switch cancels all the defaults.**

OPTIONS

MAP assumes each character after the slash is a separate switch. The switches are:

/B	Display octal base memory address for each module.
/F	Display number of free memory bytes available (in decimal). Use with /S.
/H	Display hash totals for each memory module.
/M	Display information about modules.
/R	Display information about modules in RES:.
/S	Display number of bytes (in decimal) of each module.
/U	Display information about modules in MEM:.

OPERATION

To see what modules are in your memory partition, enter MAP. You see a list of the memory modules currently in your partition. Here is a sample line:

```
CHECK   LIT   1016   35022   513-543-124-555
  |      |     |       |           |
  |      |     |       |           Hash total
  |      |     |       |
  |      |     |       Base address (where module begins)
  |      |     |
  |      |     Size (in decimal bytes)
  |      |
  |      Extension
  |
  Module name
```

The hash total is an identifying code unique to that module. The last line of the display tells you how many bytes are free in your memory partition and gives the octal memory address of the first free memory location.

To see information about a particular memory module, include a filespec on the MAP command line. For example:

```
MAP LOG RETURN
LOG   LIT  1016  30522   432-672-122-411
```

To see information about modules in system memory, enter:

```
MAP/RSHMF RETURN
TRM    DVR    252    552-107-745-717
```

MEMORY

FUNCTION

Allocates memory to your job or displays the size of your memory partition.

CHARACTERISTICS

MEMORY is re-entrant and re-usable. You can't increase your memory allocation if other users on the system have already been allocated the rest of memory. If there is not enough free memory to fill your entire request, MEMORY allocates as much memory as it can.

If you try to allocate a very small, non-zero amount of memory to your job, you may not have room to load and execute programs or files—you may not even have enough memory to load the MEMORY command back into your partition to change that allocation. So, be careful to check your MEMORY command line to make sure you have made no mistakes. Also, be careful when attaching your terminal to another job—make sure the job has some memory allocated to it, or you will run into the same kind of problem.

FORMAT

```
MEMORY {memory-allocation{K}{M}}
```

memory-allocation is the amount of memory (in bytes) you want to allocate to your job. If you include a ***K*** after the amount, MEMORY will multiply the amount specified by 1024 (1 Kilobyte). If you include an ***M*** after the amount, MEMORY will multiply the amount by 1048576 (1 Megabyte). If you use both K and M on the same command line, MEMORY will use whichever comes first, and ignore the other.

OPERATION

To see how much memory has been allocated to your job, enter MEMORY at AMOS command level. For example:

```
MEMORY RETURN
Current memory is 231148 bytes
```

To allocate memory to your job, enter MEMORY followed by the amount of memory you want to allocate to yourself. For example:

```
MEMORY 32K RETURN
[32768 bytes assigned]
```

You may not increase your memory allocation beyond its current amount unless you first use the MEMORY 0 command. If you allocate MEMORY 0 to your job, AMOS will re-assign as much free memory to you as it has available for user partitions as soon as you run a command or program.

MESSAGES

?Insufficient memory for program load

The memory assigned to your job is not enough to load the program you tried to run. If you have enough memory to run MEMORY, try to add more memory to your job. If you do not have enough memory to run MEMORY, you will have to re-boot your system.

?The MEMORY command may not be used within a spawned job

You cannot use MEMORY within a job created (spawned) by another program—for example, within a "window" created by MULTI. You will have to get your terminal out of the spawned job situation before you can use MEMORY.

MENU

FUNCTION

Works on AlphaMENU menu-definition files to produce executable menus.

CHARACTERISTICS

MENU is re-entrant and re-usable. **You must have at least 32K of memory in your memory partition to use MENU**. Compiles only the .MNU file—does not compile or include query or help files. These are searched for separately when needed by the .CMN file. Don't use MENU on already-compiled files. Compiled menus have a .CMN extension. See your *AlphaMENU User's Manual* for more information.

FORMAT

```
MENU filespec
```

filespec is the file containing the menu definition code. The default file extension is .MNU. The default device and account specifications are where you are logged.

OPERATION

Enter MENU and the file containing the menu definition for the menu you wish to compile. For example:

```
MENU MYMENU RETURN
```

When MENU finishes compiling the Menu file, a message tells you if any errors were detected and whether the menu file was completed.

If your file compiled without errors, a menu file is created in the account you are logged into with the filename of your menu and the extension .CMN. To call the menu, use the SHELL command. For example:

```
SHELL MYMENU RETURN
```

Account DSK0:[7,11] is the menu library account—if you place a menu in this account, it can be called from any account on the system. See the SHELL reference sheet for more information about using menus.

MESSAGES

?Syntax error - [number] errors detected

Your .MNU file has an error—check the file and correct it, then try again.

?Out of memory

Increase the free memory in your job's partition before trying again.

MFDSEQ

FUNCTION

Sorts the accounts within a "traditional" logical disk unit into ascending order.

CHARACTERISTICS

MFDSEQ is re-entrant and re-usable. Used primarily as a tool for producing floppy disks on an AMOS 2.0 or later system which can be read on a pre-2.0 version of AMOS.

MFDSEQ does not work on extended disks. You cannot run MFDSEQ on a remote disk across a network.

Do NOT use MFDSEQ while other jobs are accessing the logical disk you are sequencing!

FORMAT

```
MFDSEQ devn:
```

devn: specifies the logical unit you want to arrange.

OPERATION

Enter MFDSEQ and the logical unit. For example:

```
MFDSEQ DSK1: RETURN
```

MFDSEQ puts the directories of the logical device in ascending order.

An appropriate use of MFDSEQ is to copy one or more files to a floppy disk which has been SYSACTed as a traditional format disk from either an extended or traditional logical unit (that is in AMOS 2.0 or later format), and then run MFDSEQ on the floppy disk. The floppy can then be read by a pre-2.0 AMOS system. For example:

```
LOG OPR: RETURN
MOUNT FLP0: RETURN
COPY FLP0:=DSK1:[2,2]*.FIL,DSK1:[1,4]*.FIL RETURN
MFDSEQ FLP0: RETURN
MOUNT FLP0:/U RETURN
```

MESSAGES

?Program for Traditionally Formatted Disks Only - Cannot Continue!

You cannot run MFDSEQ on this disk.

?No PPNs found on this Traditional Logical - Cannot Continue

No disk accounts have been allocated on this logical device, so there are no entries to sort.

MK

FUNCTION

Provides a method of compiling and linking a group of files on extended directory disks so only the files that have been recently changed are actually assembled.

CHARACTERISTICS

MK is re-entrant and re-usable. MK is a tool that helps you automate the re-compilation and/or re-linking of program modules in an application when one or more of the modules has been modified.

Because MK compares the file's last modification date and time to decide whether it should rebuild the file, the file should reside on an extended directory format device. If a file is on a traditional directory, it is considered as very old, defeating the update detection and forcing the file to be recompiled.

MK assumes you provide a description of the structure of your application in a file called a ***makefile***. The ***makefile*** provides information about the modules that make up the application—the modules that should result from a re-build (***target-files***), lists of other modules the ***target-files*** depend on, and the command(s) to be issued to get new ***target-files***. This is done by entering ***dependency lines*** and ***command lines*** in the ***makefile***. For example:

```
ACOUNT.LIT < CREDIT.OBJ DEBIT.OBJ INTRST.OBJ
    TAB    GLC ACOUNT
```

In this example, ACOUNT.LIT is the ***target-file*** monitored by MK. Each time MK is invoked, it compares the modification date and time of ACOUNT.LIT to those of CREDIT.OBJ, DEBIT.OBJ, and INTRST.OBJ. If any of those files have been modified more recently than ACOUNT.LIT, the ***command-line*** (GLC ACOUNT) is issued to AMOS, which should produce a new version of ACOUNT.LIT.

The process can be a lot more complex, and the ***makefile*** can have more than one ***target-file***. Some dependencies may appear in many places also. There can only be one ***target-file*** per dependency line.

To ease the creation of a ***makefile***, the ***macro*** and ***rule*** facilities are included. ***Macro*** is a kind of shorthand for items that occur in many different places. A macro is defined either in the ***makefile*** or in the MK command line. It can then be used either to reproduce its definition text at different places or with some part of its original text replaced by text specified when it is invoked.

A macro line defines the text of a macro. Macros may not be nested. Macro lines have the format:

```
name = text
```

name is any alphanumeric symbol and ***text*** is anything not containing a $ sign. Spaces and tabs before and after the text are removed. A macro is invoked by:

```
$(macro-name{{:txt1=}txt2})
```

If the invoked macro is not defined, it is ignored.

If ***txt1*** is not specified, the macro invocation is replaced by the text of the macro itself. Since macros can be redefined, the current text is used.

If ***txt1*** is specified, the current text of the macro is processed and all occurrences of ***txt1*** are replaced by ***txt2***.

If macros are defined in the command line, attempts to redefine them are ignored.

Here's an example of a macro:

```
SWITCHES = /D/A/V

x.obj < x.c ...
   TAB     cc x $(SWITCHES)
```

The ***rule*** facility is a way to give a default way to build a module if it is not specified as a ***target-file*** in the ***makefile***. Rules define an action to take by default if no explicit command is given for a file. The format is:

```
.ext1.ext2:
```

ext1 and ***ext2*** are AMOS file extensions. A rule line should be followed by one or more command lines. If there is no explicit description on how to build a specific file, all the rules are examined to see if one could be applied in order to build the file. The first extension is the one of the source and the second the one of the target file.

If different rules exist to build the same target, they are examined in order, and the first one which works is considered as fulfilling the search. For example, if both a .C.OBJ rule and a .M68.OBJ rule exist, they should be defined in that order for the C file to be compiled, otherwise the .M68 file would be considered as the source of the target. If the .M68.OBJ rule is defined first, a new .OBJ file is created if the .M68 file is compiled, and therefore the .C program won't be compiled.

Here's an example of a rule:

```
.m68.obj
   TAB    m68 $*/n
```

This specifies that for any .OBJ module not defined as a ***target-file*** in a ***dependency line***, an attempt is made to rebuild it using M68 with the /N switch ($* is a special macro that indicates the filename without the extension).

A dependency line describes what files trigger the re-creation of the target file if they are modified. The format is:

```
target < {filename(s)}
```

target is the name of the file that should be made and the ***filename(s)*** is a list of file the target depends on. If any of the ***filenames*** is more recent than the target, the commands that should follow the dependency line are executed and their result should be to produce a new target file. ***Target*** can also have a name starting with a period (.). In that case, it is considered as a pseudo-target—a file that does not actually exist. Also, the list of dependents should be empty in this case. The use of pseudo-targets is handy to do special functions like erasing temporary files or printing sources files.

A command line gives an AMOS command to be executed. The line must start with a TAB character to be considered a command line. It must follow either a rule or dependency line, or another command line. Macros can be invoked, and a special marker, "\n", can be used to force a carriage return-line feed pair to be inserted at a given point. In addition, in a command line related to a rule, the following macros can be used:

$*	represents the name of the target without the extension.
$@	represents the full name of the target.
$<	represents the name of the source file.

If you want to continue any logical line onto the next line of the file, end the line with a backslash (\) followed by a newline. If the following line starts with a non-blank character, it will be appended to the line with no intervening spaces. If the next line starts with one or more blanks, it will be appended with a single intervening space.

You may also put comments any place in the ***makefile***. A comment begins with the pound character (#) and continues to the end of the line.

Here is a complete example of a ***makefile***:

```
# Description file for the make command:

.c.obj:
   TAB cc$*/d/r
.m68.obj:
   TAB m68 $*/n

mk.lit < tdvcng.obj fdtser.obj allocb.obj parse.obj proces.obj mk.obj
   TAB lnklit/s mk,fdtser,allocb,parse,proces,tdvcng,cinit,syslb0/l

parse.obj < parse.c mkdefs.h mac:memory.h mac:stdio.h
   TAB cc parse/d/r

proces.obj < mk.c mac:stdio.h mac:memory.h mac:ctype.h
   TAB cc proces/d/r

mk.obj < mk.c mac:stdio.h mac:memory.h mac:ctype.h
   TAB cc md/d/mins:65535/maxs:1048575
```

The modification time of a file has a precision of a minute, so a modification to a source file done within a minute after the last update will not be detected.

FORMAT

```
MK{/switch(es)} {macro(s)}{target-file} {target-file...}
```

macros specifies macros that affect the assembly process and ***target-file*** specifies the file(s) to be made.

DEFAULTS

The default ***makefile*** is MK.MKF in your current account.

OPTIONS

/A	If no target specified, /A attempts to rebuild all targets that are not up to date.
/C{:filename}	Put commands in a command file instead of executing them.
/F:filename	Specify a different ***makefile***.
/I	Ignore errors.
/N	Don’t execute commands, but display them on screen.
/S	Don’t display anything on the screen.
/T	Change the file modification timestamp to current time without executing the commands.

OPERATION

Enter MK followed by any macros or target-files you need. For example:

```
MK STOCK.RP ORDER.RP RETURN
```

MESSAGES

?Can't allocate file table - not enough memory

Try increasing your available memory space or reducing the number of files in your makefile.

?Can't make file [filename]

Check the makefile command that tried to build the file for errors.

?Can't open file [filename]

Check your spelling and syntax, or use DIR to find the file, and try again.

?Command line macro improperly terminated

Check your syntax and try again.

?Don't know how to make file [filename]

Add a rule or dependency to your makefile.

?Duplicate target name at line # [number]

Check your makefile for an error at the indicated line number.

?Error while processing file [filename]
?Cycle detected

A target name in your makefile depends on itself. Check your dependency tree for the illegal cycle reference.

?Illegal command line macro

Check your syntax and try again.

?Illegal rule at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid line type at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid option in command line

Check your spelling and syntax and try again.

?Invalid source name at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid substitution at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid symbol at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid target name at line # [number]

Check your makefile for an error at the indicated line number.

?Invalid target name in command line

Check your spelling and syntax and try again.

?Line too long at line # [number]

Shorten the long line.

?Nested macros not supported at line # [number]

Check your makefile for an error at the indicated line number.

?Not enough memory

Your job does not have enough available memory. Unload modules from your memory partition, switch to another job with more memory, or ask your System Operator to increase your job's memory allocation.

?Too many files

Reduce the number of files referenced in your makefile.

?Unexpected end-of-file at line # [number]

Check your makefile for an error at the indicated line number.

?Unknown target name in command line

Check your spelling and syntax and try again.

?Unrelated command at line # [number]

Check your makefile for an error at the indicated line number.

MONGEN

FUNCTION

Generates a new system monitor.

CHARACTERISTICS

MONGEN is re-entrant and re-usable. The system monitor is generated by overlaying the specified disk driver program into the existing monitor. This new monitor lets you access any disk (for which you have a disk driver program) as the System Device.

The monitor you usually use is in account DSK0:[1,4], and has a name that reflects your type of system. The disk driver you will use is one of the driver programs in DSK0:[1,6]. MONGEN inserts the specified driver into the monitor (overlaying the old driver) and then leaves the new monitor in memory.

On AM-212 and AM-214 devices with AMOS release 2.2 or later, you must create a monitor using either BFLP.DVR (for 3.5" disks) or BMIN.DVR (for 5.25" disks) as the system driver in order to create a bootable floppy diskette. On AM-219 drives, use FIX219 to generate a system driver for diskettes.

DEFAULTS

The default monitor file is DSK0:AMOSL.MON[1,4]. This means you must enter the monitor name, AMOS32.MON, on AMOS/32 systems.

The default device and account specification for the disk driver is DSK0:[1,6]. The default disk driver file extension is .DVR.

OPERATION

Enter MONGEN at AMOS command level:

```
MONGEN RETURN
```

MONGEN asks for the specification of the system monitor you want to modify. Enter the file specification of the monitor program you are going to use. If you want to use the default monitor, AMOSL.MON[1,4], just press RETURN.

MONGEN locates the specified monitor and loads it into your memory partition. Be sure you have enough memory to accommodate the monitor and disk drivers as well as the MONGEN program itself (usually at least 128K of memory).

Now MONGEN asks for the specification of the disk driver you want to insert into the monitor. Enter the file specification of the correct disk driver program. You may **NOT** just press RETURN.

MONGEN looks first in system memory for the driver, then in your memory partition, then on the disk. If you have just updated a driver to use with MONGEN, be sure there isn't an older version in memory!

On systems which use CMOS boot settings, if your boot drive is not SCSI ID 0, you should use a disk driver created by FIXLOG for the correct SCSI ID. If you use a generic disk driver which doesn't have the SCSI ID embedded, you will not be able to MONTST with this monitor.

Next you are asked for the language definition table name. If you just press RETURN, MONGEN selects the default language file ENGLSH.LDF.

MONGEN then asks for a name to be given to the new monitor. Enter a one- to six-character name (the default extension is .MON). This name is now the name of the new monitor.

You can now test the new monitor by using the MONTST program or you can save the monitor as a disk file by using the SAVE command. For example:

```
SAVE TRISYS.MON RETURN
```

Remember MONGEN does not affect the running monitor either in memory or on the System Disk. Nor does MONGEN test the new monitor; it merely builds a new monitor as a module in your memory partition.

MESSAGES

?Cannot INIT [filespec] - device does not exist

Check your syntax, or use DEVTBL to see a list of current devices, and try again.

?Cannot READ [filespec] - disk not mounted

Mount the specified device and try again.

Disk driver [filespec] not found

Check your syntax—if there is no mistake, use the DIR command to search for the file—it may be in the wrong account.

Input monitor [filespec] not found

Check your syntax—if there is no mistake, use the DIR command to search for the file—it may be in the wrong account.

?System disk driver is too large

The disk driver is too large to be embedded into the monitor. Choose another, smaller, driver.

MONHSH

FUNCTION

Lets you check the hash totals of AMOS monitors, regardless of which disk driver has been inserted into the monitor by the MONGEN program.

CHARACTERISTICS

MONHSH calculates hash totals only for monitor files. It can't be used on any other type of file.

Monitor patches published by Alpha Micro include the monitor hash; after you make a monitor patch, use MONHSH to make sure the patch was made correctly. To check the version number of your monitor, use the DIR/V command.

FORMAT

```
MONHSH monitor-name
```

monitor-name is the name of the monitor file.

DEFAULTS

MONHSH assumes account [1,4] on the device you are currently logged into.

OPERATION

Enter MONHSH and the name of the monitor at AMOS command level. For example:

```
MONHSH AMOSL.MON RETURN
```

If you leave out the monitor name, MONHSH prompts you for it. When MONHSH is finished, it displays the hash total.

MESSAGES

?Cannot hash [monitorname] - [reason]

Be sure you've spelled the name correctly and that it is a monitor file.

?File specification error

Try again, and specify a correct monitor name.

MONTST

FUNCTION

Tests a new monitor and/or system initialization command file by bringing up the system under the control of a new monitor and/or command file.

CHARACTERISTICS

MONTST first looks in your memory partition for the monitor you want to test; then it looks on the disk. MONTST always looks directly on the disk for the system initialization command file you want to test.

You must be logged into the system operator's account, DSK0:[1,2], to use MONTST. **Make sure everyone is off the system when you use MONTST.**

You can also use MONTST with MONGEN to boot up on a device other than your regular System Disk. For example, say your system has more than one Winchester disk. Although you normally boot from your main Winchester disk, you could boot from the other.

To do so, use MONGEN to create a test monitor, TEST.MON, containing the driver for the second Winchester disk; place this monitor on the first logical device of your Winchester System Device. Then use MONTST to boot using that special monitor with a special system initialization command file, TEST.INI, in which the second disk has been defined as the System Device and the main Winchester device has been defined as a peripheral.

If your computer uses CMOS boot settings, and your system disk is not at SCSI ID 0, the monitor file you use to MONTST ***must*** contain a disk driver created with FIXLOG for the correct SCSI ID. If the monitor file uses an embedded generic SCSI driver, MONTST will not find the correct SCSI ID and will not work. See the MONGEN and FIXLOG reference sheets for more information.

You can also use MONTST to test warm boot files. When doing this, don't specify an .INI file.

FORMAT

```
MONTST {monitor-spec}{,system-INI-filespec}
```

monitor-spec specifies the monitor you want to test and ***system-INI-filespec*** specifies the system initialization command file you want to use. The initialization file MUST be in DSK0:[1,4] of the newly booted system. For example, if you are MONTSTing a monitor with a floppy driver MONGENed into it, the initialization file must be on DSK0: of the floppy drive.

DEFAULTS

The default monitor file is your system default monitor file (DSK0:AMOSL.MON[1,4] or DSK0:AMOS32.MON[1,4]). The default extension is .MON; the default account for the monitor is DSK0:[1,4].

MONTST assumes the default system initialization file (DSK0:AMOSL.INI[1,4] or DSK0:AMOS32.INI[1,4]) for the system-INI-filespec. The default file extension is .INI; the default account is DSK0:[1,4].

These defaults apply even for computers which use CMOS boot settings and have a different default monitor or initialization file specified in CMOS.

OPERATION

Log into account DSK0:[1,2], and enter MONTST followed by the specifications of the system monitor and the system initialization command file to bring the system up under. For example:

```
LOG OPR: RETURN
MONTST AMOSL.MON,NEWSYS.INI RETURN
```

If you want to test with the standard AMOS monitor and the standard system initialization command file enter:

```
MONTST AMOSL[1,4] RETURN
```

MESSAGES

?Cannot test filespec - file not found

Either the monitor or the initialization file cannot be found. Check your syntax and try again.

?File specification error

Check your syntax and try again.

?Filespec not found

Check your syntax, or use DIR to find the file—it may be in another account. This message can also appear if you don't have enough memory in your partition to load the monitor file—if so, run MONTST from another job, or increase the memory in your partition.

MOUNT

FUNCTION

Mounts or unmounts a disk and displays a list of all mounted disks on the system. Can mount all logical devices on a physical drive with one command.

CHARACTERISTICS

MOUNT is re-entrant and re-usable. The system has no way of knowing when you change disks in your disk drives. When you change disk cartridges in your hard disk system or change floppy disks in your floppy disk drives, you must tell the system you have done so.

✋ Floppy disk drives defined to use buffered I/O (see your *System Operator's Guide*) must be mounted immediately after a new diskette is inserted, and unmounted before it is removed. Failure to do so may result in lost or corrupted data!

Your system INI file can be set up to initially mount your disks for you every time the system comes up, but if you change a hard disk cartridge or a floppy disk, or bring up a drive after the system is up and running, you still must explicitly mount it using the MOUNT command.

✋ Do not mount or unmount a tape drive or any other device that is not file structured. Trying to do so may render your tape or device unreadable and result in partial or complete data loss.

Using MOUNT tells the system you are changing a disk or adding a new disk and the system must therefore look at the new disk to fetch the appropriate bitmap. A disk bitmap is a map of the disk; it tells the system which disk blocks are free and which are used. If the disk is a Winchester technology disk drive, MOUNT mounts and sequences up the drive for you. If you don't sequence up the drive, you cannot access the disk at all. MOUNT can also be used to sequence down a Winchester technology drive.

✋ If you don't mount a disk after you change it, when it comes time to transfer data, the system writes to the new disk as if it had the same free and used locations as the old disk. It is likely data will be overwritten. Also, **NEVER** mount or unmount a disk while someone is accessing it—this can severely damage the file structure of that disk!!

✋ If your System Disk, DSK0:, is a Winchester technology disk, you must never use MOUNT to sequence down the System Disk before sequencing down other Winchester technology disks on the system. MOUNT checks to see if any active jobs are logged into the device you want to mount, but does not check if there are open files.

You cannot use MOUNT across a network to mount or unmount a disk on a remote system.

FORMAT

```
MOUNT {{devn:}{/switch}}
```

devn: is the specification of the device you want to mount, and ***switch*** is an option. If you don't include a device specification, MOUNT displays a list of all of the disks mounted on the system.

OPTIONS

The switches are operation switches, and may be abbreviated.

/BUFFEREDWRITES	Mounts an AMS-format diskette with buffered writes enabled.
/UNMOUNT	Unmounts and sequences down the specified disk.
/WAIT	Waits until the device is ready before mounting.

OPERATION

To mount a disk, enter MOUNT followed by a device specification. For example:

```
MOUNT DSK1: RETURN
```

If the disk has a label, MOUNT lists the Volume Name and Volume ID of the disk mounted, so you can verify you have mounted the proper disk. If you want to mount a disk, but you know the device containing the disk is not yet ready, use the /W switch. This ties up your terminal until the device is ready.

To mount all the logical devices of a physical disk, use the three-letter name of the drive as the device name, without a unit number. For example:

```
MOUNT DSK: RETURN
```

This mounts all logical devices on the DSK: physical device. You can use this format only with SCSI drives.

If you want to unmount a disk, enter MOUNT, the device, and /U. For example:

```
MOUNT ARC4:/U RETURN
```

If you want to sequence down a Winchester disk, use the /U option as above—using this option sequences down the entire physical disk.

✋ Remember to unmount the physical unit containing DSK0: LAST!

To display a list of the disks mounted on the system, enter MOUNT. MOUNT displays the Volume Name and Volume ID of each disk containing a label. For information on labeling a disk see the LABEL reference sheet.

MESSAGES

?Buffered Writes Enabled - Failure to unmount disk before removing will result in lost data

Reminder to unmount the disk when you're done.

?Command Error

The command line you entered is invalid. Try again, using the correct format.

?Device not ready

Try again when the device is fully cycled up. If you wish MOUNT to wait until the device is ready, use /W.

?Drive sequence error

The device you tried to mount did not sequence up properly. See your System Operator—this could indicate a problem with the disk.

?Error removing DDB buffer

An internal error occurred. Try the command again. If the error persists, inform your System Operator.

?No buffer pool allocated for specified device
?Buffered writes not enabled

You tried to mount with /B, but the device is not set up for buffered writes. Remount without /B.

?No disk currently mounted

Check your syntax, or use DEVTBL to see a list of devices on your system.

?Nonexistent device

Check your syntax, or use DEVTBL to see a list of devices on your system.

?Program restricted to use on local system only

You can't MOUNT devices on another system over a network. Contact someone on the other system to mount the device.

?Unable to load BADBLK.SYS from unit DSK0:
?WARNING - BADBLK.SYS has a bad hash total

You tried to mount a Winchester technology drive before mounting DSK0:. BADBLK.SYS is reported to have a bad hash total because the hash total looked at is not from the BADBLK file on DSK0:, and is thus invalid. Mount DSK0:, and try again.

?WARNING - BADBLK.SYS has a bad hash total

When reading in the alternate track information for a device using alternate tracks, MOUNT found the BADBLK.SYS file is damaged and doesn't have the correct hash total. See your System Operator for help.

%WARNING - There are active jobs logged in on the device being mounted
Enter a "Y" when it is OK to mount the device:

The disk has active users on it. Such jobs may include the spooler, task manager, or other jobs processing background tasks. When you are sure none of the jobs are really active users, type Y to continue. If you don't type Y, MOUNT will not mount the disk.

MTBOOT

FUNCTION

Creates a bootable magnetic tape for use by 1/2" magnetic tape drives.

CHARACTERISTICS

MTBOOT is re-entrant and re-usable. The warm boot is a procedure you use to restore your system when your System Disk is erased or written over accidentally. A warm boot from a 1/2" tape requires a special monitor file you generate using the WRMGEN command and which is pre-initialized with enough information to get your system up and running on one terminal and in one memory partition. Then you can restore the damaged files to your System Disk from other 1/2" tape backups you previously created using FILTAP.

A magnetic tape cannot contain both a warm boot monitor and data files. See the FILTAP reference sheet for information on creating a separate data backup tape.

MTBOOT works only on AMOS/32 and AMOS/L versions of the operating system.

FORMAT

```
MTBOOT {filespec} {/switch}
```

filespec is the specification of the warm boot monitor file you want to copy onto the streamer tape. The default filespec has the same name as your system monitor with a .WRM extension (i.e., DSK0:AMOSL.WRM[1,4] or DSK0:AMOS32.WRM[1,4]).

switch is one of the options listed below.

OPTIONS

/BOOT Transfers a warm boot file from disk onto the tape, and labels the tape as a warm boot tape.

/CHECK Reads entire tape and checks that the tape can be read without device errors. Block statistics are updated as the check proceeds.

/VERIFY Writes known data pattern to the entire tape, then rewinds tape and reads it back, checking for data errors. Block statistics and errors are updated as the program proceeds. ***This function destroys any existing data on the tape.***

OPERATION:

Load a tape into your magnetic tape drive. Enter MTBOOT and the name of the warm boot file. For example:

```
MTBOOT MAGTAP.WRM RETURN
```

MTBOOT requests information for the tape label:

Volume Name:	(40 characters)
Volume ID:	(10 characters)
Installation:	(30 characters)
System:	(30 characters)
Creator:	(30 characters)

Fill in these fields with information to help identify the tape. Press RETURN after each response. MTBOOT then creates the bootable tape.

MESSAGES

?Data error undetected by device

The /VERIFY phase read back a block from the tape that did not match the expected pattern. However, the tape unit did not report a read or write error in transferring the data. This may indicate a problem with the tape or the tape drive. Check the tape drive for correct operation, and clean it. Try the /VERIFY option using another tape.

%Field size exceeded

You put too much in one of the label fields. Re-enter, using fewer characters.

?Specification error ^

The ^ points to the error. Check your syntax and try again.

?Tape is not file structured

The tape directory block at the start of the tape could not be located. Either the tape was not written by AMOS, or the tape is damaged.

MTUDIR

FUNCTION

Displays a list of the files on a tape backup created by MTUSAV. Can also create a disk file containing the directory.

CHARACTERISTICS

MTUDIR is re-entrant and re-usable. MTUDIR can only read magnetic tapes created by MTUSAV. It may be used with 1/2" 9-track, streaming, and Exabyte tape drives. MTUDIR works with both traditional and extended format disks. Used also with MTURES (to restore files from tape to disk).

A group of files backed up onto magnetic tape at the same time by the same MTUSAV command is known as a "save set." A save set can be on more than one reel of tape. MTUDIR is a wildcard command. The account and device portions of the specification refer to the disk account and device from which the files were originally backed up. See your *AMOS User's Guide* for more about wildcard specifications.

FORMAT

```
MTUDIR {listfilespec=}filespec{,filespec...}{/switch}
```

listfilespec specifies a disk file to contain the tape directory display, ***filespecs*** are files on the tape whose directory listing to display, and ***switch*** is an option request.

DEFAULTS

The default listfilespec is DIRECT.LST in the account and device you are logged into. The default filespec is *.* and the account and device you are logged into.

OPTIONS

/AFTER:date{time} List only those files saved with a date and time of last modification after the specified date and time. The date and time must be in the format specified in your current language definition file.

/BEFORE:date{time} List only those files saved with a date and time of last modification before the specified date and time. The date and time must be in the format specified in your current language definition file.

/KILL or /K Deletes an existing listfile before creating a new one. Operation switch.

OPERATION

Enter MTUDIR, an optional listfilespec, and the input filespec(s). For example:

```
MTUDIR ALL:[]*.DAT,*.BAS RETURN
```

MTUDIR asks you for the tape unit number. Enter a single digit for the tape drive you wish to use. If your computer has more than one tape backup device with the same unit number, MTUDIR asks:

```
Enter tape device name [devices]:
```

MTUDIR lists the devices that share that unit number. Enter the one you wish to use. MTUDIR displays the reel label for the reel mounted on the selected unit. Beginning a directory display with a tape from the middle of a multi-reel save set may result in error messages being displayed while MTUDIR tries to synchronize itself with the tape's directory structure.

After displaying the label information, MTUDIR displays a line of data for each selected file in the directory. The first number on the line tells you the file's relative position on the tape. Next you see the device specification of the file as it appeared on the disk it was backed up from, then the number of disk blocks the file takes up. The letter following the block count tells you whether the file is a linked (sequential) file, or a contiguous (random) file. If you want to see a list of all the files on a tape, enter:

```
MTUDIR ALL:[] RETURN
```

To create a disk file containing the directory display, specify a listfile. For example:

```
MTUDIR =ALL:[]*.DAT RETURN
```

MESSAGES

?All "date and time" switches must be in absolute format

Specify dates and times in absolute, not relative, format.

?A "date" or a "time" switch must be specified for
all "date and time" switches

MTUDIR could not understand the format of the /AFTER or /BEFORE switch you entered.

%Bypassing bad directory block.

MTUDIR did not find the block it expected to during a search. The bad block is bypassed and MTUDIR continues to look for a directory block. Both the preceding file and the current file are probably corrupt, and cannot be successfully restored to disk. This is most often caused by backing up a disk which has file errors on it (use DSKANA before backing up!).

?Cannot read [device-name] - [explanation]

MTUDIR is not able to read from the tape unit for the reason given. Make sure you specified the correct tape drive, and the correct tape is mounted.

%Drive is not on-line and at load point.
%Please correct, then press RETURN when ready.

Correct the problem and continue.

%End of reel, please mount next tape in save set and press
%RETURN to continue, or press Control-C to cancel directory.

Remove the tape and mount the next reel in the save set.

?More than one output specification.

Try again, using only one listfilespec.

%Tape is not file structured.
%Please correct, then press RETURN when ready.

The tape you have mounted is not in MTUSAV format. Make sure the correct reel of tape is mounted on the correct tape unit.

?Unit number must be between 0 and 7

You've entered an invalid tape unit number. Try again.

MTURES

FUNCTION

Writes files to disk from 1/2" 9-track magnetic tape, streamer tape, 4mm tape, or 8mm tape. Lets you restore file-oriented disk backup from tape to disk.

CHARACTERISTICS

MTURES is re-entrant and re-usable. Used with MTUSAV (to write disk files to magnetic tape) and MTUDIR (to display files on a tape). Only reads tapes created by MTUSAV. Not for transferring data between Alpha Micro and non-Alpha Micro computers. MTURES works with both traditional and extended format disks.

You may not restore files to a disk account unless you are logged into that account or an operator's account, [1,2]. MTURES is a wildcard command. See your *AMOS User's Guide* for information on using wildcard commands.

The input specification must give the full specification of the files you want to transfer from the magnetic tape, including device and account specifications of the files **as they were written to the tape.**

The output specification lets you specify the device and account the files are to be written to on the disk, and to rename the files as they are written out to the disk.

FORMAT

```
     MTURES {outfilespec}=filespec{,filespec...}{/switch}
```

outfilespec specifies the files to be created on the disk, the ***filespec(s)*** specify the files to be transferred from the magnetic tape, and ***switch*** is an option request.

DEFAULTS

The input specification defaults to the device and account you are logged into. The output specification defaults to the input specification in the case of the filename and extension, and to the account and device you are currently logged into. Therefore, if you do not specify a device everything on the tape will be written to the device you are logged into. For example, if you are logged into DSK0:, everything on the tape will be written onto DSK0: even if the files were originally backed up from other disks.

Be careful to specify an output specification if the files on the tape came from more than one disk—unless you do intend to transfer them all onto one disk.

If you are logged into the System Operator's account, DSK0:[1,2], the default output specification is [ ] (all accounts). This means files will be restored to their original accounts (the ones from which they were backed up). If an account does not exist on the disk, MTURES creates it. If you are logged into account [1,2] on any other disk, the output specification is [ ] (all accounts on that logical disk).

OPTIONS

The switches are file switches, and may be abbreviated to any unique characters. Defaults are /D, /NOQ and /T.

/AFTER:date{time} Restore only those files saved with a date and time of last modification after the specified date and time. The date and time must be in the format specified in your current language definition file.

/BEFORE:date{time} Restore only those files saved with a date and time of last modification before the specified date and time. The date and time must be in the format specified in your current language definition file.

/DELETE Copy over existing files.

/NODELETE Do not copy over existing files.

/QUERY Confirm before selecting files.

/NOQUERY Do not confirm files.

/TAPESKIP Use fast tape search on SCSI streamers.

/NOTAPESKIP Do not use fast tape search.

OPERATION

Enter MTURES followed by an optional output specification, an equal sign, and the input specification(s). For example, to copy from a magnetic tape all .BAS files originally backed up from account [110,2] on DSK2: over to your current account, enter:

```
MTURES =DSK2:*.BAS[110,2] RETURN
```

Then MTURES asks you to enter the tape unit number. Enter a digit from 0 to 7 for the tape unit you wish to use. If your computer has more than one device assigned to the same unit number, you are asked for the device name (the choices are listed for you).

MTURES scans the directory on the tape and displays a list of the files that fit the specification you entered earlier. If you used the /Q switch, MTURES waits after the appropriate statement for you to respond Y for yes or N for no. You don't need to press RETURN after Y or N. For example:

```
MTURES =*.BAS/Q RETURN
Enter tape device name (MTU0,STR0): MTU RETURN
MTU0:DSK3:NEW.BAS[10,3] to DSK2:NEW.BAS[10,3]? Y
MTU0:DSK3:SCRTCH.BAS[10,6] to DSK2:SCRTCH.BAS[10,6]? N
```

MTURES requires the first reel mounted be the first reel of a save set, and each subsequent reel be from the same save set, and be in the correct order. If MTURES detects an out-of-sequence reel, it displays a message on your terminal and gives you a chance to mount the correct one. MTURES prompts you each time a new reel is required. When the restore is finished, rewind the tape and return it to its storage location.

To restore all files on the tape to the disks and accounts they were originally backed up from, log into account DSK0:[1,2], and enter:

```
MTURES ALL:[]=ALL:[] RETURN
```

You can restore all files backed up from one logical device to a different logical device. For example, to restore files from DSK2: onto DSK5:, log into DSK0:[1,2] and enter:

```
MTURES DSK5:[]=DSK2:[] RETURN
```

To restore all the logical devices on a tape to the devices of a subsystem disk (for example, SUB:), log into DSK0:[1,2] and enter:

```
MTURES SUB??:[]=ALL:[] RETURN
```

The subsystem you're restoring to should have the same number of logical devices as the disk the files were backed up from.

Using the default /TAPESKIP option can dramatically decrease the time needed to restore single files from SCSI streaming tape devices. However, it may significantly affect the performance of other jobs on the system, especially if other jobs are accessing other SCSI devices. Therefore, on systems with many users, you may want to use /NOTAPESKIP.

MESSAGES

%Bypassing bad directory block.

MTURES did not find the directory block it expected. The bad block is bypassed and MTURES continues to look for a directory block. The current file may be corrupt. Note the filename, and check the file carefully after the restore process has completed. This is most often caused by backing up a disk which has file errors on it (use DSKANA before backing up!).

%Bypassing BADBLK.SYS[1,2]

BADBLK.SYS[1,2] is a file holding device-specific information, and should not be transferred from one logical device to another. The file will not be transferred to disk.

%Bypassing unrequested account devn:[p,pn]

The restore is skipping the account listed because you are not restoring any files from it.

?Cannot create PPN [377,377] - it is not a valid PPN under AMOS 2.x

You requested a transfer of files to PPN [377,377], which is not available under AMOS 2.x.

?Device Full

Make more room on the device by erasing unwanted files, or select a different output device.

%Drive is not on-line and at load point.
%Please correct, then press RETURN when ready,
%or press Control-C to abort.

Correct the situation and continue.

%End of reel, please mount next tape in save set and press
%RETURN to continue, or press Control-C to abort restore.

Remove the reel and mount the next.

?Missing output specification.

Try again, with an output specification.

?More than one output specification.

Re-enter, using only one outfilespec.

%Not Copied - Destination file cannot be deleted

The current file was selected for transferring to disk. However, the disk file could not be deleted so it could be replaced. The tape file was not copied to disk.

%Not Copied - Destination file already exists.

You specified the /NOD switch and the destination file already exists. If you do want the file copied over the current one, try again without the /NOD switch.

%Tape is not first reel of save set.
%Please correct, then press RETURN when ready,
%or press Control-C to abort.

Place the first reel in the drive and try again.

%Tape is not file structured.
% Please correct, then press RETURN when ready.

The tape was not created in MTUSAV format. Make sure you have the correct reel of tape, and you specified the correct tape unit number.

%Tape is not from the same save set or is out of sequence.

Place the correct tape in the drive and try again.

?Unable to continue restore - output device full

The disk you are copying to is full. Remove unwanted files from the disk before rerunning MTURES, or use MTURES to restore files to a different device.

?Unit number must be between 0 and 7.

Re-enter a correct number.

?You are not logged in under [1,2], you can't create [p,pn].

Log into [1,2] and try again.

MTUSAV

FUNCTION

Writes copies of disk files to 1/2" 9-track magnetic tape, streamer tape, Exabyte tape, or DAT. A file-oriented disk backup program.

CHARACTERISTICS

MTUSAV is re-entrant, re-usable, and used for file-oriented disk backup. Used with MTURES (to transfer files from magnetic tape to disk) and MTUDIR (to list a directory of files on a tape). You can also use MTUSAV to check the quality of a backup tape. MTUSAV works with both traditional and extended format disks.

MTUSAV spawns a slave job during the backup process. Therefore, the JOBS statement in the system initialization command file must be at least one larger than the number of jobs allocated in the JOBALC statements.

Before using MTUSAV, you should always use DSKANA to check the device for errors. If there is a problem on the disk you copy from, you may not be able to restore from the tape later.

MTUSAV is a wildcard command. See your *AMOS User's Guide* for information on using wildcard specifications.

You may back up files from any disk account, whether or not the account is within your current project. A group of files backed up at the same time by the same command is known as a "save set." A save set can extend to more than one reel of tape.

Only some tape drive/tape combinations support multi-reel backups (also called "tape spanning"). Tape spanning is not allowed during a backup controlled by the Task Manager, as there is no way to signal when to change the tape.

MTUSAV records the disk file specification, date, and reel number on the tape along with the file. However, it does not transfer any account password; when backing up across an AlphaNET network, it also does not record the CPU ID of the source computer.

MTUSAV is not for transfer of data between AMOS and non-AMOS computer systems.

MTUSAV sets the JOBERR field in your job's JCB. If there are no errors or warnings, JOBERR is zero, otherwise it is non-zero. In a command file you can check the JOBERR field using the IF command immediately following MTUSAV. Error processing is explained in detail below.

FORMAT

```
MTUSAV {cpuID}filespec{,filespec...}{/switches}
```

cpuID is an AlphaNET network identification number, the ***filespec(s)*** specify the files you want to back up, and ***switches*** are one or more option requests.

DEFAULTS

The default file specification is *.* and the account and device you are logged into.

OPTIONS

Except as noted, the switches are file switches. All may be abbreviated to any unique characters. Defaults are noted in the list.

/AFTER:date@time Back up only files modified after specified date and time. Operation switch.

/APPEND Append .LOG output to existing MTUSAV.LOG in login account, if present. Operation switch.

/NOAPPEND If MTUSAV.LOG already exists, overwrite it. Default; operation switch.

/BEFORE:date@time Back up only files modified before specified date and time. Operation switch.

/BRIEF Display only the accounts backed up and the number of files in each, not the file names. This shows the progress of the backup without the slowdown displaying file names can cause. Operation switch.

/DMY Reports all dates in the format dd-mm-yy (or yyyy after 1999). Operation switch.

/NODMY Reports all dates in the format set in your language definition file. Default; operation switch

/EXTRA Output additional information on the screen and in the MTUSAV.LOG file. Allows you to see the current error severity settings after MTUSAV.OPT has been processed. Operation switch.

/NOEXTRA Don’t include extra information in MTUSAV.LOG. Default; operation switch.

/LOG Creates a disk file log of the MTUSAV procedure. The log file is MTUSAV.LOG in the current disk account. The contents and layout of the log file may vary between software versions. Programs which parse this file for key words or phrases may need to be changed when a new version of MTUSAV is released. Operation switch.

/MODIFIED Back up only files modified since last backup. Operation switch.

/OPTLIST Display the default error severity settings, or, with /LOG, output them to MTUSAV.LOG file. Does not perform a backup. All other switches are ignored. Operation switch.

/NOOPTLIST Do not display error severity settings. Default; operation switch.

/OPT2LIST Same as /OPTLIST, except settings are written to MTUSAV.LOG in format usable for MTUSAV.OPT file, as described below. Operation switch.

/NOOPT2LIST Do not display error severity settings. Default; operation switch.

/QUERY Confirm before selecting files.

/NOQUERY Do not confirm files. Default.

/SOFTABORT Allow rest of command or control file to execute if MTUSAV detects an incident with an “Error” severity. Otherwise, command and control files are aborted. Operation switch.

/NOSOFTABORT Abort command or control file after MTUSAV error. Default; operation switch.

/SUPPRESS Don’t list file names or account numbers on terminal as they are backed up. May speed up backup.

/NOSUPPRESS List files on the terminal. Default.

/SYSFILES Look for MTUSAV.INF and MTUSAV.OPT only in OPR:, instead of normal search path: (1) login account, (2) [P,0], (3) OPR:. Operation switch.

/NOSYSFILES Use normal search path for MTUSAV.INF and MTUSAV.OPT. Default; operation switch.

/TIMEOUT: n Number of minutes for a command file to wait for terminal input or a control file to wait for an error condition to clear. Only works with certain tape-drive related problems (e.g. drive not on line). Operation switch.

/NOTIMEOUT Don’t wait for input or error condition to clear. Abort MTUSAV under control of /SOFTABORT. Default; operation switch.

/TMSYMBOL Include the error type symbol—either “?” or “%” at the beginning of displayed messages. Default; operation switch.

/NOTMSYMBOL Do not include the error type symbol at the beginning of messages. Generally used only in control files to avoid Task Manager automatic error aborts. Operation switch.

/VERIFY After performing backup, rewind tape, read files, and compare to disk files to verify the data. Displays any errors on the screen. Does not work when backing up across a network. Operation switch.

/VONLY Do not back up; verify only. Used to verify a previous backup or if a combined backup/verification is interrupted. Displays any errors on the screen. Does not work when used across a network. Operation switch.

OPERATION

The rest of this reference sheet describes how to use MTUSAV. It starts with basic instructions on entering the command itself, then talks about recommended backup procedures, using command files and Task Manager control files to automate backups, and finally discusses MTUSAV's extensive error reporting and how you can adjust it to your situation.

Basic Use

Before backing up, make sure the tape is not write-protected. Type MTUSAV and the specification of the files you want to back up. For example:

```
MTUSAV MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

or

```
MTUSAV DSK5:*.*[] RETURN
```

MTUSAV asks for the tape unit number. Enter a digit from 0 to 7. If your computer has more than one device with the same unit number, MTUSAV asks which device to use.

Next, MTUSAV prompts you for information it stores in the save set label: the Volume name (40 characters); Volume ID (10 characters); Installation (30 characters); System (30 characters); and Creator (30 characters).

Now MTUSAV copies the files onto the tape. If your tape device supports tape spanning, and all the files won't fit on a single tape, MTUSAV prompts you to mount new tapes as needed. As you remove each tape, label it with the reel number (as well as other backup information) so you can tell which is which. You may also want to write-protect the tape so it is not accidentally overwritten. The process continues until all files are backed up.

Not all backup devices support multi-reel backups ("tape spanning"). If your device does not support tape spanning, an error message displays if the tape is filled.

For error checking, you can use the /VERIFY switch. VERIFY reads every file on the tape block-by-block and compares it to the corresponding file on the disk. If a file is not copied to tape (for example, if it was a sequential file locked by another job), it does not cause a verification error, since only files actually on the tape are checked. You can use /LOG with /VERIFY to write the verification data to a log file. For example:

```
MTUSAV DSK1:*.*[66,1]/VERIFY/LOG RETURN
```

This backs up all files in the account DSK1:[66,1], then compares the files on the tape to the disk and writes the results to the MTUSAV.LOG file in the account you're logged into.

Recommended Procedures

This section gives recommended procedures for using MTUSAV. We do not recommend a particular backup frequency, completeness of backup, backup method (full, incremental, etc.), or tape rotation. These all depend on your situation. Plan for the worst!

These procedures refer to topics, especially error handling and reporting, covered later in this reference sheet.

MTUSAV can record a lot of information about each backup, which can be invaluable if you need to restore data. To take advantage of these abilities, we recommend:

- Always do a DSKANA of the devices from which you are backing up before the MTUSAV. Correct any file system errors before backing up.
- Before running MTUSAV, always log into a device with enough free space to record all of the .TOC and .VER entries. The .TOC file needs roughly one block for each 30 files backed up; the .VER file requires one block for each ten files.
- Always use the /LOG and /VERIFY options. The /LOG switch creates a disk file containing all the information MTUSAV records about the backup process; /VERIFY compares the files on tape against the disk files.
- Always have LOGGER set up on the system. MTUSAV cannot recover from CPU exceptions (such as address errors) adequately, so it aborts with a JOBERR value reflecting the type of CPU exception. The system may be in an unstable state after the exception, and should be reset as soon as possible. The backup tape may not be readable or restorable. All CPU exceptions are reported to LOGGER. Always create a SYSLOG.LST file and examine it for errors.
- Always use a command file to run unattended MTUSAVs. Structure the command file to trap as many errors as possible. Here is a skeleton .DO file which you can adapt to your needs:

```
:R
LOG <account>
ERASE MTUSAV.LOG, MTUSAV.VER
MTUSAV <filespecs>/LOG/VERIFY/BRIEF
.... ; enter MTUSAV data here
;
IF ERROR = SEV’NUL AND LOOKUP(“MTUSAV.LOG”)=-1
GOTO ALL.OK
ENDIF
;
; Insert problem reporting procedures here
;
PRINT MTUSAV.LOG
LOG OPR:
; insert OPR: password here if needed
SYSLOG
PRINT SYSLOG.LST
LOG $:[$P]
EXIT
;
;ALL.OK
```

```
PRINT MTUSAV.LOG
LOG OPR:
SYSLOG
PRINT SYSLOG.LST
:<MTUSAV finished without errors
>
LOG $:[$P]
EXIT
```

This file follows all of the recommendations. It logs into an account on a device with plenty of free space and erases any existing .LOG and .VER files. The MTUSAV command line includes /LOG and /VERIFY: these are an integral part of the checking process. As shown, the IF command must immediately follow MTUSAV's input parameters, or AMOS will overwrite JOBERR. The IF command branches to ALL.OK if there were no errors and MTUSAV.LOG was produced. Checking for the log file is crucial: since MTUSAV.LOG was erased before MTUSAV and we used the /LOG option, if there is no MTUSAV.LOG after MTUSAV runs, something bad happened. For example, there may have been insufficient memory to execute MTUSAV.

- After a backup, print the MTUSAV.LOG file and keep it with the tape. If you need to restore files, you can quickly check to see if the backup was intact. If any files had a problem when they were backed up, you may want to take special action before restoring them. For example, you may want to copy an existing disk file to a file with a different name before restoring the tape copy.

Using in Command/Control Files

Using MTUSAV in a command file or Task Manager control file is often very convenient, as it allows unattended backups to run when no one is using the computer. However, an unattended backup can present its own problems. Using the /SOFTABORT and /TIMEOUT switches can be key to getting the best results from MTUSAV in a command or control file.

The /SOFTABORT and /TIMEOUT Switches

By default, if an error occurs while MTUSAV is running in a command or control file, MTUSAV aborts the entire command or control file and writes the reason to the .LOG file, the screen (for command files), and, usually, SYSLOG.SYS. If a condition requires user interaction—such as changing a tape—a control file aborts, while a command file waits forever for the action. In either of these situations, any actions after the MTUSAV are not performed. /SOFTABORT and /TIMEOUT let you change this behavior, to give both MTUSAV and the other procedures in your command or control file a better chance of completing successfully.

- The /SOFTABORT switch prevents an error from aborting MTUSAV. Instead, MTUSAV shuts down cleanly (including swallowing any unused command lines for tape unit number, device name, and tape label information), signals the error via reports and JOBERR, and continues with the rest of the file. If the error occurs during a backup, and a verification was requested, the verification is not performed.
- The /TIMEOUT:n switch causes MTUSAV to wait ***n*** minutes for user response if a situation occurs which needs it. For example, in a command file, changing tapes or correcting a tape drive condition requires an action, then an entry from the keyboard.

Without /TIMEOUT, MTUSAV waits forever for this keyboard entry. If you use /TIMEOUT, MTUSAV waits for the time you specify, then, if there has been no response, MTUSAV aborts and, if you've used the /SOFTABORT switch, the command file continues.

If this same situation occurs in a control file, it doesn't ask for user input. Instead, if you use /TIMEOUT, the control file checks the error condition—for example, is the tape in the drive still write-protected?—every few seconds for the number of minutes you specify. If the error isn't corrected in that time, MTUSAV aborts and, if you've used the /SOFTABORT switch, the control file continues.

Entering /TIMEOUT:0 is the same as not using the /TIMEOUT switch.

Even using /TIMEOUT, there is no way to change tapes for a multi-tape backup while in a control file. MTUSAV will abort, according to the /SOFTABORT setting, if there is not enough room on a single tape.

If you use /TIMEOUT without /SOFTABORT, any actions following MTUSAV in the command or control file are not performed unless you correct the error condition within the /TIMEOUT time limit.

Neither /SOFTABORT or /TIMEOUT has any effect if you are using MTUSAV from AMOS command level, not in a command or control file.

Using MTUSAV With the Task Manager

Because little interaction is possible when running a control file under the Task Manager, MTUSAV reduces its functionality. MTUSAV's responses to error conditions which can be corrected (e.g. a tape is write protected or no tape is in place) are controlled by the /TIMEOUT and /SOFTABORT switches, as described above.

Other conditions cannot be corrected. For example, tapes cannot be changed during either backup or verification, so tape spanning is impossible. In such cases, MTUSAV aborts gracefully, under control of the /SOFTABORT flag, and JOBERR is set appropriately.

Regardless of the /SOFTABORT and /TIMEOUT settings, if you submit the control file containing MTUSAV to the Task Manager using the /ERROR switch, the Task Manager will abort the control file after MTUSAV exits if MTUSAV has displayed a message starting with "?" (with /ERROR:FATAL), "%" (with /ERROR:WARNING), or either (with /ERROR:ALL). You can avoid this by using the /NOTMSYMBOL switch on the MTUSAV command line.

If a control file entry for the tape label is too large, MTUSAV truncates it to the maximum length.

Using MTUSAV in a Command File

Command files allow more interaction than control files. In particular, terminal input is possible. In fact, if an action is necessary (for example, a tape is write-protected) MTUSAV forces a prompt to the screen regardless of the setting of Trace or Silence mode in the command file, Therefore, you can see the message, correct the problem and respond to the prompt so the command file will continue.

If the command file is run unattended (such as for an overnight backup), operator intervention is not possible, and you will want to use the /TIMEOUT:n and/or /SOFTABORT switches, discussed above, so the command file can continue in case of an error.

If a command file entry for the tape label is too large, MTUSAV truncates it to the maximum length.

As discussed above in “Recommended Procedures,” you can use the IF command to check JOBERR after MTUSAV finishes. To do this, IF must be the next command after the MTUSAV data; otherwise AMOS resets JOBERR and the value from MTUSAV is lost.

Error Reporting

You do not need to know the following information to use MTUSAV successfully. We provide it for advanced users who want to understand the technical aspects of error handling, or who want to be able to customize MTUSAV’s error reporting.

A great many things can go wrong during a backup: disks can fill up, files can be left open (or opened during the backup), and more. To handle all of these situations, MTUSAV’s error processing procedures are necessarily complex. The following sections contain:

- A discussion of incident severity and priority.
- A series of tables showing the various incidents that can occur at each stage of MTUSAV processing and MTUSAV’s response to each.
- Ways you can control incident reporting, both by listing files for which some types of errors shouldn’t be reported and by changing the severity of certain incidents.

The rest of this reference sheet refers to any condition which triggers exception (error) processing as an “incident.” “Error” refers only to an incident of a specific severity, as discussed below.

Incident Severity and Priority

MTUSAV tracks all incidents it encounters, and reports them along the way as detailed below. Just before it finishes, MTUSAV sets JOBERR to an appropriate value. Because JOBERR can only hold one value, and any number of incidents can occur during MTUSAV, it is important to understand MTUSAV’s concept of *Incident Severity* and *Incident Priority*.

With the exception of a few extremely serious incidents, and a Control-C user abort, MTUSAV classifies all incidents into three severity levels:

Severity	Role	Symbol
Note	Least severe: will not set JOBERR on exit	<N>
Warning	More severe: will set JOBERR to JE$WRN on exit	<W>
Fatal	Most severe: will set JOBERR to JE$MSC or other value shown in the error tables on exit.	<E>

All incidents are preset to one of these severities. For some incidents, the severity cannot be changed, for others, you can override the default severity by making an entry in the MTUSAV.OPT file. You can also use MTUSAV.OPT to have MTUSAV “accumulate” a number of less severe incidents into one more more severe one. This lets you tailor MTUSAV’s operation for an individual system environment. For example: on some systems, having a sequential file open during a backup could be classified as an error, while on other systems, it may be worth only a note. Or, while any single open file could be a note, ten or more should be treated as a warning. Using MTUSAV.OPT to adjust severity is described below.

MTUSAV indicates the final severity of an incident, after all MTUSAV.OPT processing, by starting each message relating to the incident with the symbol shown above.

As MTUSAV executes, it remembers the severity of the gravest incident encountered so far. In addition to the three discussed above, there are two severities MTUSAV.OPT cannot adjust: standard AMOS DDB errors and Control–C aborts. These five levels form a hierarchy of incident importance, the *Incident Priority* hierarchy, as listed:

Priority	Used For
None	Notes; do not set JOBERR
Low	DDB (file) error codes, usually temporary conditions
↓	Warnings, setting JE$WRN
↓	Other errors defined in error tables, except JE$CTC
Highest	Control-C, setting JE$CTC

Just before MTUSAV exits, it writes the value of the highest priority incident to JOBERR. You can then test this value by using IF.LIT as the next command in a command file, or by using a program that has its PH$ERR bit set in its program header.

Listing Severity Levels

You can list MTUSAV’s default severity levels for user-controllable incidents by running MTUSAV/OPTL or MTUSAV/OPT2; if you add the /LOG switch, the list is also placed in the MTUSAV.LOG file. You should use /OPT2/LOG to create a list you can then modify to create an MTUSAV.OPT file, as discussed below.

After you have set up an MTUSAV.OPT file, you can list the settings that result from the merge of the default settings and MTUSAV.OPT by running MTUSAV/EXTRA.

Error Tables

The following tables list the incidents that cause error processing during MTUSAV. There is a table for each stage of MTUSAV processing: program initialization, tape drive interaction, backup, and verification, with an additional table of incidents which could occur at any point. Notes following each table expand on some of the descriptions.

The columns in each table are:

- **Incident:** A brief description.
- **Mode:** Some incidents are handled differently depending on the mode MTUSAV is operating in. There are three modes:
  - T: operating under the Task Manager
  - C: operating under a command file
  - I: interactive
- **Abort?:** If the problem is essentially irrecoverable, MTUSAV will abort its operation quickly. It may finish any pending operations before terminating.
- **Where:** How the error is reported:
  - T: a message on the terminal
  - S: an entry in SYSLOG.SYS
  - L: a message in MTUSAV.LOG.
- **JOBERR:** How is JOBERR affected? This could be:
  - Blank: JOBERR is not set.
  - Asterisk (*): JOBERR is set based on the user settings in MTUSAV.OPT and the runtime history.
  - A fixed value: JOBERR is set to this value on termination, under the rules described above for JOBERR priority.
- **.OPT Text:** The text used in MTUSAV.OPT for defining the incident severity. This is blank if the incident severity cannot be set in MTUSAV.OPT.
- **Acc?:** Answers the question “Can the severity of this incident be changed through accumulation?” For some incidents, you can set, in MTUSAV.OPT, a number of occurrences after which the incident’s severity increases. This column appears only in some tables.
- **Note:** Further details are found in the Notes section following each table.

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Note
Insufficient memory	All	Yes	T	JE$MSC		1
Bad version (1.x version under AMOS 2.x)	All	Yes	T	JE$MSC		2
Cannot locate, load, or initialize CMDLIN.SYS	All	Yes	T	JE$MSC		
Bad command line switches	All	Yes	T	JE$CLS		3
Invalid line in MTUSAV.OPT	All	No	T,L	*	MTUSAV.OPT invalid line	4
Error reading MTUSAV.OPT	All	No	T,L,S	*	MTUSAV.OPT read error	
Invalid line in MTUSAV.INF	All	No	T,L	*	MTUSAV.INF invalid line	
Error reading MTUSAV.INF	All	No	T,L,S	*	MTUSAV.INF read error	
Cannot spawn slave task	All	Yes_	T,L	JE$MSC		
Cannot execute TAPSER on slave task	All	Yes	T,L	JE$MSC		

Initialization Incidents

Notes:

1. This refers only to an insufficient memory condition that exists after MTUSAV.LIT has been loaded and starts to execute.
2. Only triggered if you run the latest AMOS 1.x version of MTUSAV under AMOS 2.x.
3. Some command line switches are automatically adjusted if bad values or incompatible options are selected, in which case no error is reported, but the adjustments are displayed on the screen and put in MTUSAV.LOG.
4. MTUSAV.LIT has defaults for all optional control values. If a line in MTUSAV.OPT is invalid, it is ignored, and the default value used. If the rest of MTUSAV.OPT cannot be read, defaults are used for all subsequent options. The control of this setting by MTUSAV.OPT assumes the control line is processed without error.

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Note
Invalid tape unit details	C,T	Yes	T,L,S	JE$MSC		
Tape driver not loaded into RES:	All	Yes	T,L	JE$MSC		
Old version of tape driver used?	All	No	T,L			1
Using old version of TAPSER	All	Yes	T,L	JE$MSC		
Cannot ASSIGN/DEASGN tape drive	All	Yes	T,L	JE$MSC		
Write-protected tape	C,T	Yes	T,L	JE$MSC		2
Write-protected tape	I	No	S			3
Drive not ready or off-line	C,T	Yes	T,L	JE$MSC		2
Drive not ready or off-line	I	No	S			3
Tape read or write errors	All	Yes	T,L,S	JE$MSC		

Tape/Drive Interaction Incidents

Notes:

1. If the driver cannot report on the tape spanning ability of the selected drive, MTUSAV will prevent multi-reel operation, even if the drive itself supports it.

2. MTUSAV will wait under control of /TIMEOUT until the time-out period has expired.
3. The incident is displayed on the screen, and the user resolves it manually.

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Acc?	Note
Error reading or writing .TOC file	All	No	T,L	*	Error reading TOC		
Error writing TOC		1					
Error reading disk directory structure	All	Yes	T,L,S	JE$MSC			2
Unable to open sequential file – file in use	All	No	T,L	*	Bkup seq file in use	Yes	3, 11
Unable to open sequential file – other	All	No	T,L,S	*	Bkup error seq file open		3
Unable to open contiguous file – file in use	All	No	T,L	*	Bkup contig file in use	Yes	4, 11
Unable to open contiguous file – other	All	No	T,L,S	*	Bkup error contig file open		3
Contiguous file hijacked by another job	All	No	T,L	*	Bkup contig file hijacked	Yes	5, 11
Unable to read all blocks in sequential file	All	No	T,L,S	*	Bkup seq file read error	Yes	6
Unable to read all blocks in contiguous file	All	No	T,L,S	*	Bkup contig file read error	Yes	7
One or more contiguous file blocks are locked with LOKSER	All	No	T,L,S	*	Bkup record in use	Yes	8, 11
Sequential file: bum block count – pad file	All	No	T,L,S	*	Bkup seq file padded	Yes	9
Sequential file: bum block count – truncate file	All	No	T,L,S	*	Bkup seq file truncated	Yes	9
Tape spanning needed, but not supported	All	Yes	T,L,S	D$EFUL			
Tape spanning allowed and needed	T	Yes	T,L,S	D$EFUL			
Tape spanning allowed and needed	I,C	No	T				10
Unable to update “Last Backup” date	All	No	T,L	*	Dir date update failed		1

Backup Incidents

Notes:

1. Only files in extended directory format whose details are successfully written to MTUSAV.TOC have their date of last backup updated.
2. This error stops all further file processing, and MTUSAV aborts under control of /SOFTABORT.
3. The file is not backed up.
4. The contents of the file are saved regardless of file or record locking. Data integrity may be compromised.

5. This occurs when MTUSAV has opened a contiguous file for reading (sharing) and another job opens the same file exclusively. LOKSER allows this, but forces a “file in use (D$EFIU)” error the next time MTUSAV reads the file. The file is saved regardless of record or file locking, and data integrity may be compromised.
6. If a block of a sequential file cannot be read, a block containing nulls is written to tape. If there are unread blocks in the file, the tape file is padded with the same number of null blocks. This file will not verify, and data integrity is compromised. Some remedial disk management and data restoration work is required.
7. If a block of a contiguous file cannot be read, a block containing an ASCII message followed by nulls is written to tape in its place. Data integrity is compromised. Subsequent blocks will be handled normally. Some remedial disk management and data restoration work is required.
8. The block is read regardless of locking. Data integrity may be compromised.
9. The disk file system is corrupted. The number of blocks in the file as defined by the file’s directory entry does not match the number of blocks AMOS can read from the file. MTUSAV treats the file size defined in the disk directory entry as “correct.” A file that is too short is padded to the correct size on the tape with null bytes at the end. A file that is too long is truncated on the tape. In both cases, the disk files and directory entries are not altered. Data integrity has been compromised, and remedial disk management work is required.
10. The incident is displayed on the screen, and the user resolves it manually.
11. Not processed as an incident for files listed in MTUSAV.INF; still reported.

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Acc?	Note
Tape file does not match disk file	All	No	T,L,S	*	Seq file verif error		
Contig file verif error	Yes	5, 6					
Error reading or writing .VER file	All	No	T,L	*	Error reading VER		
Error writing VER							
Tape label not found	All	Yes	T,L,S	JE$MSC			
Tape label found in wrong place	All	Yes	T,L,S	JE$MSC			
Tape directory block not found	All	No	T,L,S	*	Tape dir block not found	Yes	
Sequence number error	All	No	T,L,S	JE$MSC			
Sequential file no longer exists	All	No	T,L,S		Verif seq file not found	Yes	5
Contiguous file no longer exists	All	No	T,L,S		Verif contig file not found	Yes	5
Sequential file in use	All	No	T,L,S		Verif seq file in use	Yes	5
Error reading disk file	All	No	T,L,S		Verif seq file read error		
Verif contig file read error	Yes						
File protection changed	All	No	T,L,S		Verif file protection changed	Yes	2
Directory dates changed	All	No	T,L,S		Verif dir date changed		3
Tape spanning needed, but	All	Yes	T,L,S	JE$MSC			

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Acc?	Note
not supported							
Tape spanning allowed and needed	T	Yes	T,L,S	D$EFUL			
Tape spanning allowed and needed	I,C	No	T				1
Tape is not part of save set	I	No	T				1
Tape is not part of save set	C	Yes	T,L	JE$MSC			1,4
Tape reel number not in sequence	I	No	T				1
Tape reel number not in sequence	C	Yes	T,L	JE$MSC			1,4

Verification Incidents

Notes:

1. The incident is displayed on the screen, and the user resolves it manually.
2. The file is checked further: MTUSAV does not bypass the rest of the file.
3. This setting can also adjust the resulting severity for a verification error.
4. This error cannot occur when under the Task Manager.
5. Not processed as an incident for files listed in MTUSAV.INF; still reported.
6. This incident is overridden by a “directory date changed” incident.

Incident	Mode	Abort?	Where	JOBERR	.OPT Text	Note
CPU exceptions	All	Yes	T,S	Varies		1
Control-C abort during backup	All	Yes	T,L	JE$CTC	Bkup user abort	2
Control-C abort during directory update	All	No	T,L	JE$CTC	Date update user abort	
Control-C abort during verification	All	Yes	T,L	JE$CTC	Verif user abort	2
Error writing .LOG file	All	No	T	JE$WRN	Error writing LOG	

General Incidents

Notes:

1. CPU exceptions (address error, bus error, etc.) cannot be handled cleanly. At best, JOBERR is set, a message is displayed on the screen, and a SYSLOG entry made. The system or the job may crash. MTUSAV may not report any error, and (under AMOS 2.x) may leave a zero-block MTUSAV.LOG file on disk. Other temporary files may also be present.
2. A Control-C while MTUSAV is listing the .TOC or .VER file is handled separately, outside the scope of user-defined severity. Such a Control-C stops further listing of the file and continues processing. A Control-C at other times follows the severity procedures outlined earlier.

Omitting Files from Error Checking: the MTUSAV.INF File

Under previous versions of MTUSAV, backing up certain files would always, or almost always, cause errors. Examples include the MAL*.QUE files that AlphaMAIL always has open, and NETLOG.LST that AlphaTCP always keeps open. This complicated meaningful error reporting and handling.

MTUSAV now lets you list files for which certain incidents should not be considered problems. The incidents are still reported to the screen and MTUSAV.LOG, but they are not considered for JOBERR processing, and do not contribute toward any incident accumulation, as discussed below.

To enable this special handling, you create a file called MTUSAV.INF, listing the files to be "ignored" by the error handler. If MTUSAV encounters one of the incidents listed below while processing a file listed in MTUSAV.INF, it assigns the incident the severity given in the "Bkup file known" or "Verif file known" entry in MTUSAV.OPT, or a "Note" severity if these incidents aren't listed in that file.

MTUSAV searches for MTUSAV.INF using the following search path:

1. Login account of the MTUSAV job
2. [P,0] account of the MTUSAV job
3. DSK0:[1,2]

If MTUSAV.INF is not found, MTUSAV assumes all files are handled through its standard incident handling scheme.If you use the /SYSFILES switch, MTUSAV looks for MTUSAV.INF only in DSK0:[1,2].

MTUSAV.INF is an ASCII sequential file. Each line contains a single unambiguous file specification. Wildcarding is ***not*** supported, and a full device-drive-filename-ppn specification is strongly recommended. If any part of the full file specification is missing, MTUSAV defaults that part of the specification to the current login device and/or account. This can cause a problem as MTUSAV will behave differently if you run it from different accounts. Blank lines, text after a semicolon or hash (#) character, and tabs or spaces before or after a file specification are all ignored, letting you format and comment the file for best readability.

These incidents are affected by MTUSAV.INF:

- During backup phase: sequential file in use, contiguous file in use, contiguous file hijacked, contiguous file record in use
- During verification phase: tape file does not match disk file, file not found, sequential file in use

All other incidents, such as disk errors, are always treated and reported as errors, even for files listed in MTUSAV.INF.

Setting Backup Options: the MTUSAV.OPT File

The MTUSAV.OPT file contains the severity settings for incidents with a user-definable severity. Other incidents have a set severity level which cannot be altered by a user.

MTUSAV searches for MTUSAV.OPT using the following search path:

1. Login account of the MTUSAV job
2. [P,0] account of the MTUSAV job
3. DSK0:[1,2]

If MTUSAV.OPT is not found, MTUSAV uses the default severity settings, as listed in the table below. If you use the /SYSFILES switch, MTUSAV looks for MTUSAV.OPT only in DSK0:[1,2].

MTUSAV.OPT is an ASCII sequential file. Each line contains the name of the incident being handled (as in the first column of the table below), an equals sign, and the incident severity: either “Note,” “Warning,” or “Error.” Blank lines, text after a semicolon or hash (#) character, and tabs or spaces before or between words, or around the equals sign, are all ignored, letting you format and comment the file for best readability. The text is not case-sensitive.

The easiest way to create MTUSAV.OPT is to start by using MTUSAV/OPT2LIST/LOG. This places the default incident severity levels in the MTUSAV.LOG file, in the correct format for MTUSAV.OPT. Rename MTUSAV.LOG to MTUSAV.OPT, then edit it to change the severities as you want.

You can set the severity for the following incidents in MTUSAV.OPT:

Incident Name	Default	Meaning	Note
Temporary File Control			
Error reading TOC	Warning	For all incidents in this category, MTUSAV either cannot read or cannot write a block to the disk. MTUSAV will not try to access the file again. The program will continue, but the file will not be complete.	1
Error writing TOC	Warning		2
Error reading VER	Warning		3
Error writing VER	Warning		4
Error writing LOG	Warning		5
User Abort Control			
Verif user abort	Warning	If a ^C comes in while the list of verification errors in being displayed, the list is terminated, but MTUSAV continues.	
Date update user abort	Warning	Even if set to Error, MTUSAV will not treat this as a fatal error.	
Parameter File Control			
MTUSAV.INF invalid line	Warning	Usually a file specification error	
MTUSAV.INF read error	Warning	Cannot read a block from the disk.	
MTUSAV.OPT invalid line	Warning		
MTUSAV.OPT read error	Warning	Cannot read a block from the disk.	

Incident Name	Default	Meaning	Note
Problems During Backup			
Bkup seq file in use	Warning	MTUSAV could not open the sequential file for input as another job had the file open. The file is not saved to tape.	6
Bkup error seq file open	Error	MTUSAV could not open the sequential file for any reason other than another file had the file already open. The file is not saved to tape.	
Bkup contig file in use	Warning	On trying to open the contiguous file, LOKSER reported that another user had the file open for exclusive use. MTUSAV will save the file, but its data may not be consistent, as the other job(s) may be writing to the file while it is being saved to tape.	6
Bkup error contig file open	Error	MTUSAV could not open the contiguous file for any reason other than another job had the file opened for exclusive use. MTUSAV will save the file, but its data may not be consistent, as the other job may be writing to the file while it is being saved to tape.	
Bkup record in use	Warning	MTUSAV tried to read a block from a contiguous file on disk, but LOKSER reported that the block (or part of it) was locked by another job. MTUSAV will read the block anyway, but the data in the file may not be consistent.	6
Bkup contig file hijacked	Warning	Another job opened a contiguous file for exclusive use while MTUSAV was copying it to tape. MTUSAV will continue to save the file to tape, and will read subsequent blocks regardless of locking. The data in the tape file may not be consistent.	6
Bkup seq file padded	Warning	The number of blocks in a sequential file that can be read from the disk (by following the internal forward pointers) was fewer than the number of blocks indicated in the disk file's directory entry. The file system is corrupt. MTUSAV will save the entire file, but will append null blocks to the tape file to pad its length out to the number of blocks specified in the directory entry. The file is corrupt.	
Bkup seq file truncated	Error	The number of blocks in a sequential file that can be read from the disk (by following the internal forward pointers) was larger than the number of blocks indicated in the disk file's directory entry. The file system is corrupt. MTUSAV truncates the tape file to the number of blocks specified in the disk directory entry, and data may be lost. The file is corrupt.	
Bkup seq file read error	Error	MTUSAV cannot read a disk block from a sequential file on disk.	
Bkup contig file read error	Error	MTUSAV cannot read a disk block from a contiguous file on disk	
Bkup file known	Note	The file is listed in MTUSAV.INF. If the incident is one of those listed for MTUSAV.INF, use this severity.	
Problems During Verification			
Verif seq file error	Error	A sequential file on tape did not match its partner on disk. For AMOS 2.x systems, the file sizes are the same but the contents differ.	7,9
Verif contig file error	Error	A contiguous file on tape did not match its partner on disk. For AMOS 2.x systems, the file sizes are the	7,9

Incident Name	Default	Meaning	Note
		same but the contents differ.	
Tape dir block not found	Error	A directory block on the tape was not found when MTUSAV was expecting one. The AMOS disk file system is corrupted, and/or the tape is bad. One or more files may be missing or corrupted on the tape.	
Verif seq file not exist	Warning	A sequential file that was present when the backup was made, and copied to tape, had been erased by the time MTUSAV tried to verify it from tape.	7
Verif contig file not exist	Warning	A contiguous file that was present when the backup was made, and copied to tape, had been erased by the time MTUSAV tried to verify it from tape.	7
Verif seq file in use	Note	A sequential file present and copied to tape was in use when MTUSAV tried to verify it. The file cannot be checked.	7
Verif seq file read error	Error	MTUSAV could not read a disk block from a sequential file. The file cannot be verified further. Remedial disk housekeeping is necessary.	
Verif contig file read error	Error	MTUSAV could not read a disk block from a contiguous file. The file cannot be verified further. Remedial disk housekeeping is necessary.	
Verif file protection changed	Note	AMOS 2.x only: The file protection for the disk file has changed since the backup was made.	8
Verif dir date changed	Note	The date of creation or last modification has changed between the time of backing up the disk file to the time of verifying the file.	9
Verif file known	Note	The file is listed in MTUSAV.INF. If the incident is one of those listed for MTUSAV.INF, use this severity.	
Problem During Directory Date Updating			
Dir date update failed	Warning	The date of last update in all the files listed in the MTUSAV.TOC file could not be updated.	
Accumulation of Errors			
Max read errors	5	Maximum number of disk read incidents before triggering an error.	
Max bum block count count	2	Number of sequential file size problems on backup before triggering an error.	
Max verif error count	5	Number of files that fail verification before triggering an error.	
Max seq file in use count	5	Number of sequential files in use (during backup and verification combined) encountered before triggering an error.	
Max contig file in use count	5	Number of contiguous files in use (during backup and verification combined) encountered before triggering an error.	
Max rec in use count	10	Maximum number of record-in-use incidents before triggering an error. One file may give rise to more than one record-in-use error.	
Max tape dir block not found count	0	Maximum number of tape directory entry problems encountered before triggering an error.	
Max warnings before error	5	Maximum number of warnings generated before triggering an error.	

MTUSAV.OPT User-defined Severity Settings

Notes:

1. Occurs when summarizing the incidents during the backup phase. While the totals and JOBERR setting will be correct, the details will not be complete. Only those files which were listed completely will have their date of last backup updated (AMOS 2.x only).
2. Occurs when writing a completion record about the backup of a particular file. Further completion records will not be recorded, although subsequent files will be processed and backed up as appropriate. An “Error reading TOC” will probably occur in the summary part of the backup phase report.
3. Occurs when summarizing incidents during the verification phase. While the totals and JOBERR setting will be correct, the incident list will not be complete. MTUSAV.LOG will have the incident details listed after the appropriate file.
4. Occurs when writing an incident record about the verification of a particular file. Further incident records will not be recorded in the MTUSAV.VER file, but will still be listed in the MTUSAV.LOG file. An “Error reading VER” will probably occur in the summary part of the verification phase report.
5. Occurs when writing to the MTUSAV.LOG file. Totals and JOBERR will continue to be set correctly, but details of incidents will not be recorded in the .LOG. Certain errors will still be reported to SYSLOG, as lsited in the Error Tables.
6. If a file listed in MTUSAV.INF encounters this incident, the severity is taken from the “Bkup file known” entry if that entry is less severe than the original entry. Can be further modified by error accumulation processing.
7. If a file listed in MTUSAV.INF encounters this incident, the severity is taken from the “Verif file known” entry if that entry is less severe than the original entry. Can be further modified by error accumulation processing.
8. If this incident is encountered, MTUSAV continues to verify the file.
9. If a file encounters this incident, the severity of the reported error is taken from the “Verif dir date changed” entry if the entry is less severe than the original entry. Can be further modified by error accumulation.

Error Accumulation and Modification

As you review the MTUSAV log file, some incidents may be reported with a severity other than you expect. As described below, four procedures can modify the severity of a particular incident: two can boost the severity, and two can reduce it.

A Boost: Error Accumulation

The total effect of a number of incidents of low severity may be larger then any one of them. Therefore, MTUSAV counts certain types of incidents, and triggers an incident with a severity of “error” if the total reaches a certain number. Any component incident that occurs after the triggering of “error” will report another “error.” The following MTUSAV.OPT settings control error accumulation. The “Components” are the incidents which are counted in that category:

MTUSAV.OPT Setting	Components	Notes
Max seq file in use count	Bkup seq file in use	
Max contig file in use count	Bkup contig file in use Bkup contig file hijacked	
Max rec in use count	Bkup record in use	
Max tape dir block not found count	Tape dir block not found	
Max read errors	Bkup seq file read error Bkup contig file read error Verif seq file read error Verif contig file read error	
Max bum block count count	Bkup seq file padded Bkup seq file truncated	
Max warnings before error count	Any incident with a severity of "Warning"	The adjusted severity must be "Warning,", not the default severity.
Max verif error count	Seq file verif error Contig file verif error	If the file is listed in MTUSAV.INF, the incident is not counted.

Error Accumulation Details

Except as noted, error accumulation has precedence over "directory date changed" processing and "file listed in MTUSAV.INF" processing. If an incident triggers an error accumulation, the other procedures cannot undo that severity boost.

Boost: Max Warnings Before Error

You can also set a number of less serious incidents, of any type (except as noted below), which will cause MTUSAV to report an error. This is controlled by the "Max warnings before error" setting in MTUSAV.OPT. When the total number of notes and warnings equals or exceeds this value, MTUSAV reports an error. Subsequent incidents of Warning or Note severity are also reported as having Error severity.

There are two exceptions to this rule. Neither of these incidents are counted:

- Incidents which are not reported because the file is listed in MTUSAV.INF.
- Directory date change warnings (AMOS 2.x extended directories only).

Be careful with this setting, as incidents of both Warning and Note severity are accumulated.

Reduction: Directory Date Changed

Under AMOS 2.x, files in extended directories store the date they were created and last modified. If either of these dates changes between backup and verification, it indicates someone has edited, or deleted and recreated, the file. In this case, even if the file size has changed, or the data on the disk doesn't match the data on the tape, the incident is reported as a "Verif dir date changed" note, rather than a size or data mismatch, either of which has a default value of warning.

You can change the severity of all three incidents involved (dir date changed, size mismatch, and data mismatch) in MTUSAV.OPT. The directory date mismatch severity is used only if it is less than the other incident encountered.

Reduction: File is Known to MTUSAV

If a file is listed in MTUSAV.INF, the incidents listed in “Omitting Files from Error Checking: the MTUSAV.INF File” are reported with the severity defined for “known files” in MTUSAV.OPT, as long as this is less than the severity they would otherwise have. For more details on known files and MTUSAV.INF, see page 15.

MESSAGES

A "date" or a "time" must be specified for all "date and time" switches.

You specified a /BEFORE or /AFTER switch without also specifying both a date and time.

All "date and time" switches must be in absolute format.

The /BEFORE or /AFTER switch must include a date and time in absolute format, not a relative format.

%Backup date update aborted by ^C

You aborted the updating of the disk directory entries for each file backed up. Each disk which has an extended directory structure records the time and date of the last backup of each file. You aborted this update process, but any transfer to tape and verification prior to the abort is complete.

?Cannot ASSIGN devn: - reason
?Cannot DEASGN devn: - reason

MTUSAV could not get exclusive use of the tape unit. Someone else has been assigned exclusive use. Try using MTUSAV later. You can find out which job has the tape assigned by using the DEVTBL command.

%Cannot locate TAPSER.LIT in spawned task's partition.

The background task launched by MTUSAV could not load and launch TAPSER.LIT. The backup will be aborted.

?Cannot use filename - reason

MTUSAV encountered an error while accessing one of its work files. If ***filename*** is a .TOC (table of contents) or .VER file, the backup and verification proceed and the number of verification errors encountered will be correct, but details on all the errors will not be available. If filename is a .LOG file, further log details are not recorded in the .LOG file, but still display on the screen.

?Data verification failure in file fspec

The block-by-block comparison of a file on tape against its corresponding image on disk failed. The file on tape is not identical to the now-current contents of the file on disk. Verification continues from the start of the next tape file.

%Drive is not on-line and at load point.
% Please correct, then press RETURN when ready.

Correct the problem and continue.

%Error reading MTUSAV.TOC file.

An error occurred while MTUSAV was trying to read the TOC file. The error listing is not complete.

%Error reading MTUSAV.VER file.
%Listing of files that failed to verify is incomplete.

An error occurred while MTUSAV was reading the file containing details of verification errors. The list of verification errors is incomplete, although the count of verification errors is accurate.

%Error listing terminated.

You pressed Control-C during the file error listing.

?Error reading disk file

During verification, MTUSAV cannot read a disk file for comparison against a tape file. A verification error is raised, and verification continues from the start of the next tape file.

nn errors caused by file or record locks

nn contiguous (random) files were either locked exclusively by another job, or had one or more records locked when MTUSAV tried to save those records to tape. In either case, MTUSAV read the affected blocks by bypassing AMOS's record locking system. Although the data was saved correctly to tape, the consistency of data saved is questionable, as the file might have been undergoing update as it was being backed up.

The file list will be incomplete if there was an earlier error in the MTUSAV.TOC file.

nn errors caused by file verification failure

During verification, MTUSAV either encountered an error trying to open a disk file, or the contents of the disk file did not match the file on the tape. If no other errors were reported, and no other job was active between the backup and the verification, then the backup did not correctly save the data in this file. More likely is that another message will indicate the cause for the verification error (for example, there was another job writing to the file as it was being saved).

The file list will be incomplete if there was an earlier error in the MTUSAV.TOC file.

nn errors during a directory scan for devn:[p,pn]

There was a disk device error while MTUSAV was searching for files in the AMOS disk directory structure. This aborts the MTUSAV. The backup is incomplete—not all the files are transferred to tape. If this occurs in the backup phase, verification is not attempted. Check the tape carefully to see if it can be used to restore those files saved to tape prior to the disk error.

nn errors while opening a file

nn files reported an error when MTUSAV tried to open them for reading. A list of files causing the errors follows this message. Listed sequential files were not transferred to the tape, and do not generate a verification error. Listed contiguous (random) files are transferred if the error is "File in Use." MTUSAV backs up the file block-by-block without regard for record locking. Therefore the data integrity of the tape file is in question. If a contiguous file signals a different error, it is not transferred to tape.

The file list will be incomplete if there was an earlier error in the MTUSAV.TOC file.

nn errors while reading a file

nn errors were encountered reading files. The files with errors are listed after this message. All files listed are corrupt and should not be restored. So the backup can continue, MTUSAV truncates or extends the listed sequential files on the tape to match the number of blocks in the disk directory entry for the file. For contiguous (random) files, MTUSAV could not read a particular block for reasons other than record locks. It writes a dummy block to act as a placeholder for the block where the error occurred.

The file list will be incomplete if there was an earlier error in the MTUSAV.TOC file.

%Field size exceeded, please re-enter.

Re-enter the information, using less characters.

%File size in directory and on disk do not match (bum block count)

The number of blocks as defined by the directory entry for a sequential file does not match the number of blocks read from the disk. If the number of blocks read is less than the number of blocks in the directory entry, the file is padded with dummy data to the size defined in the directory entry. If the number of blocks read is more than the number of blocks in the directory entry, the file is truncated to the size specified in the directory entry. In either case, the file is corrupt.

?File size on tape does not match disk file.

During verification, the size of the file on tape does not match the file on disk. Verification continues from the start of the next tape file.

%File verification phase aborted -- not all files have been verified

You aborted verification by pressing ^C. Not all the files on the tape have been checked against the same files on disk.

?Insufficient memory to run MTUSAV

See your System Operator for help in increasing your memory partition.

Multi-reel backup (tape spanning) is available if needed

This informational message confirms that the hardware and software combination in use supports multi-reel backup if needed.

?Multi-reel backup (tape spanning) is not supported by this tape device

The selected tape device does not support multi-reel backups. If the backup overflows the tape, it will be aborted without any verification phase, and not all files will be backed up.

%Not all files have been updated with correct backup date

Either you aborted the backup date update phase with a ^C, there was an error in reading the MTUSAV.TOC file, or the .TOC file was prematurely closed by an earlier error. Only those files on a disk with an extended directory structure whose details were successfully recorded and read back from the TOC file will have their last backup date updated.

%Please mount first reel in save set and press
% RETURN to continue, or control-C to abort verify

A multi-reel set was created during the backup. The verification phase is starting, and you need to load the first reel into the drive.

%Reading record without regard to locking, which may compromise file integrity

While reading a contiguous (random) file, a block was locked by another user. MTUSAV saves the block by bypassing the record lock. However, if the other user was modifying the file, this may compromise the data integrity of the tape file.

%Tape contains partially copied files

Either an error occurred, or you aborted the program with a ^C, while the backup phase was in progress. The tape does not contain all the files that match the command line specification. The last file transferred to tape may be incomplete.

?Tape directory block not found where expected

During verification, there is a problem with the file format on the tape. At what should have been the directory block for a file on the tape, MTUSAV found a different type of block, probably a data block. At a minimum, the previous file is corrupt, and possibly the rest of the tape is corrupted as well. Verification continues from the start of the next properly-detected tape file

If you receive this error, we strongly recommend you check the disk file structure using DSKANA, and clean the tape drive heads. The tape may be damaged and need replacing. The backup may need to be performed again.

%Tape full: multi-reel backup is not supported
% Backup is being aborted

All the files you specified cannot fit onto a single tape. A multi-reel backup cannot be done with the hardware and software combination being used. The backup is aborted without a verification phase. Not all files are backed up.

%Tape full: running under Task Manager
% Cannot change tape: backup aborting

All the files you specified cannot fit on a single tape. A new tape cannot be loaded as the backup is running under control of the Task Manager. The backup aborts without any verification phase, and the Task Manager control file continues to execute.

%Tape is file protected - please insert a write ring or
% mount a different tape, then press RETURN when ready.

Make sure you have the correct tape, then install a write ring to continue.

%Tape is full, please mount another tape then press C to
% continue. Pressing Control-C will abort the backup
% and leave the tape with partially copied files.

Remove the tape, label it, and mount another reel to continue the backup. If you want to stop the backup, you can use CTRL/C at this point—but be aware the tape you just created **may not be restorable.**

%Tape is not from the same save set
% Please correct, then press RETURN when ready or press control-C to abort

The tape you mounted is not from the correct save set. Replace it with the correct reel from the correct save set.

%Tape is out of sequence -- please mount the correct tape
Current reel is mm, reel nn is required

You've mounted the wrong tape; it is from the current save set, but is the wrong reel number. Replace it with the correct tape.

?TAPSER.LIT is out-of-date. You must use version 3.0(126) or later

The version of TAPSER.LIT you are using (usually held in SYS:) does not support driver interrogation for tape spanning features. Tape spanning is not allowed, even if the tape device supports it. If tape spanning is not required on this backup, the backup will proceed normally. Update your software to the latest version.

?Transfer was aborted with errors

The backup was aborted due to a tape or disk directory search error. The backup is incomplete, with one or more selected files not on tape. The tape may not be restorable, as the end-of-transfer protocol may not have been written. The tape needs careful inspection to determine its usefulness.

Transfer was completed without DIR, OPEN, READ, or LOCK errors

The specified files were transferred to tape without any directory search, file in use, device, bum block count, or record-in-use errors. Errors could still be found during verification (if one was requested).

?Transfer was completed with errors

One or more errors were encountered in transferring the specified files to tape. The backup completed, but one or more files were not correctly backed up. A list of the errors follows this message.

?Unable to continue writing to tape - [explanation]

Correct the problem and continue. See your System Operator for help.

?Unable to open disk file

During verification, a file on the tape either no longer exists on the disk, or there is a problem opening it. Verification continues from the start of the next tape file.

?Unable to spawn slave task.

See your System Operator—the number of jobs in the JOBS statement probably needs to be increased to be two or three more than the number of job names listed in the JOBALC statement(s).

?Unit number must be between 0 and 7.

Re-enter a correct number.

Updating backup time and date in disk directory
Press control-C to skip.

The backup has completed and MTUSAV is now writing the backup time and date to the file directory on an extended disk. This can take quite some time for large backups. You can press CTRL/C to abort the process. Your backup is complete. However, the "last backed up" date and time for these files will not reflect this backup.

?User aborted execution with ^C

You ended MTUSAV by pressing ^C. The backup and verification procedure (if any) will abort before completion. The tape may contain partially copied files.

%User aborted execution at reel changeover

You ended MTUSAV when it asked you to mount a new tape. The backup and verification procedure (if any) will abort before completion. The tape may contain partially copied files.

MUSER

FUNCTION

Defines and maintains the list of valid user names.

CHARACTERISTICS

MUSER is re-entrant and re-usable. You must be in DSK0:[1,2] to run it. When the user names feature is in operation, everyone who uses the system has an entry in the list of valid user names. To create this list, the System Operator defines each user by means of the MUSER formatted screen displays. Each person is given a unique user name to use when logging in to the system. Every user is also assigned a root disk account. At log in time, the user definition is made available to system and application programs. The programs rely on this information to support each user at that user's level of knowledge.

You can use MUSER to view the list of active users, to update the list, and to track each user's system usage. MUSER uses function key translation tables with the extension of .AMX in DSK0:[7,0].

OPERATION

Log in to account DSK0:[1,2], and enter MUSER:

```
LOG OPR: RETURN
MUSER RETURN
```

USER brings up the main menu and directs you. You may add, change, or delete a user definition and display the list of active users.

When you choose the add or change command, MUSER displays a data entry form. Enter data values in the appropriate fields as described below. The MENU function key (F13 on most keyboards) or pressing ESC twice returns you to the main menu.

Fields of the First Screen:

User Name The symbolic name for the user is a string of printable ASCII characters, including spaces. The maximum length is 20 characters. Letters are stored and displayed in upper or lower case, but are compared independent of case.

Password The “user password” is independent of any password assigned to a particular PPN. This optional field provides extra security.

Root Account

The root account is the device and disk account which is the user’s central or home account. Because a user may have many accounts for different projects, the way to identify him personally is by his root account. This is where the user can touch base regularly to read reminders and messages. In the case of a user who is defined but not allowed to log in to your system, assign “REMOTE” for his root account. With a network, you can send electronic mail to users on remote systems without allowing them to log in to your own system.

Mail Account

Every AlphaMAIL user has four mail accounts. This field includes the first account where a user’s mail will be delivered.

Privileges

This field defines the default privileges this user will be assigned at login time. The possible privileges are: read system memory, write system memory, read physical disk blocks, write physical disk blocks, change privilege levels, and use diagnostics. If the user has a privilege, MUSER displays it in “bright” text; otherwise, MUSER displays it in “dim” text. On the basis of privilege, certain programs will deny the user access to certain functions. To change the setting of a privilege bit, move the cursor to the setting you wish to change by using the arrow keys. Pressing the SPACE BAR toggles the privilege from one state to the other.

Class of user

Class is a value in the range of 0 to 100. It indicates what kind of access the user has (where they can log into and what they can do—see your *System Operator’s Guide* for more information). For example, a system programmer might belong in class 100, a clerical worker in 20.

Experience Level

A value in the range 0 to 100 defines the amount of “experience” a user has with the system. A long-time user of the system might be assigned 95 or 100, a novice, the value 10. This value determines how much prompting and help information is given to the user.

Statistics

Several statistics are maintained on each user by the system. These are displayed by the MUSER program and are intended to be used by billing or charge-back systems for the purpose of monitoring system use on a user-by-user basis. These statistics include the total CPU time used, the total connect time, the total number of disk reads and writes, and the total number of pages printed.

Job Priority

Priorities range from 1 (lowest) to 127 (highest). Default is 13.

File Protection

Sets the default File Protection level for newly created files. See your *System Operator’s Guide* for more about file protection.

Language

The name of the language specified in this field must be one of the languages available as part of the system. The default is ENGLSH.

Prompt

May be up to 19 characters in length. Default is a period. If PROMPT.SYS is loaded in system memory, you may use any of the following symbols to display variable information as part of the prompt. This is called an interpreted prompt and may result in a displayed prompt longer than 19 characters.

$:	Current device and drive number.
$C#	Sends TCRT -2,#.
$E	Ersatz name of current account. If none, same as $:$P.
$LG	Name of current language.
$NA	Same as $NI=$NP,$NB.
$NB	Baud rate.
$ND	Terminal driver name.
$NI	Interface driver name.
$NJ	Job name.
$NM	Modem driver name.
$NP	Interface driver port number, in decimal.
$NS	Operating system name.
$NU	User name.
$P	Account number, in brackets.
$SC	AlphaNET cpu-ID.
$SE	Ersatz name for AlphaNET cpu-ID. If none, same as $SC.
$SV	Monitor version.
$UF	Free memory in user partition, in KB.
$UM	Total memory in user partition, in KB.
$UX	Radix. ^H for hexadecimal, ^O for octal.
$VB	Set to bright display.
$VD	Set to dim display.

You can also change the AMOS prompt using the SET command. See the SET reference sheet for more information about interpreted prompts.

Job Settings

MUSER displays the current settings. The settings are: OCTAL or HEX; DISK-ERROR or NO-DISK-ERROR; VERIFY or NO-VERIFY; CONTROL-C ON or CONTROL-C OFF; GUARD or NO GUARD; ECHO or NO ECHO; and LOCK or NOLOCK, and ELOCK or NOELOCK. These are the same settings that may be changed by the SET program from AMOS command level. To change these settings, use the arrow keys or RETURN to move to the item you wish to change. Press the SPACE BAR to change the setting from one state to the other.

MESSAGES

?Duplicate user name - choose another name

You entered a user name that already exists. Find another name and try again.

?Not enough disk space to save updated user file

MUSER was unable to finish due to insufficient disk space. Exit from MUSER, erase some files you no longer need, and try again.

?Not enough memory to run MUSER

You will need approximately 45K. Run MUSER from another job, or allocate more memory to your job.

?Unrecognized command - type HELP for more information

The word you entered is not one of the MUSER commands. Read the menu and try again.

M68

FUNCTION

Assembles an assembly language program file into an unlinked machine language file.

CHARACTERISTICS

M68 is a full macro-assembler. It assembles a source text file (.M68 file) into an intermediate object form (.OBJ file) that can be linked into an executable machine language program (.LIT or .OVR) file. M68 understands nested macro calls, nested conditionals, and program segmentation (using overlay statements and AUTOEXTERN, EXTERN, and INTERN statements).

M68 is not re-entrant or re-usable, and so can't be loaded into system memory.

M68 runs in five distinct phases, some of which are called in response to optional switches or special situations. If your file contains no internal or external references, M68 automatically calls the linkage editor to link your program as Phase 4 of the assembly; otherwise, you must explicitly use the LNKLIT or SYMLIT commands to create a resolved, executable program from the .OBJ file created by M68.

For information on using the macro-assembler, LNKLIT, and SYMLIT, see your *Assembly Language Programmer's Manual.* It also contains information on the object file library generator, LIBLIT, and the global cross reference generator, GLOBAL.

FORMAT

```
M68 filespec{/switches}
```

filespec selects the source file you want to assemble, and the optional ***switches*** select the M68 options you want to use.

DEFAULTS

M68 assumes a file extension of .M68. Unless you specify one of the listing switches, M68 does not provide an assembly listing. The device and account default to where you are logged.

OPTIONS

You may specify multiple switches by entering them after a single / symbol at the end of the command line.

/B text Generate a bottom footer title on every page of the listing using ***text*** as the title. Must be the last switch on the command line.

/C Include conditionals in the assembly listing (conditionals are usually suppressed).

/E Write to assembly listing only lines containing an error.

/L Generate a listing file by calling Phase 3 during assembly. Creates an output file with the same name as your source file but a .LST extension.

/M20 Allow assembler to accept 68020 instructions and addressing modes. Syntax error S appears if you do not use and such code exists.

/N Don’t force assembler to fold lower case to upper.

/O Use the current object file by omitting assembly Phases 1 and 2. You must use either the /T, /L, or /R switch with this switch—/L is default.

/R Generate a cross-reference listing.

/T Display assembly listing on your terminal.

/V{a}:x Lets you specify a value on the M68 command line to be examined during the assembly process. ***a*** specifies type of value, and ***x*** the value.

/X List all macro expansions (usually suppressed).

OPERATION

Enter M68 followed by the specification of the file you want to assemble. For example:

```
M68 MATH.M68 RETURN
```

If you want to select one or more of the M68 options, specify the appropriate switches at the end of your command line after a single / symbol. For example:

```
M68 MATH/RT RETURN
```

As it assembles your file, M68 reports on the status of the assembly process. It tells you what errors occurred, how large your program is, whether it is copying from any copy files, and if any symbols have been automatically EXTERNed.

M68 produces a .OBJ file of the same name as the file you specified on the M68 command line. If M68 does not automatically call Phase 4 to create an executable .LIT file, you must use the linkage editor, LNKLIT (or SYMLIT).

MESSAGES

You can see these errors in your assembly listing:

A Branch address was out of the 127-byte range.

B Boundary error—a word operand was on an odd byte address.

C Conditional statement syntax error.

D Duplicate user symbol (defined more than once).

E User generated error.

I Illegal character in source line.

M Missing term or operator in operand or expression.

N Numeric error, a digit out of the current radix range.

O The specific operand is illegal when used with this instruction.

P An expression which had to be resolvable on the first pass of the assembly could not be resolved.

Q Questionable syntax. A general catch-all error code.

R A register expression not in the range of 0-7.

S Indicates offset requiring more than 16 bits—must use /M20 switch.

T Source line or operand terminated improperly.

U Undefined user symbol during Pass 2.

V Absolute parameter value out of its defined range.

X Assembler system error, please notify Alpha Micro.

You may see the following messages during the program assembly:

%Assembly Fold - No Fold switch doesn't match .UNV file

You used /N when the .UNV file was being created, but you are not using it on the current assembly, or vice versa. Symbols may be undefined due to case differences—use /N, or compile without /N, as appropriate to how you first did.

?Cannot OPEN [device-name] - invalid file name

Check your syntax and try again.

?Copy file [filespec] not found

The file you wanted to COPY was not where you said it was. Check your syntax or use the DIR command to find the file, and try again.

?Expression stack error

This is an internal M68 error. Check your source program to see if you made any errors in specifying expressions.

?File specification error

You made a mistake in your file specification. Check your syntax and try again.

?Invalid .UNV file version number - aborting

Re-create your .UNV file by re-assembling the source program using the current version of M68.

?M68n.OVR not found

n is a number from 0 to 3. M68 can't find one of the overlays that are a part of M68. Check to see if the specified overlay is in DSK0:[1,4]. If not, use the DIR command to look for the overlay—if you find it in another account, copy it to DSK0:[1,4]. If it is in DSK0:[1,4] and you still get this message, or if you cannot find the file, see your System Operator.

?No ENDM statement

You left off the final statement, "ENDM," in a macro definition. Check your source program.

%Old format .UNV file - assembly being done with No fold option

Your .UNV file was created under an older version of M68 that did not allow lower case in symbols, and you are using /N. This could cause problems with symbol definitions. You may wish to re-compile without /N, or change your source program.

?Search file [filespec] not found

The file you wanted to SEARCH was not where you said it was. Check your syntax or use the DIR command to find the file, and try again.

?Sync error

This message probably means you are using an object file generated by a different version of M68 than the one you are using now, and you have specified the /O assembly switch. Or, you may have found an undiagnosed error in M68. Check your source code—if you see no obvious errors, try to re-assemble the program again without using the /O switch (thus building a new object file).

OSINST

FUNCTION

Lets the System Operator enter the Product Installation Code (PIC) when new versions of AMOS are installed.

CHARACTERISTICS

OSINST is re-entrant and re-usable.

You must be in DSK0:[1,2] (OPR:) or DSK0:[1,4] (SYS:) to run OSINST.

FORMAT

```
OSINST
```

OPERATION

Log into SYS: or OPR: and enter OSINST:

```
LOG OPR: RETURN
OSINST RETURN
```

A screen appears directing you to enter the PIC. When entered, AMOS asks you to confirm you wish to enter the PIC, and, if so, tests the PIC for correctness. Once the PIC is confirmed, you can continue the installation.

MESSAGES

?PIC code does not verify
?? will need actual error...

Check to be sure you entered the correct number. If problems persist, contact your Alpha Micro representative.

PARITY

FUNCTION

Turns on parity error detection for most Alpha Micro memory boards and Central Processing Units.

CHARACTERISTICS

PARITY is re-entrant and re-usable. Most Alpha Micro memory boards and CPUs have a parity error detection capability which you can turn on by using PARITY. For more information, see your *Alpha Micro Integrated Systems User's Guide.* If you don't use PARITY, the boards are not able to detect and report parity errors.

You will probably want to put PARITY in your system initialization command file. For information on editing the system initialization file, see your *System Operator's Guide to the System Initialization Command File.*

OPERATION

Enter PARITY at AMOS command level:

```
PARITY RETURN
```

MESSAGES

See your *System Operator's Guide* for information on what happens when a parity error occurs, and how to handle such a situation.

PASS

FUNCTION

Changes your current account password.

CHARACTERISTICS

PASS is re-entrant and re-usable. Protects system security by not displaying your old or new password.

PASS cannot change the password of an account on a write-protected disk, so make sure the correct device is write-enabled. A password must be six characters or less in length. PASS doesn't check the length of the password you enter, but cuts it off at the sixth character.

FORMAT

```
PASS {devn:}
```

devn: is the specification of the logical device containing an account with the same PPN as you are logged into.

DEFAULTS

PASS won't allow any other account except the one you are logged into. The devn: defaults to the device you are logged into.

OPERATION

Enter PASS, optionally followed by a device name. For example:

```
PASS DSK1: RETURN
```

PASS asks you for your old password (if one exists) and your new password. Then it asks you to verify your new password (in other words, to type your new password again). PASS then changes your password.

MESSAGES

?Account number invalid

Check your syntax, and remember you can't password an account you are not logged into.

?Bad password

You entered your old password incorrectly or made a typing mistake. PASS did not change your old password. Try again.

?Cannot write [device-name] - write-protected

Remove the write-protection and try again.

?PPN has been deleted

While you were running PASS, someone deleted the account you are logged into. See your System Operator about re-creating your account.

PATCH

FUNCTION

Installs software patches into existing machine language programs.

CHARACTERISTICS

PATCH is re-entrant and re-usable. The patch you install will normally be supplied to you by your dealer in either printed form or on recording media. If the patch is given to you in printed form, you will need to enter the patch into the computer using AlphaVUE before you use PATCH.

Patch files are special macro assembler source files. PATCH assembles the patch file using M68, and then uses PTCH.LIT to insert the changes into the existing program. PATCH checks for the proper hash total and version number of the existing file and, once the patch has been completed, it also makes sure the new hash total and updated version number are correct. If for any reason the hash total or version number is wrong, no patch is done, and your original program file remains unmodified.

FORMAT

```
PATCH existing-program WITH patch-file
```

existing-program is the program you want to patch, and ***patch-file*** is the source file containing the patch to be made. The default existing program extension is .LIT; the default patch file extension is .M68.

OPERATION

Enter PATCH, the name of the original program, **WITH**, and the name of the patch program. For example:

```
PATCH TEST WITH TESTP RETURN
```

PATCH displays information as it processes. You will see hash totals for the old and new (patched) version of the program you patched.

MESSAGES

?Assembly errors exist in patch file

The patch file contained errors. If you typed in the patch file from a written record, make sure you entered the patch information correctly. If the patch file came from Alpha Micro, see your representative for help.

?Bad object format

The data in the patch object (.OBJ) file has been damaged. Make sure you entered the patch information correctly in the patch file.

?Expression error in patch file

The patch file contains errors. Make sure you entered the patch file correctly. Your patch file may have tried to reference an external symbol within an expression.

?Fatal error - Overlays of code are not permitted

The changes within a patch file must occur in sequential order; make sure you entered the patch information correctly in the patch file.

?File being patched has wrong hash code

The file you want to patch doesn't have the same hash total the patch program was designed for—see if you are patching the correct file (there may be another version of the program on your system elsewhere), or see your Alpha Micro representative to get the proper patch version.

?File being patched has wrong version

The file you want to patch doesn't have the same hash total the patch program was designed for—see if you are patching the correct file (there may be another version of the program on your system elsewhere), or see your Alpha Micro representative to get the proper patch version.

?Illegal assembler pseudo-op appears in patch file

Only certain assembler pseudo op-codes are allowed within patch files. Make sure your patch file doesn't contain the following conditional assembly pseudo-ops: ASECT, DSECT, PSECT, SYM, NOSYM or INTERN.

?Incompatible object file version

The versions of M68.LIT and PTCH.LIT on your system are not compatible. See your Alpha Micro representative for help.

?Patched file has wrong hash total

Inserting the patch into the existing program file did not give the proper results. Make sure you are using the proper versions of both the program and patch files, and check your patch file.

PLAYCD

FUNCTION

PLAYCD lets you play music or other audio CDs using the CD-ROM drive attached to your AMOS computer.

CHARACTERISTICS

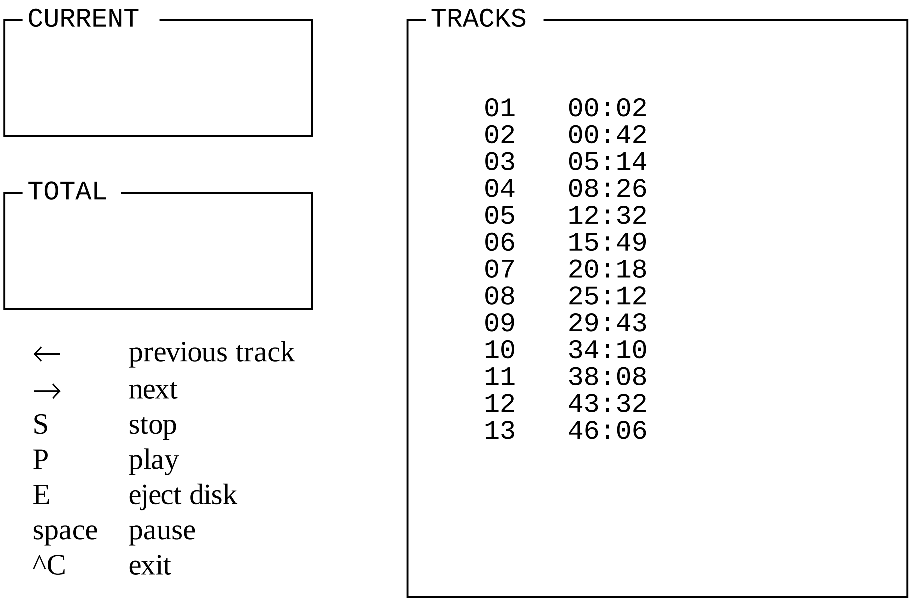
PLAYCD is reentrant and reusable. While it may work with any SCSI-2 compatible CD-ROM drive, it has been tested only with the Toshiba Model TXM3401E1 portable CD-ROM drive.

OPERATION

Place the CD you want to listen to in the CD-ROM drive and, from AMOS command level, type:

PLAYCD RETURN

A menu which allows you to control the CD-ROM drive appears on your screen. You can make the CDROM drive play, stop, eject, jump to the next track, return to a previous track, pause, or exit by pressing the key indicated in the menu. The PLAYCD menu is shown below:



```
CURRENT

TOTAL

TRACKS
01   00:02
02   00:42
03   05:14
04   08:26
05   12:32
06   15:49
07   20:18
08   25:12
09   29:43
10   34:10
11   38:08
12   43:32
13   46:06
```

←	previous track
→	next
S	stop
P	play
E	eject disk
space	pause
^C	exit

If you want to run another program while listening to the CD, press CTRL/C. You return to the AMOS prompt and the CD-ROM drive continues to play. You can re-enter the PLAYCD command at any time, allowing you to change tracks, eject the disc, stop the audio, etc.

If you enter the PLAYCD command when you don't have a CD-ROM drive attached to your computer, you see this message:

```
Free SCSI IDs: xx xx xx
Connect a CD-ROM drive with its SCSI ID set to one of the above IDs.
Press RETURN when ready.
```

Connect the CD-ROM drive to the SCSI bus and press RETURN to play a CD, or press CTRL/C to return to AMOS command level.

MESSAGES

?AlphaCD is installed - please uninstall ACD before using PLAYCD

PLAYCD has detected that an AlphaCD CD-ROM is still installed on the system. Use ACD/U to unmount the AlphaCD before using PLAYCD

?CD-ROM drive reported an unknown error (Sense = n)

The CD-ROM drive encountered an error. Check that the CD is undamaged and free from scratches.

?Impossible error - this CD contains no tracks

On querying the CD-ROM for its table of contents, the CD-ROM reported that it is empty.

?No free SCSI addresses - you must remove at least one SCSI device
?in order to use PLAYCD

All SCSI addresses on the SCSI bus are in use, and none of them contains a CD-ROM. As there is not an empty SCSI address for the CD-ROM player, PLAYCD cannot work. Free up a SCSI address and try again.

?This CD-ROM drive is not SCSI-2 compliant and therefore cannot be used

PLAYCD requires a SCSI-2 CD-ROM player. The player reported that it is not a SCSI-2 device.

?You must install a SCSI dispatcher prior to using this program

You must add the appropriate SCSI dispatcher to your system's initialization file, and reboot the system, before using PLAYCD.

POP

FUNCTION

POP works with PUSH, to return you to a previously recorded account.

CHARACTERISTICS

POP is re-entrant and re-usable. If you do not include an option, POP returns you to the last account you were in. You must have SMEM defined in your system initialization command file for this feature to work.

FORMAT

```
POP {option}
```

OPTIONS

A	Clear all recorded accounts.
S	Swap with last logged account.

OPERATION

Enter POP, and perhaps an option:

```
POP RETURN              Moves back one account
POP S RETURN            Swaps with previous account
```

POP then returns you to the proper account (as defined by the PUSH you used).

MESSAGES

?Account number invalid

Make sure you gave the correct device, and the account number is in the proper form, and try again.

?All POPped out!

There is no account currently PUSHed to go to.

?Already logged in under [account]

You tried to log to where you are currently logged.

?Disk not mounted

Mount the disk and try again.

PPN

FUNCTION

Displays a list of the account numbers on a specific device.

CHARACTERISTICS

PPN is re-entrant and re-usable. The device holding the Master File Directory you want to display must be mounted. PPN lists the account numbers in sorted order, but this is not necessarily the order they are in the Master File Directory.

FORMAT

```
PPN {devn:}
```

devn: is the device whose account numbers you want to see.

DEFAULTS

If devn: is not entered, PPN defaults to the current device.

OPERATION

Enter PPN and a device name. For example:

```
PPN DSK1: RETURN
```

MESSAGES

?Cannot INIT [device name] - device does not exist

Check your syntax, or use DEVTBL to see a list of the current devices on your system.

?File specification error

Try again, entering a valid device name.

PRINT

FUNCTION

Sends files to a printer, or edits the memory-based print spooler entries.

CHARACTERISTICS

PRINT is re-entrant, re-usable, a wildcard command, and recognizes ersatz devices. It sends a print request to the line printer spooler program; the spooler places your request into a queue (or waiting line). When a printer becomes available, the spooler prints your file. You may have several requests in the printer queue waiting for available printers. Use the SET command to define the type of form to be mounted on a specific printer on the system.

FORMAT

```
PRINT {/switch}{printer=}{filespec{,filespec...}}{/switch}
```

printer is the specification for a printer, ***filespec*** is a file to be printed, and ***switch*** is an option request.

If you use PRINT/K while connected to another computer using a version of AlphaNET earlier than 2.2, the /Q switch has no effect.

DEFAULTS

The default printerspec is the printer with the least number of blocks waiting in the queue to be printed (unless the System Operator has used the DEFAULT command in the spooler parameter file to define another printer default).

The default switch settings depend upon the specific printer being used. The defaults for each printer are set by the System Operator. The default filespec is a null name and .LST extension. The initial default device and account is the account and device you are currently logged into.

OPTIONS

All switches may be abbreviated to any unique characters.

/BANNER{text}	Print a banner page up to 50 characters at listing front. Operation switch.
/NOBANNER	No banner. Default, operation switch.
/COPIES:n	Number of copies to print. File switch.
/DELETE	Delete file after print. File switch.

/NODELETE	Don’t delete. Default, file switch.
/FORMFEED	Print a final form feed at each listing end. File switch. Abbreviation is /FF.
/NOFORMFEED	No form feed. Default, file switch.
/FORMS:form	Specify form needed. If form is not on, notifies operator job. File switch.
/HEADER	Print a page header at top of each page. File switch.
/NOHEADER	No page headers. Default, file switch.
/KILL	Stop file from printing. Operation switch.
/LPP:n	Maximum lines per page. File switch.
/QUERY	Confirm before printing/killing a file. File switch.
/NOQUERY	No confirmation. Default, file switch.
/WAIT	Wait to print if queue is full. Ties up terminal. Operation switch.
/WIDTH:n	Page width (1-132 characters). File switch.

OPERATION

To find out what is in the print queue:

```
PRINT RETURN
```

This command lists the contents of the queue for all of the printers defined on the system. If you wish to see the contents for a single printer, enter PRINT followed by the name of the printer whose queue you want to see, and an equal sign.

The display you see tells you what files are waiting to be printed, what form-type they are to be printed on, how many blocks total are in the queue, how many blocks remain for each file, how many copies of each file are to be printed, and which file is currently being printed. It also displays which options have been selected for each file. If there are no print requests in the queue, you do not see any files listed.

To send files to the printer with the least number of blocks in its queue (or to the default printer set by the System Operator), simply enter PRINT followed by the specifications of the files you want to print. For example:

```
PRINT *.LST RETURN
```

If you wish to send files to a specific printer, enter PRINT, the name of the printer you want to use, an equal sign, and your list of files. For example:

```
PRINT DRAFT=BACKUP.*,S?CFIL RETURN
```

MESSAGES

?A device must have network access enabled to be able to print from it

You have specified one or more files on a device that has "No Network Access" set. You cannot print files from such a device. Use the SET command to enable network access, then use the PRINT command again.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see what devices are on your system.

?Cannot INIT [device-name] - device not mounted

Mount the device and try again.

?Device or [P,PN] on output are illegal

You can only specify a printer name on the left of the equals sign.

?Fatal ITC error n
?Unknown error n returned by remote system

The printer you specified is located on a remote system. On submitting the print request, a network or remote system error occurred. Try the print request again. If the problem persists, contact your System Operator.

?Input file error - [error message]

An error occurred while your file was printing. Correct the situation indicated by the error, and print the file again.

?Invalid argument for COPIES

You did not specify a colon followed by a number for the /COPIES switch, or the number specified was zero or more than 255. Re-enter the command with an adjusted COPIES value.

?Invalid argument for FORMS

You did not follow /FORMS with a colon and the forms name. Re-enter the command with a corrected /FORMS switch.

?Invalid argument for LPP
?Invalid argument for WIDTH

You did not specify a colon followed by a number for the switch. Re-enter the command with the correct switch format.

;LPTSPL - Please mount form [form-name] on [printer-name]

The spooler operator job gets this message if you specify a form-type that is not defined as being mounted on the printer. The spooler operator should put the proper form on the printer.

?More than one printer specified

You specified more than one printer on the command line (to the left of the equals sign). Re-enter the command specifying only one printer.

?No files in print request

PRINT was not able to find the files you specified. Check the command line again, and make sure the device and account specifications are correct.

%No spooler allocated

A print spooler has not been installed on your system. Ask your System Operator to install one.

?Not enough free queue blocks for entire request

Each file in the print request uses a system resource called a queue block. There are not enough queue blocks for your entire request to be satisfied. Wait until some files have printed, then resubmit the PRINT command for those files which were not selected. Including the /WAIT switch pauses the processing of the print requests until more queue blocks are available.

?Output printer not found on remote system

There was no active printer of the given name on the remote system you specified. Choose another printer name.

?Printer not found

Check your spelling or enter PRINT at AMOS level to see what printers are defined on your system.

?Remote printer chains to another remote printer

The printer network is configured incorrectly. The specified printer does not have a physical device associated with it. Instead, the remote system is trying to redirect the print request to another printer on another remote system. This is invalid. Contact your System Operator.

?Remote print spooler not responding

Either the remote system or the spooler on the system cannot be contacted.

PRNT

FUNCTION

Sends files to a printer, or edits the printer queue.

CHARACTERISTICS

PRNT is re-entrant, re-usable, a wildcard command, and recognizes ersatz names. It prints files using the Task Manager print spooler. The spooler places your request into a queue (or waiting line). When a printer becomes available, the spooler prints your file. You may have several requests in the printer queue waiting for available printers.

Use the SET command to define the type of form to be mounted on a specific printer on the system. See the SET reference sheet for information on setting forms.

FORMAT

```
PRNT {/switch}{printer=}{filespec}{,filespec...}{/switch}
```

printer is the specification for a printer, and the ***filespecs*** identify the file(s) you want to print.

DEFAULTS

The default printer is the printer with the least number of blocks waiting in the queue to be printed (unless your System Operator has used the DEFAULT command in the spooler parameter file to define another printer default).

The default switch settings depend upon the specific printer being used (the defaults for each printer are set by the System Operator). The default filespec is a null name and .LST extension. The initial default device and account is where you are logged.

OPTIONS

With some switches, such as /SUSPEND and /START, where the PRNT command must identify page numbers, the file being printed must either have been formatted using TXTFMT, or have been specified with the /HEADER switch.

Placing NO before a file switch cancels the switch. The default switches are /NOB, /NOD, /FF, /NOFINISH, /NOH, /NOINFORM, /NOLIMIT, /ON, /NOQ, /NORESTART, and /NOSTART. Switches may be abbreviated to any unique characters.

/AFTER:{+}mm-dd-yy {@hh:mm{A/PM}}	File prints after date/time, which may be absolute (i.e. 4-13-88@3:17PM) or relative (i.e., +0-1-0@0:03). File switch.
/BANNER {:"text"}	Print a banner page at list front. ***"text"*** is printed on the bottom of banner page (up to 50 characters). Operation switch.
/COPIES:n	Number of copies to print. File switch.
/DELETE	Delete file after printing. File switch.
/FF	Print a form feed at list end. File switch.
/FINISH:page	Prints up to and including specified ***page***. File switch.
/FORMS:form	Specifies the ***form*** needed. If form is not on, prompts operator job. File switch.
/HEADER	Print a page header at top of every list page. File switch.
/INFORM	Sends you a message when file is done. File switch.
/KILL	Stops the file from printing. Operation switch.
/LIMIT{:n}	Sets (***n*** * file blocks) as maximum number of form feeds allowed. Limits endless loop form-feed errors. File switch.
/LPP:n	Maximum number of lines per page. File switch. Used with /H.
/OFF	Turns off specified printer. Files in queue will be printed. Can only be used by the System Operator. Operation switch.
/ON	Turns on a printer. Can only be used by System Operator. Default, operation switch.
/PRIORITY:n	Gives files queue priority ***n***. Default is 128; range is 1 to 255. The higher n is, the higher the file is in the queue. File switch.
/QUERY	Confirms before printing/killing a file. File switch.
/RESTART{:page}	Restarts file (at ***page*** or interrupted page) if system resets. File switch.
//SEQ:n/switch	Revises printing instructions for a file already in the queue, with sequence #***n***, by adding or replacing specified ***switch(es)***. Note two slashes. File switch. Do **not** enter a file specification when using the //SEQ switch.
/START:page	Start at specified ***page***. File switch.
/SUSPEND	Suspend file printing. File switch.
/REVIVE	Revives suspended file. File switch.
/WAIT	Wait to print if queue is full. Ties up terminal. Operation switch.
/WIDTH:n	Page width in characters (80-132). Used with /H. File switch.

OPERATION

To find out if any print requests are waiting in the printer queue:

PRNT RETURN

This command lists the contents of the queue for all of the printers defined on the system. If you wish to see the contents for a single printer, enter PRNT followed by the name of the printer whose queue you want to see, and an equal sign. For example:

```
PRNT DIABLO= RETURN
```

The display you see tells you what files are waiting to be printed, their sequence number and priority, what form-type they are to be printed on, which options have been selected for each, how many blocks remain for each file, how many copies of each file are to be printed, and which file is currently being printed. It also displays the total number of blocks in the queue.

If there are no print requests in the queue, you will not see any files listed. If you have more than one printer defined on your system, you will see a message at the bottom of the screen telling you to press the Return key to continue. When you do so, the next printer's queue listing is displayed.

To send files to the printer with the least number of blocks in its queue (or to the default printer set by the System Operator), enter PRNT and the files you want to print. For example:

```
PRNT *.LST RETURN
```

If you wish to send files to a specific printer, enter PRNT and the name of the printer you want to use, an equal sign, and your list of files. For example:

```
PRNT DRAFT=BACKUP.*,S?CFIL RETURN
```

You can change the switch settings for a file already in the queue using the sequence number of the file you want to change, and the switch or switches you want to add or change. For example:

```
PRNT//SEQ:17/C:5 RETURN
```

This causes PRNT to print five copies of the file with sequence number 17.

MESSAGES

You may see any of the standard system error messages resulting from invalid device and account specifications. In addition, you may see:

%Buffer full, some files not listed

The number of files in the print queue exceeds the number displayed on the screen.

?Command line too long
%Buffer full, some files are not killed

The command line passed to a remote printer is too long. Split the command into two, and enter each shorter command in turn.

?Destination network does not exist
?Destination node does not exist
?Destination socket does not exist
?Destination socket not enabled

You have specified a remote system which cannot be accessed, or which does not have a spooler accessible over the network. Check your printer and network specification, and try again.

?Destination socket is full

The destination system cannot accept your print request at this time. Try again later. If the problem persists, see your System Operator.

?Ersatz name not allowed when killing a file on remote spoolers

You may not specify an ersatz name (in association with the file name) if the filename is being printed on a remote printer. The ersatz name is translated by the local system, which may not be what is desired. Re-enter the command using the full file name.

?Insufficient Message Blocks

You do not have a MSGINI nK command in your system INI file, or your MSGINI command does not specify enough memory. See your System Operator about changing the system INI file to correct this problem.

?Message length greater than destination's specified maximum

An internal network error has occurred. This error may indicate that there are incompatible versions of network and spooler software installed on the local and remote systems. Check with your System Operator.

?Message system not supported
%No messages are pending receipt
?No socket has been established
?Not enough memory to perform KILL or LIST option

There is not enough free memory in your job's partition to carry out the command. Use DEL to remove files loaded into your partition, or see your System Operator.

%No files in print request, no files updated

PRNT was not able to find the files you specified. Check the command line again, and make sure the device and account specifications are correct.

?Only operator is allowed to turn printer on or off

Only a user logged into the System Operator's account (OPR:, DSK0:[1,2]) can use the /ON and /OFF switches.

?Output printer not found

Check your spelling or use the PRNT command alone to display the printers set up for your system.

?Print spooler is not installed

The Task Manager communicates with the spooler through the Inter-Task Communication system. This error means some part of the process is not "hooked up." This could be because the Task Manager is not properly installed, or because the Inter-Task Communication system is not set up. See your System Operator.

?Printer already turned off
?Printer already turned on

You tried to turn off or on a printer that was already in that state.

?Printer name not specified

The command needs to have a printer to operate on. One was not specified. Re-enter the command, specifying the appropriate printer.

%Queue entry not found

The specified printer queue entry was not found and could not be updated. Check the sequence number and try again.

?Queue file is full

The destination printer's file holding outstanding print requests is full, and cannot accept more requests until current ones have been satisfied. Try again later.

?Spooler file error

The destination spooler encountered an error while processing its queue file. Contact your System Operator

;TSKSPL - Please mount form [form-name] on [printer-name]

The spooler operator job sees this message if you specify a form-type not defined as being mounted on the printer. The spooler operator should then put the proper form on the printer and use the SET program to tell the printer spooler that form is ready.

PUSH

FUNCTION

PUSH works similarly to LOG, except it remembers the account you came from, so you can use the POP command to return.

CHARACTERISTICS

PUSH is re-entrant and re-usable. See the LOG reference sheet for operation details.

Unlike LOG, PUSH will not log you from one device to another unless you enter the device name to log to. For example, if you are logged into an account on DSK1:, and want to PUSH to account [66,5] on DSK2:, you must enter **`PUSH DSK2:[66,5]`** RETURN. Just entering **`PUSH [66,5]`** RETURN does not work.

✋ Your system must have shared memory to use PUSH and POP. See your *System Operator's Guide to the System Initialization Command File* for information on shared memory. For every five PUSHes, you use one system queue block.

FORMAT

```
PUSH {/switch} {devn:}{[{p}{,pn}]}
```

switch is an option, ***devn:*** is the device name, ***p*** is the project number, and ***pn*** is the programmer number. If you are already logged into an account, you may be able to abbreviate the account number depending on where you want to PUSH to (see OPERATION, below).

OPTIONS

A	Pop to first PUSHed account; clear recorded account list.
D	Display recorded accounts.
P	Pop to previous account.
S	Pop to previous account; PUSH the current account onto list.

OPERATION

Enter PUSH, an option, and an account specification and/or user name. For example:

```
PUSH DSK1:47,2 RETURN
PUSH RANDOLPH RETURN
```

PUSH then searches for the account you specified, logs you in (if it can), and "remembers" the account you left. In the first example above, PUSH looks on DSK1: for account [47,2]. In the second example, the user name causes PUSH to log you into the root account of RANDOLPH.

When you are ready to return, enter POP (see the POP reference sheet) or PUSH/P.

MESSAGES

In addition to the messages below, see the messages listed in the LOG reference sheet.

?All popped out!

There was no account remembered by previous PUSHes to get POPped.

?Can't allocate SMEM memory, abort

Either SMEM shared memory has not been installed on your system, or it is fully allocated. Check with your System Operator.

?Can't do push!

An internal error occurred.

?Can't process, out of queue blocks, abort

PUSH needs to allocate a queue block (a system resource), but none are available. Contact your System Operator about allocating more queue blocks at bootup time.

?Illegal option specified, abort

You specified an invalid option on the command line. Re-enter the command.

?Invalid path spec, abort

You entered the account to transfer to in an invalid format. Try again.

QDT

FUNCTION

Allows you to examine and modify locations in memory.

CHARACTERISTICS

QDT is re-entrant and re-usable. The primary use for QDT is not to debug programs, but to examine the contents of memory locations in the monitor or at the locations used by the I/O ports.

This is a dangerous program; you can destroy the monitor in system memory or damage data. You CAN reload a valid copy of your monitor by rebooting the system, but you should still be careful using QDT, especially if other users are working on the system. You must be logged into DSK0:[1,2] to run QDT.

If hex mode has been set (by use of the SET HEX command), you may enter and display numbers in hexadecimal. However, any hex number which starts with a letter must be preceded by a 0 (for example, 0FF instead of FF).

OPERATION

Log into OPR: and enter QDT at AMOS command level:

```
LOG OPR: RETURN
QDT RETURN
```

Now you can begin to enter QDT commands. Unless you specify a memory address, QDT assumes the first memory location you want to display is at address zero.

You are entering characters in data mode: the usual line editing facilities are not available.

COMMAND SUMMARY

B	Modify single bytes. Place counter changes by 1.
E	Exit from QDT.
L	Modify 32-bit Longwords. Place counter changes by 4.
W	Modify full words. Place counter changes by 2.
#	Display current word as two octal bytes.
TAB	Puts contents of current location at next address.
RUBOUT	Cancels current command/number.
n/	Moves to ***n*** (octal) location.
n RETURN	Stores ***n*** at current location.
nLINEFEED	Stores ***n*** at current location and adds to counter.
^	Stores ***n*** at current location and decrements counter.

MESSAGES

Any command not in the list above will be echoed back with a question mark.

?Privileged program - must be logged into OPR:

Log into DSK0:[1,2] and try again.

QUEUE

FUNCTION

Displays the number of monitor queue blocks available for use.

CHARACTERISTICS

QUEUE is re-entrant and re-usable.

Various portions of the system (for example, the line printer spooler) use the monitor queue system. The monitor queue is also available for use by user programs—see your *Monitor Calls Manual* for information on the monitor queue system.

The initial size of the queue is 80 blocks. The number of queue blocks you need depends on the tasks you need to perform.

Each queue block defined uses a certain amount of memory in the monitor—so, don't define many more queue blocks than you need, or you will waste monitor memory (and possibly slow down your system).

QUEUE is also used in the system initialization command file to allocate the number of queue blocks for the system. See your *System Operator's Guide to the System Initialization Command File.*

OPERATION

Enter QUEUE at AMOS command level. For example:

```
QUEUE RETURN
97 Queue blocks available
```

MESSAGES

?No queue blocks allocated

See your System Operator about increasing the number of blocks assigned in your system initialization file.

?Requested queue block allocation extends beyond 8MB
?No queue blocks allocated

The number of queue blocks you requested would cause a queue block to reside at a memory location greater than 8MB. This in not a valid AMOS configuration. Reduce the number of queue blocks requested, and try again.

RADMON

FUNCTION

Monitors status of AM-445, AM-446, and AM-447 RAID controller. Sends notification messages if a fault occurs.

CHARACTERISTICS

RADMON runs on a background job and checks the RAID controller for error conditions once a minute. If it finds one, it sends messages to the system operator's terminal and, optionally, to one or more email addresses. It is used only in the system initialization command file.

FORMAT

```
RADMON {/ID=id} {/EMAIL=address{,address}}{/option(s)}
```

id is the SCSI ID of the RAID controller. If you leave it out, RADMON polls the SCSI bus until it finds the controller.

Each ***address*** is an email address to send notification messages to. It must be in standard Internet mail format: *name@system.*

OPTIONS

/O	With AM-446 and AM-447, displays event types other than those normally displayed.
/R	With AM-446 and AM-447, displays messages for all event types.
/S	Suppresses the email message sent when the program starts.
/Z	Monitor events from the beginning of the RAID log file. Otherwise, when RADMON restarts, it begins checking events from the point where it left off..

The /O, /R, and /Z switches are generally used only when a problem is suspected or known and you need more diagnostic information. They work only with the AM-446 and AM-447 subsystems, not the earlier AM-445 RAID Controller.

OPERATION

RADMON runs on a background job attached to a pseudo-terminal. There is no reason to run it on a real terminal unless debugging a RADMON installation, since it sends all important messages to the system operator’s terminal. Follow the steps below to set up RADMON. If you want more information about any part of the initialization file, see the *System Operator’s Guide to the System Initialization Command File*.

1. If you want to use e-mail notification, you must have AlphaMAIL and AlphaTCP's SMTPD installed, and be able to send mail from AlphaMAIL to the intended Internet mail user.
2. Run MUSER and add a user name to uniquely identify the RADMON job on this computer. This will be the FROM name on any mail message RADMON sends.
3. Allocate a mailbox for the user name you've just created. Refer to your mail package documentation for instructions. Log in as that user and send mail to the intended Internet mail user.
4. Log to the SYS: account, then create a test copy of your initialization file:

   ```
   COPY TEST.INI=AMOS32.INI RETURN
   ```

   Then VUE the test file.
5. Add one to the number of jobs in the JOBS statement.
6. Add a JOBALC statement defining a job called RADMON.
7. Add a TRMDEF statement for a pseudo-terminal called RADMON. For example:

   ```
   TRMDEF RADMON,PSEUDO,NULL,80,80,80
   ```
8. Add a SETJOB command to attach the RADMON job to the RADMON pseudo-terminal:

   ```
   SETJOB RADMON,RADMON,70K,RADMON.JIN
   ```
9. If you want RADMON to send e-mail notification, make sure the e-mail driver program is loaded into memory somewhere before the first SYSTEM statement. This statement must also be before the SETJOB statement for the RADMON job.
10. Finish from the test initialization file.
11. In SYS:, create a file called RADMON.JIN containing these statements:

    ```
    :T
            LOG user-name
            RADMON {/ID=id}
    {/EMAIL=address{,address}}{/option(s)}
    ```

    user-name is the RADMON name you set up in step 2. If you aren't using e-mail notification, it can be any user name.

    id is the SCSI ID of the RAID controller. If you don't include the SCSI ID, RADMON will poll the SCSI bus until it finds the controller.

    Each optional ***address*** is an e-mail address you want RADMON to send notification messages to. Each one must be in standard Internet address format: person@system.
12. Make sure no one else is using the computer and use MONTST to test your new initialization file.

If everything is correct, STAT should show the RADMON job in an Sl (sleep) state. If you set up e-mail notification, a message is sent to the specified addresses telling them that RADMON is running, unless you also used the /S switch.

If there is a problem, change the SETJOB statement to attach RADMON to a real terminal and MONTST again. Check the terminal for error messages so you can correct the situation.

Once you’re satisfied everything is working correctly, rename your test initialization file to make it your standard initialization file.

MESSAGES

?Micropolis RAID controller not found

Either you entered an incorrect value for the SCSI ID, or you did not enter a SCSI ID and RADMON could not find the controller when it polled the SCSI bus.

No supported RAID controller found

Either you entered an incorrect value for the SCSI ID, or you did not enter a SCSI ID and RADMON could not find the controller when it polled the SCSI bus.

RADMON - Error communicating with RAID controller

RADMON did not understand the responses it received when it polled the RAID controller.

?This program requires a SCSI dispatcher be installed

You cannot use RADMON if your computer doesn't use a SCSI dispatcher.

Usage: RADMON [/ID=x] [/email=person@system[,person@system] /S] [/R/Z/O]

The syntax of your RADMON command line in RADMON.JIN is not correct. Check the format and reboot your computer.

REDALL

FUNCTION

Performs a disk diagnostic test by reading all (or a specified number) of the records on a disk and reporting any read errors.

CHARACTERISTICS

REDALL is re-entrant and re-usable. Does not harm the data on your disk.

FORMAT

```
REDALL devn:{number-of-records}
```

devn: specifies the logical device you want to read and ***number-of-records*** is the number of disk records you want to read. If you omit number-of-records, REDALL reads all of the records on the disk.

OPERATION

Enter REDALL, the device to test and the number of records to read. For example:

```
REDALL DSK1:100 RETURN
```

REDALL displays the number of records it is reading. It displays the appropriate messages if any read errors occur.

If you see any read errors, notify your System Operator. They may be correctable with FIXCRC or DSKDDT.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your spelling, or use DEVTBL to see a list of valid devices.

?Cannot perform REDALL on [device-name] - [AMOS error message]

Check the AMOS error message and correct the condition.

?Cannot read [device-name] - disk not mounted

MOUNT the device and try again.

REDIR

FUNCTION

Redirects Input/Output. Lets you send input or output from a command or program to another command or program.

CHARACTERISTICS

REDIR is re-entrant and re-usable. The REDIR command itself is only necessary when SET NOREDIRECTION is in effect, otherwise the redirection symbols work with most AMOS commands. REDIR is useful in command files when it is not known if redirection is on or off.

REDIR spawns a slave job to assist with redirection. Therefore you may need to increase the JOB settings in your system initialization command file.

For general characteristics of I/O redirection, whether you are using the REDIR command or not, see Chapter 5.

REDIR does not work with all AMOS software. Any program that doesn't allow switches before the file specifications will not work with REDIR.

If you use redirection and the AMOS line editor, your TRMDEF statement cannot have buffers larger than 200 bytes or a line editor setting over 20.

FORMAT

```
REDIR AMOS-command redirection-specification
```

AMOS-command is an AMOS level command or a CMD or DO file, and ***redirection-specification*** is a directional symbol combined with a destination file specification. The directional symbols are:

>	Send output to the following file.
>>	Append output to the end of the following file.
<	Input the contents of the following file into the AMOS-command.
|	Place the output of the following file into the input of the AMOS-command.
#	Removes terminal dependent escape sequences from the redirected data. Must be the first symbol following REDIR on the line.
\	Quotes the character following it so it is not interpreted as a command.

DEFAULTS

Default extensions are .INP for input files, .LST for output files.

OPTIONS

You can use any of the switches available to the AMOS-command you use. REDIR has no switches of its own.

OPERATION

Enter REDIR, the name of the program you want run, the direction symbol, and the file specification where you want the I/O redirection to go to/come from. For example:

```
REDIR SYSTAT/N >OUT.LST RETURN
```

This places the output of SYSTAT into the file OUT.LST.

For more examples of redirection, see Chapter 5.

MESSAGES

?Insufficient memory to run job by n bytes -
Reduce EDITOR line count!

See your System Operator for help adjusting the line editor in the system initialization command file.

?Invalid command line argument

Check your syntax and try again.

?Job table is full - allocate more jobs via the JOBS command

You need extra jobs on your system for redirection.

?No alternate languages have been defined

There are no other languages available on your system at this time. For information on languages, see your *System Operator's Guide.*

?Unable to locate PSEUDO.IDV within AMOS

See your system operator about locating the file.

?Unable to locate REDIR2.LIT in system memory of SYS:

See your system operator about locating the file.

?Unable to locate selected terminal driver within AMOS

See your system operator about locating the file.

?Unrecognized error code n returned by $SPAWN

See your system operator for help.

RENAME

FUNCTION

Changes the names of files.

CHARACTERISTICS

RENAME is re-entrant, re-usable, a wildcard file command, and recognizes ersatz names.

FORMAT

```
      RENAME newfilespec=filespec{,...filespec(s)}{/switch}
```

filespec(s) select the files you want to rename, ***newfilespec(s)*** is the new name(s), and ***switch*** is an option request.

or:

```
      RENAME filespec/PROTECTION:value
```

for /PROTECTION operation only. See Chapter 6 of *Monitor Calls Manual* for more information on ***value***.

DEFAULTS

The default device and account are where you are logged. The default switches are /NOD and /NOQ. Defaults for unspecified filenames and extensions are *.*.

OPTIONS

The switches are file switches and may be abbreviated to any unique characters.

/QUERY	Confirm each renaming.
/NOQUERY	Rename without confirmation.
/DELETE	Delete existing file before renaming.
/NODELETE	If the new name is in use, don’t rename.
/PROTECTION:n	Update the file protection code.

OPERATION

Enter RENAME followed by a new name, an equal sign, and one or more files you want renamed. For example:

```
RENAME ACCNT.TXT=AC.TXT RETURN
```

or:

```
RENAME TTY??.*=DVR??.* RETURN
DVR12.LIT to TTY12.LIT
DVRAA.TXT to TTYAA.TXT
```

The /PROTECTION switch allows you to change the protection level of files as you rename them. Each file on an extended disk has a protection level controlling who can access and modify that file. The default is 0505051717. For more about protection, see your *System Operator's Guide*. For example:

```
RENAME MYTEXT/P:0505051210 RETURN
```

If you use /Q, RENAME asks you to confirm the renamings. For example:

```
RENAME/Q BASTXT.*=WRKFIL.*,WRKTXT.* RETURN
WRKFIL.BAS to BASTXT.BAS? Y
WRKTXT.TXT to BASTXT.TXT? N
```

You may press CTRL/C to stop further renamings.

MESSAGES

?Account does not exist - [x,x]

Check your syntax, find the correct account using PPN, or create the account you need, and try again.

%Bypassing BADBLK.SYS[1,2]
BADBLK.SYS exists to prevent bad blocks
on a device from being allocated, and
should never be directly accessed.
No files transferred

You can't rename BADBLK.SYS[1,2].

?Cannot find DSK0:CMDLIN.SYS[1,4]

The RENAME program needs this file to be able to process wildcard symbols. See if CMDLIN.SYS exists in DSK0:[1,4]—if it does, it means you didn't have enough memory to load it into your partition. If so, try to increase your memory by erasing unnecessary files. See your System Operator for further help.

?Cannot RENAME [filename] - file already exists

You tried to rename a file, but a file of that name already exists. If you want RENAME to overwrite the existing file, use the /D option.

?Device not found/mounted - [device-name]

Check your syntax, or use DEVTBL to see a list of devices on your system. If the device is not mounted, MOUNT it.

?Device or [p,pn] specifications on output are illegal

Your newfilespec and filespec(s) must be in the same device and account.

?Maximum input exceeded

You put more characters on the command line than RENAME could handle. Break your command into smaller commands, and try again.

?MEM or RES specified on network

You cannot access MEM: or RES: over a network.

?Missing Output specification

You must give a new file name so RENAME knows what to call your new file.

?More than one output specification

Try again using only one new file name.

%No files renamed

RENAME couldn't find any files matching your filespecs or wasn't able to carry out the renaming procedure because of an error. Make sure you used the correct filespec and try again.

?Specification error ^

The ^ symbol points to the error. Check your syntax, and try again.

?Wildcard device or unit specified on network

You can't use wildcard symbols over a network.

RESTOR

FUNCTION

Writes files from a specified backup device to a hard disk. RESTOR is a file-oriented program that transfers files previously saved by the BACKUP command.

The BACKUP, BAKDIR, and RESTOR commands are included only for compatibility with earlier operating system versions. Do **NOT** use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

CHARACTERISTICS

RESTOR is re-entrant, re-usable, and a wildcard command. Files can be transferred into the disk account you are logged into from another account on the backup medium regardless of project number. However, files can't be transferred to a disk account if they are not in the same project number you are logged into unless you're logged into the operator's account, [1,2].

RESTOR is used with BACKUP (which transfers files from the disk to the specified backup medium) and BAKDIR (which gives a directory of files from the backup medium). RESTOR works on both traditional and extended format disks.

Unless you are using a VCR and /T, RESTOR locks up all other users on your system. Inform other users before using RESTOR.

RESTOR can be set up to use a default backup device. This is useful if you normally use one device for most or all of your backups. When this default is in effect, you don't have to tell RESTOR what device you wish to use, thus saving a step in the backup process. To set up a device as the default, define an ersatz name called BACKUP: in your ERSATZ.INI file. For example:

```
BACKUP:    VCR0:
```

Define the device you want as your default backup device after the name. If you want to use another device after the default device has been "set up," you can specify the /OVERRIDE switch, and you are prompted for the name of the device you wish to use. If you don't have a default device, and if you don't use /OVERRIDE, RESTOR presents a menu of available devices to select from.

FORMAT

```
RESTOR{/switch}{outfspec}=fspec{,fspec...}{/switch}
```

switch is an option request. The ***fspecs*** define files to be restored. You must use the exact file specification as it was written onto the backup medium by BACKUP.

The ***outfspec*** defines which device and account the backed up files are written to on the disk. It also allows you to rename the files as they are copied onto the disk.

DEFAULTS

The default fspec is the device and account you are logged into, and is equivalent to entering: **`RESTOR {outspec}=*.*`** RETURN. The outfilespec defaults to the filename of fspec and the device and account you are logged into. If you are logged into the System Operator's account, DSK0:[1,2], the default outfspec is [ ] (all accounts). If you are logged into account [1,2] on any other disk, the default is [ ] (all accounts on that disk).

OPTIONS

Placing NO before the switch turns it off. The default switches are /D, /NOH, /NOQ, /NOS, and /NOT.

/AFTER:date-time Restore only files that were last updated after the specified date and/or time. Operation switch.

/BEFORE:date-time Restore only files that were last updated before the specified date and/or time. Operation switch.

/DELETE Copy over existing files. Operation switch.

/HASH Restore only files with different hash totals. Operation.

/OVERRIDE Overrides the default backup device (if one exists). You are prompted for the name of the device to use.

/QUERY Confirm files to restore. File switch.

/SUPPRESS Suppress display of files during the restore. Operation.

/TRANSFER Restore from VCR without locking users out. Operation.

With /AFTER and /BEFORE, you must specify a date and/or time in this format:

```
/switch:{month-day-year}{@hour:minute{AM/PM}}
```

A time without a date defaults to the current date, while a date without a time defaults to zero time (midnight).

OPERATION

Enter RESTOR and the desired switches and file specifications. For example, to restore from the backup medium all the files with .BAS extensions backed up from account [110,2] on DSK2:, enter:

```
RESTOR =DSK2:*.BAS[110,2] RETURN
```

RESTOR responds with a menu of the available backup devices. Select the backup device you want. RESTOR asks you to confirm the specification of the device you selected. If the backup device specification shown is correct, just press RETURN, otherwise enter the correct specification.

RESTOR prompts you to ready your backup device in an appropriate way—follow the instructions. RESTOR displays a list of the file on the backup medium that fit the file specifications you gave (you won't see this list if you used /SUPPRESS). It also displays a dot for each file transferred from the backup device to the disk.

After the selected files have been transferred to the disk, RESTOR updates the disk directory and lists the restored files on your terminal.

MESSAGES

?All "date and time" switches must be in absolute format.

See the rules above for specifying dates and times, and try again.

?Attempt to initiate device handler failed, error code n

Check to see if the number of jobs defined in your system initialization file are enough to include one for the device handler task. See your System Operator about solving the error condition. The error codes are:

```
1 = Job table is full
4 = %HNDLR task already exists
```

?BACKUP media not compatible with current software.

The backup medium you are using is not compatible with the current version of your software. See your System Operator for help.

?BACKUP media not file structured.

RESTOR could not read the label information block. RESTOR can only read media created by the BACKUP command.

?BACKUP media not in correct sequence

The second media of a split-media backup didn't match the first. Make sure you have the correct media. If so, see your System Operator for help.

?BACKUP media not written by BACKUP program.

The backup wasn't written by BACKUP. See your System Operator about which program restores the data.

Bypassing [filename]

RESTOR is not restoring the file because it would overwrite an existing file.

Bypassing Table of Contents.

An informative message.

?Cannot be logged onto the backup device

Check your entry for errors. Make sure you used a colon after the device name.

?Cannot open message socket. ITC error: n

See your *Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently. Make sure you have a MSGINI line in your system INI file.

?Cannot use [device] - [AMOS error message]

Either your ersatz default device definition, or the device you specified after /OVERRIDE was incorrect. Using the AMOS error message as a clue to what is wrong, check the appropriate entry and correct it.

?Can't find device handler in DEVTBL

See your Alpha Micro dealer for help.

?CMDLIN error detected during file transform process.

Your version of CMDLIN doesn't match your version of RESTOR. See your System Operator or Alpha Micro dealer about updating CMDLIN or RESTOR.

?Directory is damaged

Something is wrong either with your RESTOR command or with your system's account structure. This message could occur if your command caused an attempt to create an account, and you were not logged into OPR:. If this is not the case, see your System Operator about using DSKANA or other diagnostic programs to check the account structure.

?Disk device specified for file restore does not exist

Your backup media contained files from a disk that does not exist on your system, and your RESTOR command tried to restore to it. Try again, restoring files from that disk onto a disk that does exist on your system.

%Device specified is not a supported backup device

Check your entry for errors. Make sure you used a colon after the device name.

?End of media detected

The table of contents for the tape indicated a file past the end of the tape—trying to read the file, RESTOR reached the end of the tape. Not all of your files are actually on the backup tape; some files included in the table of contents may not be restorable.

?Error detected while skipping to next file.

This could indicate a file you were skipping over on your media has a problem. See your System Operator for help.

?Fatal error, aborting device handler task

This is an informative message that occurs after some other fatal error, and indicates the device handling task is also aborting.

?Fatal error, illegal message code n received from device handler.

The main task received an error from the device handler it did not understand. Try again—if the problem persists, see your Alpha Micro representative for help.

?Fatal error, ITC error code [n]

See your *Monitor Calls Manual* for an explanation of the error code. This indicates an internal communication error—ask your System Operator or Alpha Micro dealer for help if this occurs frequently.

?File sequence error detected

The file sequence number of the next file was not the expected number. This could indicate a tape problem. It can also occur if you fast forward during a restore, and the tape has gone past the end of the data (if so, just try again).

?File size mismatch on split file detected.

The second media of a split-media backup didn't match the first. Make sure you have the correct media. If so, see your System Operator for help.

?Filename or PPN [name] not found while updating directory

The Filename or PPN specified was not found while updating the directory of a disk formatted with extended directories. See your Alpha Micro dealer for help.

?Label date and time mismatch on BACKUP media detected.

The second media of a split-media backup did not match the first. Make sure you have the correct media. If so, see your System Operator or your Alpha Micro dealer for help.

?No record ID detected

The files on the tape were recorded with an early BACKUP version, and your RESTOR program is a later version. See your Alpha Micro dealer for help.

%No supported backup devices found

Your system does is not set up for any of the 3 supported backup devices, so you can't specify a default device.

?Output specification not found.

Even if the default specifications are what you want, you MUST enter an equal sign to let RESTOR know which is the output specification.

?Program error detected on split file.

An error occurred on the second media of a split-media backup. Check to make sure you have the correct media. If so, see your System Operator or your Alpha Micro dealer for help.

?Split file sequence number mismatch detected.

The second media of a split-media backup did not match the first. Check to make sure you have the correct media. If so, see your System Operator or your Alpha Micro dealer for help.

?Table of Contents file not found.

This message appears whenever a Table of Contents file was written onto the backup medium by the BACKUP command, but RESTOR could not find it. This error should not occur unless the backup recording medium is damaged.

?Unable to run device handler task

The device handler failed to communicate with the main task after it was spawned. See your System Operator or Alpha Micro dealer for help.

?Unspecified error received.

The main task received an error from the device handler it did not understand. Try again—if the problem persists, see your Alpha Micro dealer for help.

?VCR failed to respond to command.

This could indicate a problem with the remote control of your VCR, with the connection between your computer and your VCR, or with your computer. Make sure your cables are properly connected—if the cable is okay, try to locate whether it's the VCR or computer so you can get it fixed.

**%WARNING -- Copy count is below the minimum level when using
the TRANSFER switch.**

This message appears whenever you are restoring files from a VCR using /T, and the backup tape was created with fewer than twenty copies. Warn other users on your computer system that you need to use RESTOR without /T, and when they are ready, try again without /T.

%WARNING -- Device handler task failed to respond. Reboot system.

Reboot your system. There should be no damage to your data.

%WARNING -- Run DSKANA to ensure the integrity of the bitmap.

This is displayed after an error or a ^C occurs during the restore. Run DSKANA.

%WARNING -- The next file is a "split file" and is NOT complete

The media has ended in a split file and you have chosen not to continue the restore. This reminds you the last file restored is not complete.

**?You must be logged into the operator's account [1,2]
to restore files to any but the logged in project.**

Either log into the same project number, or log into account [1,2].

REWIND

FUNCTION

Rewinds a 1/2", 9-track magnetic tape, or a video cassette.

CHARACTERISTICS

DO NOT use REWIND when another job is using the tape unit. Such an action causes unpredictable results.

The tape unit you access must be defined in your system device table. MTSTAT.SYS must be in system memory for magnetic tape units if you have an S-100 Bus or any non-VME system. See your *System Operator's Guide to the System Initialization Command File.*

A magnetic tape is said to be at load point when the metallic film at the start of the tape is positioned at the read head.

Use REWIND for remotely-controlled VCRs which start to play when a write-protected cassette is inserted to rewind the tape back to load point.

REWIND works with the AMOS/32 and AMOS/Lversions of the operating system only.

FORMAT

```
REWIND devn:
```

devn: is the tape unit you want to rewind.

OPERATION

Make sure the tape you want to rewind is mounted. Then enter REWIND followed by the specification of the tape unit. For example:

```
REWIND MTU7: RETURN
```

or:

```
REWIND VCR0: RETURN
```

REWIND returns you to AMOS command level while the tape is still rewinding.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your entry or use DEVTBL to see a list of valid devices for your system, and try again.

?Device not ready

The tape drive reported that it is not ready for operation. Check that the tape is loaded correctly and the drive is ready for operation.

?File specification error

Check your syntax, and try again.

% Tape cannot be rewound—it is at load point

The tape is already fully rewound and ready for use.

% Tape is already rewinding

The tape is already rewinding. The command was superfluous.

RNDRED

FUNCTION

RNDRED randomly selects disk tracks and performs a seek and read operation on a random record on them. It lists any read errors it finds.

CHARACTERISTICS

RNDRED is re-entrant and re-usable. **Does not harm the data on your disk.**

FORMAT

```
RNDRED devn:
```

devn: specifies the device you want to test.

OPERATION

Enter RNDRED and the logical device you want to test. For example:

```
RNDRED DDA1: RETURN
```

When you want the program to stop, press CTRL/C.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use the DEVTBL command to see a list of current devices.

?Cannot perform RNDRED on [device-name] - [AMOS error message]

Check the AMOS error message and correct the condition.

RUN

FUNCTION

Runs compiled AlphaBASIC programs.

CHARACTERISTICS

RUN is re-entrant and re-usable. If RUN is in system memory, each user who wants to use it may use the copy in system memory instead of loading it into his own memory partition. Use RUN only on previously compiled programs. For more information on AlphaBASIC, see your *AlphaBASIC User's Manual.*

FORMAT

```
RUN filespec
```

filespec is the compiled AlphaBASIC program you want to execute.

DEFAULTS

The default file extension is .RUN. RUN assumes the device and account you are logged into.

OPERATION

Enter RUN and the file you want to run. For example:

```
RUN INVOIC RETURN
```

AlphaBASIC executes your program. To stop a program, press CTRL/C.

MESSAGES

?Cannot find program [filename]

Check your syntax, or use DIR to locate the file, and try again.

Insufficient memory to load program [filename]

Use MEMORY to check your memory partition size. You may need to increase it. See your System Operator for help.

You may also see any of the standard AlphaBASIC error messages if your program has an error in it—see your *AlphaBASIC User's Manual*.

RUNP

FUNCTION

Runs a previously compiled AlphaBASIC PLUS program.

CHARACTERISTICS

RUNP is re-entrant and re-usable. See the *AlphaBASIC PLUS User's Manual* for information about the AlphaBASIC PLUS programming language.

RUNX

FUNCTION

Runs a previously compiled AlphaBASIC program, using the integral math coprocessor on a 68040 CPU chip.

CHARACTERISTICS

RUNX is re-entrant and re-usable. It functions only on a computer with a 68040 CPU with an integral math coprocessor. Except for using the math functions of the 68040 to increase performance, it works exactly like the RUN command. See the *AlphaBASIC User's Manual* for information about the AlphaBASIC programming language.

SAVE

FUNCTION

Saves memory modules as disk files.

CHARACTERISTICS

SAVE is re-entrant and re-usable, and understands the wildcard symbols ? and *. SAVE will not save modules as disk files in accounts other than the one into which you are currently logged.

Memory modules have the same name and extension as their corresponding files on the disk. Use MAP or DIR MEM: to display modules in your memory partition.

FORMAT

```
SAVE filename.ext{,filename.ext...}{/rename-extension}
```

filename.ext selects a module you want to save as a disk file.

DEFAULTS

SAVE assumes a file extension of *. If you specify just a filename, SAVE saves all memory modules of that name regardless of their extensions.

OPERATION

Enter SAVE and the file(s) you want to save. For example:

```
SAVE *.SYS,*.LIT RETURN
```

SAVE displays a list of the memory modules being saved as disk files. These files are placed in the account into which you are currently logged.

If you ask SAVE to transfer a copy of a module to your account and a disk file of that name already exists, SAVE erases the original disk file and replaces it with a copy of the memory module. For example:

```
SAVE TLC RETURN
ERASE TLC.LIT, SAVE TLC.LIT
```

If you do not want SAVE to erase an existing file, use the rename option. Follow the list of filespecs with a slash and any extension you choose. Before saving any memory modules, SAVE will rename to the new extension any existing files with the same names as those memory modules. For example, assume you have a file in your account named EXIT.SBR:

```
SAVE EXIT.SBR/OLD RETURN
RENAME EXIT.SBR,SAVE EXIT.SBR
```

The example above renames your existing file EXIT.SBR to EXIT.OLD; then it saves the memory module in your partition as EXIT.SBR. If a file named EXIT.OLD already exists in the account, SAVE erases it before renaming EXIT.SBR to EXIT.OLD.

MESSAGES

?Cannot save [filespec] - memory module not found

Use MAP or DIR MEM: to see what modules are in memory.

?Illegal backup switch

You tried to use the rename option, but you did not specify a legal extension after the backslash. A file extension may only include letters or numbers, and may only be three characters or less long.

SCSI

FUNCTION

Displays a list of all SCSI devices attached to your computer.

CHARACTERISTICS

SCSI is reentrant and reusable. It displays which SCSI IDs are in use and which are available. For the IDs in use, it displays the type of device, manufacturer's model number, and firmware revision.

If available from the SCSI dispatcher, this command also displays the currently configured data transfer parameters. This is the same information that is displayed during bootup initialization of the SCSI dispatcher

OPERATION

To see a list of SCSI devices, type:

SCSI RETURN

You will see a display similar to this:

```
Dispatched SCSI port:

SCSI id 7: (reserved)  SCSI bus host adaptor
SCSI id 6: SCSI-2 (tape)      TANDBERG TDC 4100     =05:10CREATED121592
SCSI id 5: No device or unable to report
SCSI id 4: No device or unable to report
SCSI id 3: No device or unable to report
SCSI id 2: No device or unable to report
SCSI id 1: No device or unable to report
SCSI id 0: SCSI-2 (disk)      MAXTOR  MXT-1240S     H6F+AAA
           CMDQUE wide synchronous: 20.00 MB\16
```

MESSAGES

?You must install a SCSI dispatcher prior to using this program

This program requires the correct SCSI dispatcher to be installed via the system’s initialization file. Change the file, and reboot the system.

SCZCSH

FUNCTION

Displays a continuously updated bar display showing write buffer usage and effectiveness.

CHARACTERISTICS

SCZCSH is reentrant and reusable. It works only on systems which use the SCSI dispatcher.

FORMAT

```
SCZCSH dev
```

dev is the three-letter name of the device you want to see write buffer use for.

OPERATION

Enter SCZCSH and the name of the device you want to see write buffer use for. For example:

```
SCZCSH DSK RETURN
```

The top bar of the screen display generated by SCZCSH shows the approximate percentage of write cells in use. This bar should move around constantly while writes are occurring, usually hovering around 50 percent.

The next bar shows the approximate percentage of writes which were placed in a cell, but were overwritten by another write before actually being sent to the disk. This is the same as disk writes occurring over previous writes; however the seek and write overhead of previous writes was avoided.

The final bars represent a breakdown of sequentially written blocks per physical disk write. When physical writes are performed, the driver attempts to perform them as multi-sector operations whenever possible. Up to eight sequential blocks may be written per disk access, resulting in better overall performance.

MESSAGES

?Driver not found

The requested driver could not be found. Check the name (by using DEVTBL) and try again.

?Invalid driver type

The specified driver does not support write caching. Choose another driver.

SCZERR

FUNCTION

Displays and optionally clears the SCSI error statistics.

CHARACTERISTICS

SCZERR is re-entrant and re-usable. The SCSI dispatcher counts all errors for each SCSI device whether corrected or not. SCZERR displays the accumulated error counts for each SCSI device on the system.

FORMAT

```
SCZERR {/A}
```

OPTION

/A Causes SCZERR to report errors for all 16 possible SCSI devices whether or not they exist on the system. Without the /A switch, errors are displayed for only those SCSI devices that exist in the dispatcher.

OPERATION

Type SCZERR RETURN or SCZERR /A RETURN

SCZERR displays a screen showing the SCSI ID of the first SCSI device on the computer, with the number of errors of each type for that device. Press RETURN to see the error statistics for the next device. When the errors for the last device have been displayed, the program asks:

```
Do you want to clear the error counters (yes, no)?
```

Typing **Y** clears the error counters and exits the program. Typing **N** exits the program without clearing the counters. Any other response repeats the question.

MESSAGES

Error statistics are not available.

The version of the SCSI dispatcher on your computer does not support error reporting. You need a later version of the dispatcher to use this feature.

Please answer the question correctly.

You must respond either Yes or No.

SCZPIC

FUNCTION

Enters the Product Installation Code (PIC) for the SCSI dispatcher. Once the PIC has been entered, displays the PIC.

OPERATION

See your system owner's manual or the installation instructions for your SCSI controller for how to use SCZPIC to enter the PIC for your SCSI dispatcher. Once you've entered the PIC, you can display it by entering:

```
SCZPIC RETURN
```

SCZPIC is not required in AMOS 2.3 or later versions of the operating system.

SEND

FUNCTION

Sends a message to another job.

CHARACTERISTICS

SEND is re-entrant and re-usable, and recognizes ersatz names. Sends a one line message to any job that can receive terminal input and does not have GUARD set (see the SET reference sheet for information on GUARD).

FORMAT

```
SEND {cpuID/ersatz name}jobname message
```

If you specify an asterisk instead of ***jobname***, the ***message*** is sent to all jobs on the system.

OPERATION

Enter SEND, the name of the job you want to communicate with, and the message you wish to send. For example, assume you are job RAY:

```
SEND BOB What time is your meeting with the Board? RETURN
```

If the terminal attached to job BOB is not guarded and is not busy performing a task that interferes with input/output, the message appears on BOB's terminal:

```
;RAY - What time is your meeting with the Board?
```

MESSAGES

?Busy

SEND can't send the message because the job's not at AMOS command level or in terminal input mode. Use STAT to see what the job is doing, and try again when it is not busy.

?File specification error

Check your syntax, and make sure you specified a jobname. Use SYSTAT or STAT to see the jobnames on your system.

?Guarded

The job is protected by SET GUARD. Try another method of communication.

?Invalid CPU number

The remote system you specified does not exist.

?ITC error occured during send

Your message did not arrive at the remote system due to a network problem Try again. If the problem persists, contact your System Operator.

?Job has no terminal attached

The job you want to send to is not attached to a terminal and can't receive your message.

?Job not found

Check your syntax, or use STAT or SYSTAT to see a list of jobs.

?Job specification error

A job was not specified on the command line. Try again.

SET

FUNCTION

Sets or displays various system and terminal options.

CHARACTERISTICS

SET is re-entrant and re-usable. SET lets you define your own SET verbs. If you have a SET.INI file in your current account, your library account, or DSK0:[1,4], SET reads the INI file when SET is used. The format for an entry in a SET.INI file is:

```
verb, filespec
```

For example:

```
GRAPH,DSK0:GRAPHC.LIT[1,4] RETURN
```

If you had such a line in a SET.INI file, entering **SET GRAPH** RETURN at AMOS command level would execute the file DSK0:GRAPHC.LIT[1,4]. When a file is called by SET, the register A2 points to the remainder of the SET command line, allowing you to add arguments to the keyword.

FORMAT

```
SET {option} {specifications}
```

DEFAULTS

The system comes up with these options as defaults: CTRLC, ECHO, LOCK, ELOCK, OCTAL, NODSKERR, NOGUARD, NOREDIRECTION, and NOVERIFY. The default form-type for a specific printer is set by the printer initialization file for that printer. The initial tape density at the time of system start-up is 1600 BPI.

OPTIONS

ACCESS	Turns on access to a network for the device.
NOACCESS	Turns off network access for the device.
BPI	Sets magnetic tape bits per inch rate.
BROADCAST cpuid	Turns on AlphaNET broadcasting. Must be in OPR:.
NOBROADCAST cpuid	Turns off AlphaNET broadcasting. Must be in OPR:.
BUFWRT devn:	Enables buffered writes on AM-520 disks.
NOBUFWRT devn:	Disables buffered writes on AM-520 disks.

CACHE dskn	Turns on disk cache for disk #***n***.
NOCACHE dskn	Turns off disk cache for disk #***n***.
CTRLC	Enables CTRL/C (user-interrupt command).
NOCTRLC	Disables CTRL/C.
DSKERR	Reports soft disk errors and retries.
NODSKERR	Does not report soft disk errors and retries.
DYN	Turns dynamic job scheduling on or off.
DYNNO	Turns dynamic job scheduling off for the system.
DYNYES	Turns dynamic job scheduling on for the system.
NODYNAMIC	Turns dynamic job scheduling off for this job only. You can then set priority for this job using JOBPRI. Other jobs continue to have their time slice dynamically.
DYNJOBNO {job}	Turns dynamic job scheduling off for this job.
DYNJOBYES {job}	Turns dynamic job scheduling on for this job.
ECHO	Displays terminal input.
NOECHO	Silences terminal input.
ELOCK {job}	Enables file locking for ***job***, for extended devices.
NOELOCK {job}	Disables file locking for ***job***, for extended devices.
FORMS	Assigns a form to a printer. Must be in OPR: to set Task Manager spooler forms.
GUARD	Prevents SENDs and FORCEs to your terminal.
NOGUARD	Allows SEND and FORCE.
HCACHE {devn:}	Enables on board caching for the specified device controlled by a Herbie disk controller board. Must be in OPR:.
NOHCACHE {devn:}	Disables on-board caching for the specified device. Must be in OPR:
HEX	Displays whole numbers in hexadecimal.
LANGUAGE	Sets the language translation table for the job.
LINK cpuid	Turns on the specified network. Must be in OPR:.
NOLINK cpuid	Turns off the specified network. Must be in OPR:
LOCK {job}	Enables file locking for ***job*** for traditional devices. Records event in system log.
NOLOCK {job}	Disables file locking for ***job*** for traditional devices. Records event in system log.
NDV cpuid	Turns on network driver for non-AlphaNET network. Must be in OPR:.
NONDV cpuid	Turns off network driver for non-AlphaNET network. Must be in OPR:.
OCTAL	Displays whole numbers in octal.
PFK	Programs terminal function keys.

PROMPT x Defines the AMOS prompt. Maximum 19 characters. See below for interpreted prompt information.

QIC11 Uses QIC11 format for streaming tape drive.

QIC24 Uses QIC24 format for streaming tape drive.

QICNORMAL Uses normal format for streaming tape drive.

REDIRECTION Enables I/O redirection. See Chapter 5.

NOREDIRECTION Disables I/O redirection. See Chapter 5.

SEEKOP dsk Turns on seek optimization for the specified device (including all logical units on the device). Improves disk access speed for heavily used systems.

NOSEEK dsk Turns off seek optimization for the specified device (including all logical units on the device).

TERMINAL Sets terminal characteristics (see below).

TEST Sets the system into test mode by setting a bit in the SYSTEM longword in the monitor. See Appendix C of the *AMOS Monitor Calls Manual* for details.

NOTEST Sets the system out of test mode by clearing a bit in the SYSTEM longword in the monitor. See Appendix C of the *AMOS Monitor Calls Manual* for details.

VERIFY Verifies each write operation by re-reading data. Does NOT compare written data with data in memory.

NOVERIFY Does not verify write operations.

ISIABT {job} Clears the "ignore IS$ABT flag" processing.

Except for those options which include an optional jobname, these options are only set for the job that used SET.

With the SET TERMINAL option, you have a number of added commands. Enter WIDTH, SCROLL, HEIGHT n, FCOLOR (foreground), BCOLOR (background), or DRIVER, then a setting (or a driver name). If TERMINAL alone is specified, SET displays settings. The WIDTH can be 80 or 132, colors can be:

```
0 = Black     1 = White       2 = Blue      3 = Magenta
4 = Red       5 = Yellow      6 = Green     7 = Cyan
```

Scrolling can be:

```
0 = Jump             1 = Fastest smooth    2 = Fast smooth
3 = Medium smooth    4 = Slow smooth
```

The SET TERMINAL commands can be abbreviated to any unique name, i.e., SET TERMINAL DRIVER [filespec] could be SET TDV [filespec]. SET TERMINAL HEIGHT lets you define the number of lines on your terminal screen (if your terminal supports this feature).

With SET PROMPT, you can enter the actual string you want, or one or more codes from this list:

$:	Current device and drive number.
$C#	Sends TCRT -2, #.
$E	Ersatz name of current account. If none, same as $:$P.
$LG	Name of current language.
$NA	Same as $NI=$NP,$NB.
$NB	Baud rate.
$ND	Terminal driver name.
$NI	Interface driver name.
$NJ	Job name.
$NM	Modem driver name.
$NP	Interface driver port number, in decimal.
$NS	Operating system name.
$NU	User name.
$P	Account number, in brackets.
$SC	AlphaNET cpu-ID.
$SE	Ersatz name for AlphaNET cpu-ID. If none, same as $SC.
$SV	Monitor version.
$UF	Free memory in user partition, in KB.
$UM	Total memory in user partition, in KB.
$UX	Radix. ^H for hexadecimal, ^O for octal.
$VB	Set to bright display.
$VD	Set to dim display.

These codes result in an "interpreted prompt" which changes depending on the user, account, etc. When using an interpreted prompt, keep the following in mind:

- PROMPT.SYS must be loaded into system memory and initialized for interpreted prompts to work.
- If you use SET PROMPT in a DO file, you must double the dollar sign before any interpreted prompt code. for example, use `$$P` for the current account, not `$P`.
- While the maximum length of the prompt string you enter is 19 characters, interpreted prompts may result in a displayed prompt much longer than this.
- Calculating the prompt length in a program is more difficult—you cannot do so by counting the characters in JOBPRM.

OPERATION

To see the current settings, enter SET. For example:

```
SET RETURN
Current settings are:
```

```
HEX  ECHO  DSKERR  NOVERIFY  GUARD  CTRLC  REDIRECTION  LOCK ELOCK
```

All non-locking jobs are displayed. If the job has locking off for both traditional and extended devices, there is an asterisk (*) before the job name.

To change the SET options, enter SET followed by an option. For example:

```
SET HEX RETURN                    SET FORMS QUME CHECKS RETURN
SET BPI MTU1:800 RETURN           SET TERMINAL FCOLOR 4 RETURN
SET LANGUAGE GERMAN RETURN        SET PROMPT WELCOME! RETURN
SET LOCK RETURN                   SET TDV MYDRIV RETURN
SET ELOCK RETURN
```

MESSAGES

?File in use

The file is locked by another user. Try again later.

%Filespec within SET.INI is too long

The filename you entered into SET.INI is invalid. Edit SET.INI and try again.

?The format for the command is: SET BPI MTUn: XX   Where n = tape
? drive number in the range 0 through 7 and XX is the desired density.

Make sure you designated the magnetic tape unit correctly and you have specified a BPI of 800, 1600, 3200 or 6250. For a list of valid MTUs, enter SET.

?The format for the command is: SET TERMINAL DRIVER [driver]. Where
? [driver] is the desired new terminal driver. Your current terminal
? driver is: [driver]. Available terminal drivers are: [list]

Make sure you have specified the correct disk and account for the driver, check your spelling, etc, and try again.

?Insufficient queue blocks

See your system operator about increasing or freeing system queue blocks.

?Invalid function

SET did not recognize the option you entered. Check your syntax and try again.

?Invalid job name

Use STAT or SYSTAT to see the current jobnames and try again.

%Memory module deletion failed.

An internal error occurred. Try again. If the problem persists, contact your System Operator.

?MTSTAT.SYS must be loaded into system memory
?when using the SET QIC commands.

Add a `SYSTEM MTSTAT.SYS` command to a test copy of your system initialization file, MONTST it, re-name it (when successful), and try again.

?Network identification must be specified

You did not specify a network ID in a LINK or NDV option.

?Specified network not active

Your system cannot locate the specified network.

?No alternate languages have been defined

There are no other languages available on your system at this time. For information on languages, see your *System Operator's Guide.*

?Operation is only available in release [number] or higher

Check your syntax, and the list of options, and try again.

?Printer not found

SET doesn't recognize the printer you specified. Check your spelling or use PRINT or PRNT to see what printers are on your system.

?Privileged operation - must be logged into OPR:

Log into DSK0:[1,2] and try again.

?SET QIC commands are not available on AM1000 systems.
?SET QIC commands are not available with the
? current hardware configuration.

The type of streamer and/or system hardware you have does not allow SET QIC commands to work.

?You may only set density on MTU devices

It is invalid to try to set recording density on any other device than an MTU (½” tape) device.

?Your terminal does not support [option]

You tried to SET your terminal to do something it can't do.

SETJOB

FUNCTION

Starts up a job.

CHARACTERISTICS

SETJOB is both re-entrant and re-usable.

When the system is reset or powered up, it automatically attaches the first job to the first terminal defined in your system initialization command file. Except for that special case, however, the system does not automatically attach any jobs to terminals. If you want a job to be able to use a terminal for input and output, you must explicitly attach the job and the terminal. This process involves the use of such commands as ATTACH, KILL, FORCE, MEMORY, WAIT, etc. The SETJOB command consolidates all these lines into one easy-to-understand line.

SETJOB is most commonly used in your system initialization command file, but it can be used at AMOS level.

FORMAT

```
SETJOB jobname, terminal, memory{, command{,...,command}}
```

jobname is the name of the job you want to start, ***terminal*** is the terminal to ATTACH it to, ***memory*** is the amount of memory to assign to the job (you may specify K or M for kilobytes and megabytes), and ***command*** is one or more optional commands FORCEd to the job. These could be any AMOS command, a command file to be executed, etc.

OPERATION

Enter SETJOB and the parameters for the job. For example:

```
SETJOB MARK,GOLDEN,150K,TIME RETURN
```

The AMOS command(s) at the end of the SETJOB line cannot include any commas. If they do, SETJOB interprets each comma as the end of one command and the beginning of a new one. For example, do not include an account number in the command, since SETJOB interprets the comma between the project and programmer numbers as the end of the command.

MESSAGES

?Account not found on login disk for specified job

You attempted to attach a terminal to a job logged into an account which no longer exists on the device specified (or the default device). See what can be done to log the job into another account.

?Bad password

You did not specify the correct password. Check your spelling and try again.

?Command is not in proper format, Correct format is:
.SETJOB jobname,terminal,memory, command,....command
where "command" is optional

SETJOB cannot understand the command line you entered. Re-enter the command, ensuring you have entered the command in the correct format (especially the commas).

%Setjob Logged in, but Port is Busy!
%Last forced command did not execute

For some reason, the job you were setting up could not respond to all the commands. It has been allocated memory, and logged in, but one or more commands failed to process.

?You must specify a memory size of at least 512 bytes

SETJOB can only allocate a job more than 512 bytes of memory. Re-enter the command line with a larger memory allocation.

?Unable to locate job with specified name

You tried to attach a terminal to a job not defined in the JOBS command in your system initialization command file. Use SYSTAT to see a list of the jobs defined on the system.

?Unable to locate terminal with specified name

You tried to attach a job to a terminal not defined in a TRMDEF command in your system initialization command file. Use TRMDEF to see a complete list of all of the terminals defined on your computer.

SETPEN

FUNCTION

Lets you set read/write penalties for disk activity.

CHARACTERISTICS

SETPEN lets you set the read/write penalty values for a particular logical disk. The read/write penalty value affects the amount of time a job is charged for performing disk activity. With intelligent disk controllers, a disk read or write requested by a job can continue into another job's time slice, effectively reducing the amount of time the following job receives. Changing the penalty setting can have two advantages: it can prevent jobs performing heavy disk access from excessively slowing other jobs on the system, and it causes the amount of CPU time being used by each job to be reported more accurately. However, it may slightly increase the time necessary for programs which do extensive disk I/O.

The default value for both reads and writes is 200. You can change these values to any value in the range 0 - 3312. Your change lasts only until the system is rebooted or you use SETPEN again.

FORMAT

```
SETPEN devn:
```

devn: is the device name of the disk you want to change the penalty values for.

OPERATION

To adjust the read/write penalties, type SETPEN and the name of the device you want to affect. For example:

```
SETPEN DSK0: RETURN
```

This displays the current settings. Enter the read penalty value you want to use and RETURN, then enter the new write penalty and RETURN.

You may want to increase the read/write penalty settings if a disk-intensive job slows down other jobs, indicating that its disk accesses are reducing the time allotted to them. However, be careful in changing these values, as setting them incorrectly could decrease overall system performance.

The values you enter are changed only in memory. When you reboot the system, the penalties will return to their default values.

MESSAGES

?Error - Device not found - devn:

The device you specified could not be found.

Error - Driver not found in system memory - devn:

The device driver for the device you entered is not in system memory.

?Error - Drive does not support penalty enforcing - devn:

The device driver for the device you entered does not allow you to set the penalty values. You cannot use SETPEN with devices which use this driver.

SHELL

FUNCTION

Executes AlphaMENU menu programs. Calls up a compiled menu to the screen.

For complete information about AlphaMENU, please refer to the *AlphaMENU User's Manual*, DSS-10044-00.

CHARACTERISTICS

SHELL is re-entrant and re-usable. You must have at least 32K of memory in your memory partition to use SHELL.

Do not try to use SHELL with any file that is not a SHELL command file or you may lock up your terminal.

FORMAT

```
SHELL {filename}
```

filename is the specification of the file that contains the menu definition code.

DEFAULTS

The default file specification is DSK0:AMOSL.CMN[7,11], default extension is .CMN.

OPERATION

CALLING THE MENU

To bring a menu to the terminal screen, log into the account containing the menu, and enter the name of the menu you want to use. For example:

```
SHELL DOC RETURN
```

WHAT YOU SEE

You will see six "boxes," some or all containing numbered choices. You may (depending on what kind of terminal you have) see an area highlighted in reverse-video display—if so, this is called the "selection marker." You will see a question displayed at the bottom of the screen, followed by a number.

MAKING A SELECTION

There are two different ways you can select a menu option. The first way is to enter the number of the selection you want. The six major options are numbers 10 to 60. Type the number of the selection you wish, and press RETURN, and the next level of menu appears, or that function is performed.

The second way is to use the cursor control (arrow) keys to move the selection marker onto the function you wish to select, press RETURN, and the next level of menu appears, or that function is performed.

MOVING THE SELECTION MARKER

Use the cursor control (arrow) keys to move the position of the selection marker. If your terminal doesn't have such keys, you can move the selection marker by pressing and holding down CTRL while typing K (up), J (down), H (left) or L (right).

The menus are set up so the selection marker "wraps" around the screen. If you are at any edge of the menu screen, and you press a key that would move the selection marker in a direction that is off the screen, you will see the selection marker appear on the opposite side of the menu.

This features makes it easy to reach any place on the screen with just a few keystrokes. With a little imagination, you can find the quickest way to position the selection marker to any place on the menu.

GETTING HELP

To see a display of helpful information, place the selection marker on the function you want information on (or type the number of it), and type ?.

EXITING A MENU DISPLAY

To go back to the previous menu, press ESC or CTRL/C. You will then see the next highest level of menu. If you are using the standard AMOS menu, typing "55" as the selection number when you at the main menu will bring you out of the menu and back to AMOS command level—other menus may have such a selection also.

MESSAGES

?File not found - [filename]

Check your syntax, or use the DIR command to locate the file, and try again.

SI

FUNCTION

Analyzes and reports on system configuration and speed.

CHARACTERISTICS

SI is neither re-entrant nor re-usable. It scans the system hardware and software to report on the computer, CPU, math coprocessor, and memory management unit type, AMOS and boot PROM revision levels, number of SSDs, total memory and system memory sizes. It then derives some speed indexes for the system.

FORMAT

```
SI {disk}
```

disk is the name of the logical unit on which to conduct a disk index.

DEFAULTS

SI defaults to not reporting a disk speed index.

OPERATION

Enter SI followed by the options you want. For example:

```
SI RETURN
SI SUB0: RETURN
```

SI does a set of operations that measure CPU power and floating point speed. A disk speed benchmark is optional. The results give a rough guide for the relative power of AMOS-equipped systems. You cannot use this test to compare AMOS and non-AMOS systems.

SI should be run with no other active users or background jobs on the system. Results for a given system should be within approximately 5% per run.

MESSAGES

?SI cannot be run from a spawned job

Your job is a spawned job (for example, a network connection or a MULTI job). You cannot get accurate statistics from this configuration. SI will refuse to run.

SIZE

FUNCTION

Displays the size (in bytes) of a disk file.

CHARACTERISTICS

SIZE is re-entrant and re-usable. The display is in decimal form.

FORMAT

```
SIZE filespec
```

filespec specifies the file whose size you want to know.

DEFAULTS

SIZE assumes the account and device you are logged into and a file extension of .LIT.

OPERATION

Enter SIZE and the file name. For example:

```
SIZE FORM.TXT RETURN
Size is 1483 bytes
```

MESSAGES

?Cannot open [filespec] - file not found

SIZE was not able to find the file you specified. Check your spelling and make sure the account and device specifications were correct.

?Cannot read [filespec] - device does not exist

Check your syntax or use DEVTBL to see a list of valid devices.

SKIP

FUNCTION

Skips to the next file mark on a tape mounted on a magnetic tape unit.

CHARACTERISTICS

SKIP is re-entrant and re-usable.

✋ **Don't use SKIP while another job is using the specified tape drive.**

You may specify up to 7 tape drives (for example, MTU0:-MTU6:). The magnetic tape drive you specify must be defined in the system device table as a non-shareable device. The program MTSTAT.SYS must be in system memory if you have an S-100 Bus system or any non-VME system. For information, see your *System Operator's Guide to the System Initialization Command File.*

✋ In order to use MTSTAT.SYS, you must be running the AMOS/32 or AMOS/L version of the operating system.

FORMAT

```
SKIP devn:
```

devn: specifies a magnetic tape drive.

OPERATION

Make sure the tape you want to access is mounted, then enter SKIP followed by the specification of the tape drive you want to access. For example:

```
SKIP MTU5: RETURN
```

SKIP issues a command to the magnetic tape driver to read forward on the currently mounted tape until it detects a file mark. If the drive is positioned at the front of a file, this command causes the tape driver to skip to the next file.

MESSAGES

?File specification error

Check your syntax, or use DEVTBL to see a list of the valid devices.

SLEEP

FUNCTION

Puts the current job in a waiting state for a specified period of time. While in this waiting state, the job will not accept any input, or perform any tasks.

CHARACTERISTICS

SLEEP is re-entrant and re-usable.

The SLEEP command is useful in command files for keeping your job inactive until another procedure completes. Allows you to select the length of time messages will stay on the terminal screen.

FORMAT

```
SLEEP {seconds}
```

DEFAULTS

The default is 0 seconds.

OPERATION

Enter SLEEP followed by the number of seconds you want your job to remain inactive. For example:

```
SLEEP 20 RETURN
```

You may halt the sleep at any time by pressing CTRL/C.

SLEEPR

FUNCTION

Causes suspension of a job until the time specified.

CHARACTERISTICS

SLEEPR is re-entrant and re-usable.

Generally used inside a command file. Can be used with the BACKUP command to perform file backups at specified times without human control.

FORMAT

```
SLEEPR HH:MM {AM/PM}
```

HH is the hour, and ***MM*** is the minute your terminal will become active again.

DEFAULTS

SLEEPR assumes AM.

OPERATION

Enter SLEEPR and the time you want your terminal to wake up. For example:

```
SLEEPR 2:10 PM RETURN
```

MESSAGES

? Specification error

You did not specify a time, or specified the time in an incorrect format. Check your syntax and try again.

SMEM

FUNCTION

Displays data about the system shared memory pool, and lets you remove "stuck" blocks.

CHARACTERISTICS

SMEM is re-entrant and re-usable. It displays memory addresses in the number base the system is using (usually octal). If you wish to see addresses in hexadecimal, make sure the HEX option is set before using SMEM. See the SET reference sheet for information on changing the numeric display base.

The PUSH and POP commands use shared memory, but do not show up on the display because they execute and clear immediately.

For information about using SMEM in your system initialization command file to set up the shared memory pool, see the *System Operator's Guide to the System Initialization Command File.*

FORMAT

```
SMEM {/switch}
```

switch is an option.

OPTIONS

/S	Display a summary report.
/D {address or name}	From OPR: only; removes specified memory block.

OPERATION

Enter SMEM at AMOS command level. For example:

```
SMEM RETURN
```

You then see an information display about the memory pool. The display shows:

Range	Address range in memory of the shared memory block.
Size	Size in bytes.
Name	Name of the block (if any). **FREE** means unallocated.
Owner	First job that allocated the block.
Count	Number of jobs currently using the block.
Flags	2 indicates a named block, 4 a permanent block. 6 means both.

A summary of total blocks and bytes used follows. The "total bytes" displays are in decimal (the others display in octal or hex, depending on how your job is set). If you use /S, you see only the summary display.

The System Operator may use /D to free a memory block from DSK0:[1,2]. This function, if used incorrectly, could damage memory—be sure you know what you are doing, and be sure you are removing the block you want to remove. For example:

```
LOG OPR: RETURN
SMEM/D pool1 RETURN
```

In the example above, ***pool1*** is the name of the "stuck" block you want to remove. You can find the address (or address name) by looking at the normal SMEM display.

MESSAGES

?Cannot locate shared memory block with address: xxxx

You specified an invalid memory block address to delete. Use SMEM without a switch to display valid addresses, then try again.

?Cannot locate shared memory block with name: xxxx

You specified an invalid or non-existent memory block name to delete. Use SMEM without a switch to display valid block names, then try again.

%Possible system interaction: xxx no longer exists, but SMEM did not remove.

Another job deleted the shared memory block while you were deleting it too. The block has been deleted.

?SMEM: already defined and can only be defined once

Check your syntax and try again.

?SMEM: can only be assigned during boot time

You cannot define shared memory after the system has finished booting.

?SMEM: illegal value specified on command line

Check your syntax and try again.

?SMEM: invalid address specification

The address you entered is incorrect. Use SMEM without switches to see the addresses.

?SMEM: invalid name specification

The name you entered is incorrect. Use SMEM without switches to see the addresses.

?SMEM: not defined

Shared memory is not defined in your system initialization command file.

?SMEM: specified address out of range

The address you entered is incorrect. Use SMEM without switches to see the addresses.

?SMEM: specified size will not fit into available memory

Your system memory size is too large. Reduce it and try again.

?SMEM: you must be logged into PPN 1,2 to remove shared memory

Log into 1,2 and try again.

SORT

FUNCTION

Alphabetically and numerically sorts data records in a sequential text file.

CHARACTERISTICS

SORT is re-entrant and re-usable. Sorts logical records in ascending or descending order. Sorts only sequential files—will not sort Random files. SORT replaces the file you specify with another file of the same name in which the data are arranged in the proper order. SORT uses the precedence in whatever language table is set for your job (i.e., for American English, the ASCII values). If you are sorting ASCII text in ascending order, all data that begin with upper case letters come before those with lower case. If you are sorting in descending order, all data records that begin with lower case letters come before those with upper case. You may sort a text file too large to fit into memory all at one time. SORT does not understand wildcard symbols.

SORT can handle a maximum record size of 510 bytes. The file cannot contain a null byte.

FORMAT

```
SORT filespec
```

filespec is the file you want to sort. SORT assumes an extension of .DAT and the account and device you're logged into.

OPERATION

Enter SORT and the specification of the file you want to sort. For example:

```
SORT LABELS.DAT RETURN
```

SORT now asks you for the following information:

RECORD SIZE SORT recognizes a RETURN as the end of each data record, but needs to know the size of the largest data record it is going to be dealing with. Enter the maximum size (in bytes) of the logical records in your file. Every character is one byte of data, including spaces and punctuation. Exclude carriage return and line-feed bytes. The minimum record size is two bytes.

KEY SIZE The key is the field in the record on which you want to sort (for example, customer name). SORT asks this question for each key you define. You can define up to three keys. If you want SORT to use less, press RETURN after you define the keys you want. Enter the size (in bytes) of the key.

KEY POSITION SORT asks this question for each of the keys you define. Enter the column number in the record where the first byte of the sort key occurs. The first byte of a record is position #1.

KEY ORDER SORT asks this question for each of the keys you define. Enter an A for ascending or D for descending ASCII order.

SORT now sorts the file. If your system has 8-bit character support, you see: `Using extended collating sequence`. After the sort is done, SORT displays statistics.

MESSAGES

?Cannot delete [filespec] - write protected

Write-enable your disk and try again.

?Cannot open [filespec] - file type mismatch

You tried to sort a random file. You may only sort sequential files.

?Command specification error

A filename was not entered on the command line. Re-enter the line including the name of the file to be sorted.

?Cannot find Sort I-O module

A file, SYS:SORSVA.SYS, was not found. SORT.LIT requires that file to be accessible.

?Enter A or D

Answer A for ascending order, or D for descending order.

?Entire key must be within record

Either the record size is too small, or the key size is too big. Re-enter the numbers, adjusting one or the other.

?Insufficient memory for sort

Delete any unnecessary memory modules from your user memory, or see your System Operator about increasing your memory.

?Key size must be > 0
?Key size must be less than record size
?Record size must be > 0

Enter a correct number.

?Maximum record size is 510 bytes

The maximum size of a data record in your file is 510 bytes. SORT cannot handle larger record sizes.

?Sort error - Device (VDK0:) has overflowed!

The virtual disk (VDK0:) was used for temporary file storage, and that temporary file became too large, aborting the COPY. Either increase the VDK size, or remove the temporary (*.SRT) name from your VDK.INI file.

-- Using extended collating sequence --

A message to say that an 8-bit collating sequence has been found in your job's active language definition file. That sequence will be used to order data in the file.

%Warning - A null byte was encountered in the input file. Nulls are discarded and not rewritten to the sorted file, resulting in lost data. You may press ^C at this time to terminate the sort and leave your data intact, or press RETURN to continue.

There is at least one non-ASCII character in the file you are sorting.

SRCCOM

FUNCTION

Compares two sequential files and lists the differences between them.

CHARACTERISTICS

SRCCOM is re-entrant and re-usable, and is useful for distinguishing between two versions of the same file so you can determine what changes have been made.

FORMAT

```
SRCCOM {listfilespec=}filespec,filespec{/switch}
```

The ***filespecs*** select the files you want to compare, ***listfilespec*** is a disk file to hold the comparison, and ***switch*** is an option request.

DEFAULTS

SRCCOM assumes a file extension of .M68 for the filespecs and .LST for the listfilespec. If no listfilespec is specified, the listing is displayed on the terminal.

OPTIONS

The switches may be abbreviated.

/QUICK	List only differences.
/BRIEF	List only differences, without line numbers.

OPERATION

Enter SRCCOM and (optionally) the specification of the file you want to create to hold the file comparison. Then type an equal sign and the two files you want to compare. If you want a brief or quick listing, use the /B or /Q option. For example:

```
SRCCOM CMPARE=CTLOG1.TXT,CTLOG2.TXT RETURN
```

Now you can edit, print, or display the list file. Here is an example of the comparison:

```
00001  00001    First line of text
00002  00002    So far, all the same.
00003  -----    A line only in the first file.
00004  00003    Text is again the same, but line # is different.
+++++  00004    A line only in the second file
```

The numbers on the left of the display are the line numbers of the first file. The next column of numbers are the line numbers of the second file. The dashes (-----) indicate a line not appearing in the second file, but appearing in the first file. The pluses (+++++) indicate a line of characters not appearing in the first file.

MESSAGES

?Cannot open [filename] - file not found

SRCCOM could not find one or both of the files you specified. Check your syntax, or use DIR to see what files are in your account.

STAT

FUNCTION

Displays a continuously-updating status of all the jobs on your system.

CHARACTERISTICS

STAT displays memory addresses in the number base the system is using for your numeric displays (usually octal). If you wish to see these addresses as hexadecimal numbers, make sure the HEX option is set before using STAT. See the SET reference sheet for information on changing the numeric display base.

✋ Do not use STAT inside a Task Manager Control file. The nature of Control file operation means it can't halt the STAT display. Therefore, the Control file locks up, and STAT continues to run until you reboot the system.

OPERATION

Enter STAT at AMOS command level. For example:

```
STAT RETURN

Status of AMOS Version 2.0(151) on 27-Apr-89   Time: 05:00:32 PM

Job  Term      PPN        Prog    Bytes @ address  CPU Time Status

JOB1 TERM1  DSK0:[200,2]  VUE     68122   1572746 00:08:34.4 RN Ti
JOB2 TERM2                LOGOFF  68608    430746 00:00:00.0 ^C Ti
TASK MANAGR DSK0:[1,2]    TSKIDL   8192    222746 00:02:59.9 RN Sl

Qfree: 109    Up time:  52:20:22    Disk queue: 0
```

All of the displays are updated as they change. The first item is the job name. These jobs are defined in your system initialization command file. Next, the display shows you which terminal each job is attached to, and the account it is logged into (if there is no PPN number, the terminal is logged off).

The program the job is executing is displayed next, with the number of Bytes in use and the memory address of the program following. After that, it shows the amount of CPU time the program has used, and the status code, which shows what phase is currently operating. The codes for the Status display are:

^C	Control-C (job at AMOS command level)
Cc	Control-C pending
Ew	Waiting for external event
Fi	Waiting in LOKSER queue

Io	I/O accessing other than terminal
Ms	Waiting for ITC message
Pl	Has processor locked
Rn	Running
Si	Waiting for software interrupt
Sl	Sleeping
Sp	Suspended
Sw	Semaphore wait
Ti	Waiting for terminal input
To	Waiting for terminal output to complete

For more information on job status codes, see your *AMOS User's Guide.*

Qfree is the number of queue blocks allocated but not in use. If this number is less than 15, it indicates your system is low on queue blocks. You may want to allocate more by adding to the number that follows the QUEUE command in your system INI file.

The Up time is the time the system has been running since it was booted. The Disk queue number is the number of users waiting to access the disk or waiting for a disk access to complete. This information is valid only on certain hardware configurations.

During the display you may press ESC to suspend the display and show the question: `Enter command (Q,R):` on the bottom line. Typing **Q** clears the screen and returns you to AMOS. Typing **R** resumes the STAT display. You may also use CTRL/T or CTRL/R. These cause the display to move forward or backward over 17 jobs. This is useful if you have more than 17 jobs defined on your system.

A down arrow on the display indicates there are more jobs to view; an up arrow means you can move backward.

You may press CTRL/C to exit the display at any time.

STAT1

FUNCTION

Displays a continuously-updating status of all the jobs on the system, concentrating on job scheduler and disk activity.

CHARACTERISTICS

STAT1 displays more detailed, technical information than the STAT command. It switches your terminal to 132-column display and shows this information for each job:

- Name
- Program being executed
- How many times the job has run
- How many times the job has been placed next in the run queue
- How many times the job has acted as a preemptor job
- How many times the job has been preempted by another job
- How many times the job has been placed at the end of the job queue
- CPU time used
- Job status bits
- Number of cached disk reads and writes
- Total disk reads and writes
- Percentage of reads and writes that were cached
- Job priority setting

If your terminal is not capable of 132-column display, the disk read/write and cache information, and the job priority, do not display.

The bottom of the screen shows the original uptime, the uptime since you last cleared values (see below), total CPU time used by all jobs, the number of jobs in the run queue, and the number of jobs in a wait state.

OPERATION

Enter STAT1 at AMOS command level.

The display is continuously updated. If you want to reset it, you can type `C`. This clears all fields except the job status and priority and the original uptime.

If there are more jobs than fit on your screen, you can use the up and down arrows to scroll the list or CTRL/T and CTRL/R to go forward and back.

When you want to leave the display, press ESC. Type **Q** to exit or **R** to return to the STAT1 screen.

STRDIR

FUNCTION

Displays a list of the files on a 1/4" Streaming Tape Drive cartridge. Can also create a disk file containing the list.

The STRxxx commands are included only for compatibility with earlier operating system versions. Do NOT use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

CHARACTERISTICS

Used with STRSAV (to write disk files to tape) and STRRES (to copy files from tape to disk). STRDIR can read only cartridges written by STRSAV.

If your system contains both traditional format and extended disks, you must be logged onto the same type of disk when you use STRDIR that you were when you created the backup using STRSAV. While STRSAV does work with extended disks in some situations, we strongly suggest you use BACKUP to back up extended disks.

Accepts full wildcard specifications, which select the files to be listed in the directory. The account and device portions of the specification refer to the disk account and device from which the files were originally backed up. See your *AMOS User's Guide* for information on wildcard file specifications.

FORMAT

```
STRDIR {/switch}{{listfilespec}=}{filespec}{,filespec(s)}
```

switch is an option request, and ***listfilespec*** specifies a disk file to contain the directory display. The filespec(s) specify the files on the tape you want to see.

DEFAULTS

The default listfilespec is DIRECT.LST in the account and device you are logged into. The default filespec is *.* and the account and device you are logged into.

OPTIONS

The only STRDIR switch is /KILL. It is an operation switch that deletes any listfile that matches the specified listfilespec before creating the new listfile.

OPERATION

Enter STRDIR and the files you need. For example, to send a directory display of all the .DAT and .BAS files on a cartridge to your terminal, load the desired cartridge into the streamer unit and enter:

```
STRDIR ALL:[]*.DAT,*.BAS RETURN
```

The first number of the display is the file's relative position on the tape. Next you see the device specification, the filename and extension, and the account specification of the file as it appeared on the disk it was backed up from. The next number tells you the number of disk blocks the file takes up.

The letter following the block count tells you whether the file is sequential, or linked file (**L**), or a random, or contiguous file (**C**). Then STRDIR gives the date and time the file was originally copied onto that cartridge. Finally, STRDIR gives the hash total for the file if one was calculated with the STRSAV/HASH option. At the end of the directory display, STRDIR tells you how many files were listed. If the cartridge contains a warm boot monitor, a message tells you the tape is *Bootable*. This indicates a warm boot monitor is the first file on the cartridge even though it may not appear on the directory listing you requested.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

STRDIR needs this file to process wildcard symbols. Make sure SCNWLD.SYS is in DSK0:[1,2], and you have enough memory to load it in your partition.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see what devices are listed on your system, and try again.

?Cannot READ [device-name] - device is not mounted

MOUNT the device, and try again.

?More than one output specification

Try again, using only one listfilespec.

?No file oriented device corresponding to [device-name] is mounted

Check your syntax, or MOUNT the device, and try again.

%No such files

STRDIR was unable to find any files matching your input specification. Try using STRDIR ALL:[ ]*.* to see all files listed on the tape.

?Tape is not file structured

STRDIR can only read tapes written by STRSAV. Make sure you loaded the correct tape cartridge.

STRRES

FUNCTION

Writes files from a 1/4" Streaming Tape Drive cartridge to disk. Allows you to restore file-oriented disk backup from tape cartridge to disk.

✋ The STRxxx commands are included only for compatibility with earlier operating system versions. Do NOT use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

HINTS/RESTRICTIONS

Used in combination with STRSAV (to write disk files to tape) and STRDIR (to display a list of files on a tape). Only reads tapes created by the STRSAV command. Not for transferring data between Alpha Micro and non-Alpha Micro computers.

If your system contains both traditional format and extended disks, you must be logged on to the same type of disk when you use STRRES that you were when you created the tape using STRSAV. While STRSAV does work on extended disks in certain situations, we strongly suggest you use BACKUP to back up extended disks.

You may not copy to a disk account other than the account you are currently logged into unless you are logged into an operator's account, [1,2]. If you are in [1,2], and you specify an account that does not exist, STRRES creates that account. You may copy files into the account you are logged into from any other account, regardless of project number or device specification.

STRRES is a wildcard command. See your *AMOS User's Guide* for information on using wildcard commands.

The input specification must give the exact specification of the files you want to transfer from the 1/4" streamer cartridge, including device and account specifications of the files **as they were written to the tape.** The output specification allows you to specify the device and account the files are to be written to on the disk, and to rename the files as they are written out to the disk.

FORMAT

```
STRRES{/switch}{outfilespec}={filespec}{,filespec}{/switch}
```

switch specifies a STRRES option, ***outfilespec*** specifies the files to be created on the disk, and the ***filespecs*** specify the files to be transferred from the tape (with device and account specifications of the files when they were backed up).

DEFAULTS

The output specification defaults to the input specification. If you are logged into [1,2], the default output account specification is [ ]. The input specification defaults to *.* and the account and device you are logged into. The defaults are /NOQ, /D, /NOH.

OPTIONS

Switches are all file switches, and may be abbreviated to any unique letters.

/DELETE	Copy over existing file(s).
/NODELETE	Don’t copy over existing file(s).
/HASH	Restore only files with different hash totals on the disk (if files were saved using STRSAV/H).
/NOHASH	Don’t check hash totals.
/QUERY	Confirm before selecting files.
/NOQUERY	Don’t confirm before selecting files.

OPERATION

Load the desired cartridge into the streamer unit and enter STRRES and the files you need. For example, to copy from a cartridge all .BAS files originally backed up from account [110,2] on DSK2: over to your current account DSK3:[110,5]:

```
STRRES DSK3:[110,5]=DSK2:*.BAS[110,2] RETURN
```

STRRES rewinds the tape and starts searching for the specified files. It reads the directory from the beginning of the cartridge and scans it to select which files to restore. This allows STRRES to stop looking when it locates the files, without scanning the whole cartridge.

Use /Q to ask for confirmation before each selection. Enter a Y for Yes or an N for No after each STRRES prompt. You don't need to RETURN. For example:

```
STRRES *.OLD[]=DSK3:*.BAS[10,*]/QUERY RETURN
STR0:DSK3:B32.BAS[10,4] to DSK2:B32.OLD[10,4]? Y
STR0:DSK3:SCRTCH.BAS[10,6] to DSK2:SCRTCH.OLD[10,6]? N
```

You may press CTRL/C at any time to stop the transfer. When STRRES has located each file in the directory, it begins transferring them to the disk and accounts you have specified. When it is finished, STRRES tells you how many files were transferred.

MESSAGES

%Bypassing BADBLK.SYS[1,2]
% BADBLK.SYS exists to prevent bad blocks
% on a device from being allocated, and
% should never be directly accessed.

An informative message.

%Bypassing STRTOC.IPF[1,2]
% STRTOC.IPF is the name of
% Table-of-contents file from tape,
% cannot be destination file name.

An informative message.

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

STRRES needs this file to process wildcard symbols in your file specifications. This message can mean SCNWLD.SYS does not exist or you do not have enough memory to load the file into your partition.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Cannot OPEN [device-name] - protection violation

Log into OPR: or the account you want to write into, and try again.

?Cannot read [device-name] - device is not mounted

Mount the device and try again.

?Cannot restore extended directory format files to an old format disk
?Cannot restore old format files to an extended directory format disk

You must restore files to the same format (traditional or extended) disk they were backed up from. When restoring, you must also be logged on to the same type of device you were logged on to when creating the backup.

?Device full

See your System Operator about erasing files from or clearing room on the device.

?Files may not be transferred to RES:

You may only add programs to system memory by using SYSTEM statements in your system initialization file.

?Missing output specification

You left out the equal sign in the STRRES command line; STRRES couldn't tell which information was your file specification and which was your outfilespec. Try again.

?More than one output specification

Try again, using only one output specification.

%Not copied - Destination file already exists

Try again, using /D if you want the file copied over.

%Not selected - Destination file has same HASH as source file

You used /H and STRRES found matching hash totals on the cartridge and the disk. The files are identical so no transfer is necessary.

%Not selected - Source file does not have a calculated HASH total

You used /H but the cartridge does not contain a HASH total to compare—/H was not used when the files were saved.

?Output MFD is full

The Master File Directory only has room for 63 entries. The transfer in progress would have created a new account, but there is not enough room in the MFD. See your System Operator.

?Tape is not file-structured

The tape you are trying to read was not written by STRSAV. Make sure you have mounted the right tape.

?You are not logged in under [1,2], can't create [p,pn]

You cannot copy to a nonexistent account unless you are logged into an operator's account, [1,2]. If you copy to a nonexistent account while logged into [1,2], STRRES creates the account for you.

STRSAV

FUNCTION

Writes copies of disk files to 1/4" streaming tape drive cartridges. It is a file-oriented disk backup program.

The STRxxx commands are included only for compatibility with earlier operating system versions. Do NOT use these commands unless absolutely necessary. Use the MTUxxx commands for all tape backup, and CRT620 to create warm boot tapes!

CHARACTERISTICS

STRSAV is re-entrant and re-usable. Copies a file and its device/account specification, along with the date and time of backup. Used with STRRES (to restore files to disk) and STRDIR (to give a directory of files on a tape). STRSAV is for file backup only; not for transfer of data between Alpha Micro and non-Alpha Micro computer systems.

STRSAV is a wildcard file command. See your *AMOS User's Guide* for information on wildcard specifications.

You may back up files from any disk account onto tape whether or not the account is in the project you are logged into. STRSAV writes the disk specification of each file to the tape, but does not transfer any password associated with the disk account. You cannot append files to an existing tape.

Because STRSAV writes the date and time of backup to the tape cartridge, use DATE and TIME to check the system date and time before using STRSAV.

STRSAV creates a temporary directory file named STRTOC.IPF in the current disk account. This file is erased and rewritten each time STRSAV is used within the account. Do not use this filename for one of your own files since it will be written over the next time you use STRSAV or STRRES. If you specify STRTOC.IPF in an STRSAV command line, STRSAV automatically bypasses it.

STRSAV locks up all other users on your system. Be sure to notify other users before using STRSAV.

FORMAT

```
STRSAV filespec{/switch}{,filespec(s){/switch}}
```

filespec specifies the file(s) you want to back up and ***switch*** is an option request. The default file specification is *.* and the account and device you are logged into.

OPTIONS

The switches can be abbreviated to any unique combination of letters.

/BOOT	Create a warm boot cartridge (operation switch).
/NOBOOT	Don’t create a warm boot cartridge (default, operation switch).
/HASH	Calculate a hash total (file switch).
/NOHASH	Don’t calculate a hash total (default, file switch).
/QUERY	Confirm before selecting files (file switch).
/NOQUERY	Don’t confirm (default, file switch).
/SUPPRESS	Don’t list files on terminal as they are backed up. May speed up backup.
/NOSUPPRESS	Lists files on the terminal.

OPERATION

Load an empty cartridge into the streamer unit and enter STRSAV followed by the specification selecting the files you want to back up. For example:

```
STRSAV MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

STRSAV reminds you no one else may use the system while it is running. Press RETURN to continue or CTRL/C to exit. If you press RETURN, STRSAV erases and rewinds the cartridge.

If you used /BOOT, STRSAV first asks for the input warm boot file name. Type the name of the warm boot monitor file you generated with the WRMGEN program. The default specification is DSK0:AMOSL.WRM[1,4].

STRSAV then asks for the tape label data: Volume name (up to 40 characters); Volume ID (up to ten characters); Installation (maximum 30 characters); System (also 30 characters); and Creator (thirty characters). This information is displayed by STRDIR. It helps other people know what is on the tape, and who put it there.

STRSAV now displays the names of the files it is selecting to save.

As STRSAV copies, it prints one dot for each fifteen files transferred. You may press CTRL/C at any time to stop further transfers.

When you use /Q, STRSAV asks for confirmation before each transfer. Enter Y for yes, or N for no; it is not necessary to press RETURN. Remember the placement of /Q in the command line can affect which files it applies to. For example:

```
STRSAV *.DAT,/Q *.BAS RETURN
C40.DAT to C40.DAT
LSTSQR.BAS to LSTSQR.BAS? Y
NEW.BAS to NEW.BAS? N
```

You can use /H to calculate hash totals for certain files to identify a particular version of the file. This saves time when you use STRRES to restore files to the disk, because you can specify /H to transfer only the files with different hash totals.

You can use /B to transfer a warm boot monitor to a cassette and also back up other files onto the same cassette. See the CRT620 and WRMGEN reference sheets to find out more about warm boot monitors.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

STRSAV needs this file to process wildcard symbols in your file specifications. Make sure SCNWLD.SYS is in the proper account and you have enough memory to load it in your partition.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices on your system, and try again.

?Cannot READ [device-name] - device is not mounted

MOUNT the device and try again.

%Cannot save. File beyond 32MB boundary. Use BACKUP command.

One of the files you've specified is past the 32MB boundary of an extended disk. You must use BACKUP to save these files.

%Field size exceeded. Re-enter.

Check the maximum length of the field, and try again.

?nn files not transferred. Beyond 32MB boundary. Use BACKUP command.

If you attempted to save files past the 32MB boundary on an extended disk, this message tells you how many files were not transferred. Use BACKUP to save these files.

?Output file spec not allowed

You tried to specify an output file or included an equal sign (=) before the input specifications. Try again without the output file.

%Zero blocks in this file. Not selected.

STRSAV found a directory entry for a file with a size of zero blocks. It will not copy a zero block file. It skips the file and continues.

STRSAV can also display standard AMOS error messages followed by `while copying [filespec]`. This tells you how far STRSAV got before the error. You can then use STRDIR to display the directory file of the cartridge and see how many files were actually transferred. All the files listed before the one shown in the message are recoverable; the rest are not.

SUBMIT

FUNCTION

Submits files to, and edits, the Task Manager queue file.

CHARACTERISTICS

Used with a control file to execute jobs on the Task Manager system. For information on the Task Manager, see your *Task Manager User's Manual.*

FORMAT

```
SUBMIT {queue-filespec=}{control-filespec}{/switch}
```

queue-filespec is the specification of the Task Manager queue you want to use, ***control-filespec*** is the control file to submit or edit, and ***switch*** is an option request.

DEFAULTS

Default queue is DSK0:BATQUE.SYS[1,4]. Default control-file extension is .CTL. The default queue-file extension is .SYS. Default switches are \NOR, /NOP, and /NOLO.

OPTIONS

All switches can be abbreviated to any unique name.

/AFTER:{+}mm-dd-yy{,hh:mm AM/PM}	Task is run after specified absolute or relative time.
/DEADLINE:{+}mm-dd-yy {,hh:mm AM/PM}	Task must run before specified time, or it will be killed.
/ERROR:{NONE} {FATAL} {ALL} {WARNING}	***FATAL***, ***WARNING*** or ***ALL*** will abort task if a system error occurs. FATAL kills on fatal system errors, WARNING on warning messages.
/KILL	Removes file from the queue.
/LIMIT:{+}mm-dd-yy {,hh-mm AM/PM}	Task must be completed in specified time period or it will be removed from the queue.
/LIST	Lists queue file contents. Default if no filespec specified.
/LOGTIME	Puts run date/time in log file.
/NOLOGTIME	Negates /LOGTIME.
/MEMORY:n	Task needs ***n***K to run. Default is 32K.

/NEXT:mm-dd-yy{,hh,mm}	Task will execute specified relative time after submitted time.
/OUTPUT:filespec	Specify an output file for the task. Default is control-filename.LOG.
/PERMANENT	File remains permanently in the queue, executing at specified time.
/NOPERMANENT	Negates /PERMANENT.
/PRIORITY:n	Task needs priority of 1 to 512 to run. Default is 256. The greater the number, the higher in the queue. **You cannot change a task's priority while it is running**.
/RESTART	File restarts if system crashes while it is running.
/NORESTART	File will not restart.
/REVIVE	Revives a suspended task.
/SEQUENCE:n/switches	Updates task #***n*** with ***switches***.
/SUSPEND	Suspends task.

OPERATION

Enter SUBMIT followed by an optional queue-filespec and equal sign. Then enter a control filespec and any optional switches. If no control file is specified, SUBMIT shows you the queue listing. For example, to submit the file TEST.CTL:

```
SUBMIT TEST RETURN
```

The next command submits TEST.CTL to queue OURQUE.SYS. It is placed permanently in the queue, and runs every day after 3:12 AM, starting on March 17, 1989. If the system crashes, the task is restarted upon bootup. The queue display shows a "P" under status to show it is permanent.

```
SUBMIT OURQUE=TEST/RESTART/PERM/AFTER+17-03-89,03:12 RETURN
```

In the next case, the command instructs the Task Manager to change the memory requirements of job #14 in the queue to 40K. You don't need a job name, since the sequence number is unique.

```
SUBMIT/SEQUENCE:14/MEMORY:40K RETURN
```

MESSAGES

?Cannot open [filespec] - invalid filename

Check the syntax of your file specification and try again.

?Cannot open [filespec] - file not found

Check your file specification, or use DIR to find the file, and try again.

?Not enough free queue records for request

The queue file is full. No more SUBMIT jobs can be put in the queue until either a non-recurring job finishes, or the queue file is expanded.

?Queue file not BATCH compatible

The queue file you specified is not a Task Manager batch queue file. Select another filename and try again.

?Specified entry not found in queue.

Make sure you have the right queue file.

?Task not found in queue

The task you specified was not in the batch file queue. Use SUBMIT to view the current entries, and try again with a different task sequence number.

SYMLIT

FUNCTION

Creates a symbol table file for machine language object files to let you reference user defined symbols when you use the AlphaFIX symbolic debugging program. Also lets you generate a program or load map file.

CHARACTERISTICS

SYMLIT is re-entrant and re-usable. The object files M68 (the assembler) creates contain complete information about the symbols used in your program, as well as the actual generated code. To make this list of symbols available to the debugging program, AlphaFIX, you must use the SYMLIT program to generate a symbol table file.

SYMLIT processes files in the order in which their specifications appear on the command line. You may not specify an overlay or library file as the first file on the command line.

SYMLIT supports library and optional files. For information on library, optional, and load map files, see your *Assembly Language Programmer's Manual.* This manual also contains information on SYMLIT, M68, LNKLIT, GLOBAL, and LIB. For information on AlphaFIX, see your *AlphaFIX User's Manual.*

FORMAT

```
SYMLIT{/switch}filespec{filespec...}{/switch}
```

The ***filespecs*** select the files you want to process and ***switch*** is an option request. You may not specify an overlay or library file as the first filespec on the command line.

DEFAULTS

SYMLIT uses the default extension of .OBJ, unless you are specifying a library file, in which case it uses the default extension of .LIB.

SYMLIT assumes the account and device you are logged into. If it does not find the file there, it looks in your project library account, [P,0]. Finally, it looks in the System Assembly Language account, DSK0:[7,7].

OPTIONS

/B	Doesn’t force word alignment of .OBJ modules.
/E	Includes equated symbols in symbol table file. Use with /M to put equated symbols in the load map file. Operation switch.

/L Designates a library file. File switch.

/M Generates a load map (.MAP) file. Operation switch.

/N Suppresses the /S switch. Operation switch.

/O Designates an optional file. File switch.

/P Generates a program (.LIT or .OVR) file. Operation.

/R Designates a required file. Cancels /L and /O. Default, file switch.

/S Generates a symbol table (.SYM) file. Default, operation switch.

/U Doesn’t automatically include SYSLIB.LIB in linkage.

/X Allows maximum DSECT area of 64K, rather than 32K default, by allowing full, 16-bit signed offsets.

OPERATION

Enter SYMLIT and the files you want to process. For example:

```
SYMLIT/M VISFIL,VIS1,UTILIT/L RETURN
```

The command line above specifies a library file, UTILIT.LIB/L. By using /M, a load map file is also created.

If you have more file specifications than will fit on one line, end the current command line with a comma. SYMLIT then displays an asterisk and you may continue your list of file specifications. SYMLIT displays several messages as it processes the files. The exact messages you see depend on the options requested and files specified.

MESSAGES

?Attempt to directly reference a DSECT symbol

Index through a base register when referencing a symbol defined in a data section.

?Command error

Check your syntax and try again.

?Fatal error - At most one DSIZE may appear in an overlay

Check the instructions for use of the DSIZE pseudo opcode, and try again.

specify overlay [overlay] as optional

Overlays may not be optional. Try again.

?Fatal error - DSIZE must not appear in an overlay

Check the instructions for use of the DSIZE pseudo opcode, and try again.

?Fatal error - Expression stack error

An error occurred when SYMLIT evaluated some expressions in your files. Contact your Alpha Micro service division.

?Fatal error - Expression stack overflow

You exceeded the number of nested expressions that SYMLIT can handle. Find the overly complex expression in your source file and simplify it.

?Fatal error - First file must not be a library

To let SYMLIT correctly resolve external references to a library, you must specify the program that references that library before you specify the library file itself.

?Fatal error - First file must not be an overlay

To let SYMLIT correctly resolve external references to an overlay, you must specify the program that references that overlay before you specify the overlay file itself.

?Fatal error - Insufficient memory

There wasn't enough memory for what you specified. Increase the memory in your partition if you can. See your System Operator for help.

?Fatal error - Overlays of code are not permitted
Next expected address is [address]
Overlay code address is [address]

Your program is trying to overlay previous code. Check your .M68 programs to make sure your overlay references are correct.

?Fatal error - Overlay symbol "[symbol]" in segment [segment]
was not defined in a previous input segment

SYMLIT is trying to process a supposed overlay file, but has seen no references to the overlay in a previous file. Without such a reference, SYMLIT cannot construct the overlay.

?Fatal error - Overwriting of impure zone not permitted Next expected address is xxxx Overwriting address is yyyy.

Check the instructions for use of the DSIZE pseudo opcode, and try again.

Symbol file finished, n errors exist

Lets you know how many errors occurred during the processing.

?Undefined switch /x - ignored

SYMLIT didn't recognize the switch you specified. See OPTIONS above for the valid switches.

?[symbol] undefined

An external symbol is undefined. You referenced a symbol not previously defined or you made a reference to a non-existent label. Make sure any EXTERNed symbols in one segment are defined by an INTERN statement in another segment.

SYSACT

FUNCTION

Adds or deletes user accounts on a specific disk. Adds or changes account passwords. SYSACT can also initialize an entire disk.

CHARACTERISTICS

SYSACT is re-entrant and re-usable. SYSACT modifies the Master File Directory (MFD) of a specific disk. The MFD lists all accounts on the disk (listed by their project-programmer numbers) and the password (if assigned) for each one. You may add or delete disk accounts, and add, change, or delete account passwords. You must be logged into an operator's account, [1,2], to run SYSACT.

If a disk has never been used before, you may need to prepare it before you can use SYSACT on that disk. All disks received from Alpha Micro are pre-certified for you.

See your *System Operator's Guide* for information on what type of disks should be formatted or certified, and for instructions on when and how to certify a disk.

Always use SYSACT to initialize a disk after you format it. **Initializing a disk erases all data on it**. Certified disks do not need to be initialized; however, if you want to delete all data from a logical device of a disk that has been certified, you may do so by initializing the device.

Initializing a floppy diskette disables buffered writes if the diskette was mounted with /B (see the MOUNT reference sheet).

SYSACT does **not** erase the BADBLK.SYS file from the first logical device of any physical drive. This file contains the bad block information for the entire physical drive. SYSACT erases BADBLK.SYS from logical devices which are not the first device on their physical drive.

After the device has been formatted (and initialized) or certified, use SYSACT to add accounts to the disk. When adding accounts, remember the project-programmer numbers are in octal—the project number may range from 1 to 377; the programmer number may range from 0 to 377. **You cannot use account [377,377]—it is reserved for special use**. The numbers are separated by a comma.

Project numbers 1 through 77 on DSK0: (the system disk) are reserved for use by Alpha Micro. Accounts with the same project number are in the same project; users may transfer files into another account if both accounts are in the same project. If an account's programmer number is 0, that account is the library account for the project. For example, [110,0] is the library account for all accounts in the 110 project.

You can exit from SYSACT using the E command or CTRL/C. However, all changes you make in SYSACT become effective when you make them, not later when you exit. Therefore, be very sure you know exactly what you want to do before you use any SYSACT commands.

FORMAT

```
SYSACT devn:
```

devn: is the specification of the logical unit whose MFD you want to modify.

OPERATION

Log into an operator's account ([1,2]). Enter SYSACT followed by the specification of the logical unit whose MFD you want to modify. For example:

```
LOG 1,2 RETURN
SYSACT DSK2: RETURN
```

The SYSACT prompt symbol is an asterisk, *. After the asterisk you may enter any of the commands below.

COMMAND SUMMARY

A p,pn Adds account p,pn to the disk. SYSACT asks you for a password. If you don't want the account to have a password, just press RETURN. Passwords must be six characters or less.

C p,pn Changes the password of the account p,pn. SYSACT prompts you for a new password (0-6 alphanumeric characters). You can change a password to no password by pressing RETURN in response to the new password question.

D p,pn Deletes account p,pn. You can't delete an account with files in it.

E Returns you to AMOS command level. You may also exit by pressing CTRL/C.

H Displays a list of all SYSACT commands.

I Initializes the entire disk. Erases all data on the disk by zeroing out the MFD. It also initializes the bitmap. It saves the BADBLK.SYS file if that file exists. SYSACT asks you to confirm this command before it initializes the disk. If you enter **Y**, SYSACT continues. On AMOS 2.0 and later systems, SYSACT prompts: **Create extended directory structure?**. If you want the disk to use extended directories and larger files, enter **Y**. If you don't, enter **N**. If you just press RETURN, it defaults to extended directories.

L Displays a list of all of the accounts in the MFD and any associated passwords. For example:

```
*L RETURN
1,2    SYSOP
200,1
```

MESSAGES

?Account already exists

Use the L command to see what accounts are on the disk.

?Account does not exist

You tried to change the password of an account or tried to delete a non-existent account. Use the L command to see a list of all accounts on the disk.

?Account has files on it

If you want to delete the account, exit SYSACT, log into the account you want to delete, and move or erase all files. Run SYSACT again to delete the account.

?Damaged MFD

The Master File Directory structure on the disk has somehow been damaged. If the MFD structure has been damaged while using the DELETE option of SYSACT, it may still be intact for all other MFD-oriented operations. Recovery from a damaged MFD may require a complete re-initialization of the disk. See your System Operator for help.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of devices.

?Device in use - try again later

SYSACT must have exclusive use of the disk MFD and bitmap while making any changes. These items are "locked" at the moment by another program. Try again in a moment.

?Error during [function]

A device error occurred. You may see other messages to further define the error. See your System Operator for help.

?Error - PPN not written to MFD

A project-programmer number was added to a floppy diskette, and the User File Directory was updated, but not the Master File Directory. See your System Operator for help.

?Fatal system error while running SYSACT

Try using SYSACT again. You may want to reboot (after warning the other users on the system).

?File specification error

You made a mistake in specifying the device name. Make sure you included the colon (:) and try again.

?PPN format is octal P,Pn(P = 1 to 377, Pn = 0 to 377)

Check your typing, or use the L command to see a list of accounts on the disk. Then try again.

?Illegal password - must be alphanumeric

Check your syntax and try again.

?Invalid command - type H for help

Use the H option to see a summary of all of the commands, and try again.

%MFD forms an endless loop

Add some accounts to the device before using the "L" option again.

%No initialization performed.

This message assures you the initialization did not take place.

?Out of memory

See your System Operator for help with increasing your memory partition size.

%Warning - You may lose data if this logical
is fully used. This logical is greater than 32MB!

You have initialized this disk to a traditional format directory structure but the logical disk size is larger than the largest traditional format drive (32MB). This can cause problems if data is loaded onto the disk. Check the disk size and your choice of format type before proceeding or aborting.

Please enter a number

Enter a number and press RETURN.

?Privileged program - must be logged into [1,2]

Log into an operator's account, [1,2], and try again.

?PPN 377,377 is reserved and may not be used

Under AMOS 2.x, you cannot assign a PPN of [377,377]. Choose another PPN.

SYSLOG

FUNCTION

Produces a system error list.

CHARACTERISTICS

SYSLOG is the formatting program of the event logging system. SYSLOG reads the log file, SYSLOG.SYS, and produces a listing in the file SYSLOG.LST. This is a chronological listing of all events logged since the last time the log file was cleared. Its summary gives the total number of times each event type occurred, the average time between system restarts (average uptime), and the system availability as a percentage of the total time covered by the report. For a complete list of special events which are monitored under AMOS, and instructions on setting up event logging, see your *System Operator's Guide*.

LOGGER.LIT, which actually records the error messages, will report an error code 99 to the status display if it cannot record the message because there are not enough queue blocks available. If this error tends to reoccur, please contact the Alpha Micro Technical Assistance Center.

FORMAT

```
SYSLOG {/switch} {filespec}
```

The optional ***filespec*** is the specification of the log file for the event logging system. The default specification is DSK0:SYSLOG.SYS[1,2]. This should match the file you enter in the LOGGER statement in your system initialization command file.

Even if you specify a different log file name, the output file for SYSLOG is always SYSLOG.LST in the account which the user is logged in to.

OPTIONS

/C Clears the log file, SYSLOG.SYS after producing the report.

/D Adds a second line to the log file which includes diagnostic information. The diagnostic information added to the log file is the content of the stack at the time of the event. For ease of interpretation, ensure your job is set to give hexadecimal output by using the SET HEX command before running SYSLOG/DIAG.

OPERATION

To generate a listing of logged events with diagnostic information, enter:

```
SYSLOG/D RETURN
```

SYSLOG generates a new listing in the SYSLOG.LST file. You may print the file or view it using AlphaVUE. To clear the log file:

```
LOG [1,2] RETURN
SYSLOG/C RETURN
```

MESSAGES

?The /C switch requires that you be logged-in to [1,2]

Log into an operator's account, [1,2], and try again.

?Invalid opcode in filename -- opcode is nn

SYSLOG cannot decode the information in the specified LOGGER file. SYSLOG will attempt to resynchronize output at the next entry in the file.

SYSTAT

FUNCTION

Displays information about the jobs running on the system.

CHARACTERISTICS

SYSTAT is re-entrant and re-usable.

FORMAT

```
SYSTAT{/switch}
```

switch is an option request.

OPTIONS

/N	Don’t list the devices and blocks free.

OPERATION

Enter SYSTAT at AMOS command level:

SYSTAT RETURN

The name of the *job* is displayed first, then the name of the *terminal* to which the *job* is attached. Then comes the *user name*. Next is the *account* the *job* is logged into. Following that is the terminal status for the job. The codes stand for:

^C	Control-C—job is inactive
EW	External Wait state
IO	I/O access other than terminal
MS	Message Wait
RN	Running
SI	Wait for Software Interrupt
SL	Sleep state
SP	Suspended state
SW	Semaphore Wait
TI	Terminal Input wait state
TO	Terminal Output wait state

For more information on job status codes, see your *AMOS User's Guide.* After that you see the name of the last program run by the job before you used the SYSTAT command, and the number of bytes of memory (in decimal) allocated for that job.

SYSTEM

FUNCTION

Displays the programs currently in system memory and provides information about your system.

CHARACTERISTICS

SYSTEM is re-entrant and re-usable.

Also used in the system initialization command file to add programs to the system monitor. See your *System Operator's Guide to the System Initialization Command File* for information.

OPERATION

Enter SYSTEM at AMOS command level. SYSTEM lists all of the programs currently in system memory and tells you how many bytes of memory are used by the monitor. For example:

```
SYSTEM RETURN
The following programs are allocated in system memory:
         SYSMSG  USA
         CMDLIN  SYS
         VUE     LIT
         TRM     DVR
Total resident monitor size is 361838 bytes.
Monitor version is 2.0A(308)-3
```

Depending on your type of system, you may also see other information.

TAPDIR

FUNCTION

Displays a list of the files on a magnetic tape reel. Also allows you to create a disk file containing the tape directory.

CHARACTERISTICS

Used with FILTAP (to copy disk files to magnetic tape) and TAPFIL (to copy files from tape to disk). The tape you read with TAPDIR must have been written by FILTAP. TAPDIR is a wildcard command. The account and device portions of the specifications refer to the disk account and device the files were backed up from. See your *AMOS User's Guide* for information on wildcards.

TAPDIR only works under AMOS/32 and AMOS/L versions of the operating system.

This program is included for compatibility purposes, for those who have existing tapes created by FILTAP. MTUSAV and MTURES are the preferred backup methods for magnetic tape—see those reference sheets. **TAPDIR does not work with extended format disks.**

FORMAT

```
TAPDIR {/switch}{{listfilespec}=}{filespec{,filespec...}
```

switch is an option request and the ***filespec(s)*** specify the files on the tape whose directory listing you want to see. The optional ***listfilespec*** specifies a disk file to contain the tape directory display.

DEFAULTS

The default listfilespec is DIRECT.LST in the account and device you are logged into. The listfilespec extension default is .LST. The default filespec is *.* and the account and device you are logged into. The default magnetic tape drive device specification is MTU.

OPTIONS

/KILL or /K	Overwrites matching listfiles. Operation switch.

OPERATION

Enter TAPDIR and the files you need. For example:

```
TAPDIR ALL:[]*.* RETURN
```

TAPDIR asks you to enter the tape unit number. It then displays the directory. The first number on the line tells you the file's relative position on the tape. Next you see the device specification, the filename and extension, and the account specification of the file as it appeared on the disk it was being backed up from. The next number tells you the number of disk blocks the file takes up. TAPDIR now tells you whether the file is a linked (sequential) file (L), or contiguous (random) file (C). Finally, TAPDIR gives the date and time of the backup. To create a disk file containing the directory display, include a listfilespec. For example:

```
TAPDIR DATAFL.LST= ALL:[]*.DAT RETURN
```

creates the file DATAFL.LST in the account and device you are logged into containing a directory display for all .DAT files on the tape. If your printer is defined as a terminal, you may send the display to a printer by using an output specification of TRM:.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

TAPDIR needs this file to process wildcard symbols in your file specification. See your System Operator for help.

?Cannot INIT [device-name] - device does not exist

Check your syntax or use DEVTBL to see a list of devices on your system.

?Cannot READ [device-name] - device is not mounted

Mount the device and try again.

?Cannot read filemark - reason

A tape error was encountered.

?Device full

See about erasing unneeded files or acquiring more disk memory.

?More than one output specification

Try again, using only one output specification.

%No file-oriented device corresponding to [device-name] is mounted

TAPDIR cannot find a logical unit matching your specification. Check your syntax. This could also indicate the tape was not written by FILTAP.

%No such files

TAPDIR was unable to find any files matching your input specification. You may want to use `TAPDIR ALL:[]*.*` RETURN to display every file on the tape.

?Tape is not file structured

The tape you are trying to read was not written by the FILTAP program. Make sure you have mounted the correct reel of tape.

?Unit number must be between 0 and 7

The unit number must be within the range indicated. Re-enter a valid number.

TAPE

FUNCTION

Copies data from disk files to tape or from tape to disk.

CHARACTERISTICS

TAPE is re-entrant and re-usable. TAPE can perform customized data conversion between ASCII and EBCDIC, and it recognizes a conversion table, CONVRT.TBL in the System Library account DSK0:[1,4] which you can modify character for character. CONVRT.TBL MUST be in SYS: for TAPE to function.

If you are copying a magnetic tape created on another system, chances are the data is incompatible with the AMOS system. For example, AlphaBASIC requires all data records end with a carriage return/linefeed pair. If these are not present, AlphaBASIC may be unable to read the mag tape data you have written into the file. As another example, the screen-oriented text editor, AlphaVUE, requires each line end with a carriage return/linefeed pair, and the line be 510 or less characters.

For such reasons, TAPE optionally appends a carriage return/linefeed character pair to the end of every record as it transfers the records from tape to an AMOS disk. Beyond converting data from EBCDIC to ASCII or vice versa, and optionally appending carriage return/linefeed pairs, the task of modifying data so it is compatible with AMOS is up to you.

MTSTAT.SYS must be in system memory on older Alpha Micro systems. If you have an S-100 Bus system, or any non-VME system, see your *System Operator's Guide to the System Initialization Command File* for information about adding it to system memory.

TAPE only works with sequential disk files containing fixed-length data records. It does not support any random-access file format on the tape. Before you use TAPE, use the SET BPI command to set the recording density of your tape.

Remember to note the size of the data records you write to the tape and the number of records you write per tape block; when you read the data back to a disk file, you will need that information.

You can read one file after another on the magnetic tape by using TAPE several times in a row without rewinding the tape. You can also use the SKIP command to skip over files. Some tapes contain a one-block header file at the front of each file. You can skip over this header block by using TAPE once or by using the SKIP command. To rewind tapes, use the REWIND command.

If you make a mistake in answering TAPE questions, you may press CTRL/C to exit TAPE.

OPERATION

If you intend to use the TAPE option of converting ASCII characters to EBCDIC characters or vice versa, you can customize the conversion for your application. You must do the customizing modification BEFORE using TAPE. The modification is made to a table in the System Library account TAPE refers to. For further information about making customized conversions between ASCII and EBCDIC, see your *System Operator's Guide*.

Enter TAPE at AMOS command level:

```
TAPE RETURN
```

The screen clears and TAPE asks you if you want to copy a file from disk to tape or copy a file from tape to disk. Select the appropriate option. Then you are asked to select what type of character code conversion you want. Remember the conversion (if any) is done on the data going to the output device. Whether this device is the disk or tape unit depends on your answer to the first question.

Copying Disk Files to Tape

TAPE begins to ask a series of questions. It requests a file specification (give the AMOS specification of the file you want to copy) and a device specification (give the specification of the tape drive to which you want to copy).

Now TAPE asks if you want to do reblocking. Reblocking consists of specifying the number of file data records to place in each tape block. If you say no to this question, TAPE assumes each data record is 512 bytes long, and the blocking factor is 1 (that is, you want to write one disk block of 512 bytes into one tape block). If you tell TAPE you want to do reblocking, it asks you the size of the data records in the file (in bytes, including record delimiters) and the blocking factor (the number of data records in each tape block).

TAPE now displays a message telling you how many characters will be written in each tape block. If this number is not satisfactory (for example, if it is zero), you have made a mistake in answering the TAPE questions. Press CTRL/C to return to AMOS and try again.

Now TAPE is ready to write to the tape. It asks you to press RETURN if the tape is properly loaded. Make sure the tape has been physically loaded on the tape drive and it is at load point (the metallic film at the start of the tape is positioned at the read heads). Press RETURN when you are ready.

TAPE now asks you to confirm the drive is on-line. When the drive is ready, press RETURN.

TAPE transfers your file to the tape. When it is finished, you see a message tells you how many blocks were written and how many errors were found.

Copying Tape Files to Disk

TAPE asks for a file specification (give the AMOS specification of the file you want to create) and a device specification (give the specification of the tape drive you want to use).

You must now supply blocking information to TAPE. When writing data from a disk file to tape this information is optional—TAPE has a default record size and blocking factor it can use. However, when writing from tape to a disk file, you MUST supply blocking information. TAPE asks you the size of the data records (in bytes, including record delimiter characters) and the number of data records in each tape block. These values were established when you first wrote the data onto the tape.

TAPE now tells you how many characters it is going to read per tape block. If this number is not satisfactory (for example, if it is zero), you made a mistake in answering the earlier TAPE questions. Press CTRL/C to exit TAPE. Then try again.

If the number is okay, TAPE asks you if you want carriage return/linefeed pairs after each record. Answer with **Y** for YES or **N** for NO and press RETURN. You may wish to have TAPE append carriage return/linefeed characters at the end of each record if you will be reading the data file with an AlphaBASIC program or AlphaVUE.

TAPE now asks you how many tape blocks you want to read. When you enter this value, remember TAPE reads fewer blocks if it finds an end-of-file marker or if it reaches the end of the tape.

TAPE asks you to press RETURN when the tape is loaded and when the drive is on-line. After TAPE reads the data from the tape, it displays a message telling you how many tape blocks were read and how many errors were found.

MESSAGES

?Cannot INIT [device-name] - device does not exist

Check your syntax and use DEVTBL to see a list of devices on your system.

You are writing 0 characters in a tape block

This message indicates you made an error in entering values to the TAPE questions asking for blocking information. Press CTRL/C to exit and try again.

?Tape is not loaded or is not ready - press RETURN when it is

TAPE cannot read or write to the tape unit you specified. Check the unit's status and correct the problem, then press RETURN.

TAPFIL

FUNCTION

Writes files from magnetic tape to disk.

CHARACTERISTICS

TAPFIL is re-entrant and re-usable, and a wildcard file command. See your *AMOS User's Guide* for information on using wildcard commands. Used in combination with FILTAP (to write disk files to the tape) and TAPDIR (to see a list of files on magnetic tape).

This program is included for compatibility purposes, for those who have existing tapes created by FILTAP. MTUSAV and MTURES are the preferred backup methods for magnetic tape—see those reference sheets. **TAPFIL does not work with extended format disks.**

Only reads tapes written by FILTAP. Not for transferring data between Alpha Micro and non-Alpha Micro computers—use TAPE for that. Use a separate TAPFIL command for each magnetic tape reel.

FILTAP only works under AMOS/32 and AMOS/L versions of the operating system.

You may not copy to a disk account if it is not in the project you are copying from unless you are logged into the System Operator's account, [1,2]. You may copy files into the account you are logged into from any other account, regardless of project number.

FORMAT

```
TAPFIL{/switch}{outfilespec}={filespec{,filespec}{/switch}
```

switch is an option request, ***outfilespec*** specifies the files to be created on the disk, and the ***filespec(s)*** specify the files to be copied from the tape (including the disk device and account specifications of the files when they were backed up).

DEFAULTS

The output specification, filename and extension default to the file specifications, and the device and account you are logged into. If you're logged into [1,2], the default output account specification is [], and if the account you are copying to does not exist, TAPFIL creates it.

The file specification defaults to *.* and the account and device you are logged into. The default magnetic tape drive device specification is MTU.

OPTIONS

All switches are file switches, and may be abbreviated.

/QUERY	Confirm before copying files.
/NOQUERY	Don't confirm copy. Default.
/DELETE	Copy over existing files. Default.
/NODELETE	Don't copy over existing files.

OPERATION

Enter TAPFIL, the optional output specification, an equal sign, and any file specifications. For example, to copy all .LIT files from the tape originally backed up from account [110,2] on DSK2: over to your current account DSK3:[110,5]:

```
TAPFIL DSK3:[110,5]=DSK2:*.LIT[110,2] RETURN
```

Now TAPFIL asks you to enter the tape unit number. Use /Q to confirm files before transfer. Enter a Y for Yes or an N for No after each TAPFIL prompt. You do not need to press RETURN after Y or N. For example, suppose you are logged into DSK2:, and you are copying files from magnetic tape drive MTU0:

```
TAPFIL *.OLD[]=DSK3:*.M68[10,*]/Q RETURN
Enter tape unit number: 0 RETURN
MTU0:DSK3:B32.M68[10,4] to DSK2:B32.OLD[10,4]? Y
MTU0:DSK3:SCRTCH.M68[10,6] to DSK2:SCRTCH.OLD[10,6]? N
```

You may press CTRL/C at any time to stop the file transfer. To restore all files to the devices and accounts they were backed up from, enter:

```
TAPFIL ALL:[]=ALL:[] RETURN
```

MESSAGES

%Bypassing BADBLK.SYS[1,2]
% BADBLK.SYS exists to prevent bad blocks
% on a device from being allocated, and
% should never be directly accessed.

You can't copy the BADBLK.SYS[1,2] file.

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

TAPFIL needs this file to be able to process wildcard symbols in your file specifications. This message can mean SCNWLD.SYS does not exist or you do not have enough memory to load it into your partition.

?Cannot OPEN [device-name] - protection violation

Either log into [1,2] or the account you want to write into, and try again.

?Cannot perform special function [device-name] - device does not exist

You tried to copy to or from a device not listed in the DEVTBL command in your system INI file, does not have a driver in account [1,6] of the System Disk, or is not file-structured. Fix the condition and try again.

?Cannot READ [device-name] - device is not mounted

Mount your device and try again.

?Cannot read file mark - reason

A tape error has been encountered.

?Device full

See your System Operator about erasing unneeded files or otherwise making more room on your disk.

?Files may not be transferred to RES:

Try again, and transfer the file(s) to the disk. You can then, if you wish, add them to resident memory in your system INI file.

?Missing output specification

You left out the equal sign in the TAPFIL command line; TAPFIL couldn't tell which information was your file specification and which was your output specification. Try again.

?More than one output specification

Try again, using only one output specification.

%No file-oriented device corresponding to [devn] is mounted

Check your syntax, or mount the device.

%Not copied - Destination file already exists

If you want to copy over the existing file, try again without using /NOD.

?Tape is not file structured

The tape you are trying to read was not written by FILTAP. Make sure you have mounted the correct reel of tape.

%TAPFIL cannot restore files to extended directories

TAPFIL can only be used on traditional format logical devices. Use DEVTBL to identify such a device.

?You are not logged in under [1,2], can't create [p,pn]

Log into [1,2] and try again.

?Unit number must be between 0 and 7

The unit number you entered is invalid. Enter a number between 0 and 7.

TAPLOG

FUNCTION

Checks quality of tape by reading statistics from certain tapes used by certain SCSI-based tape drives.

CHARACTERISTICS

TAPLOG is re-entrant and re-usable. Many newer tape drives, particularly DAT drives, record statistics about tape operation in a special area of the tape, called the log page. TAPLOG uses the LOGSNS command to read and display these statistics. It works only with the SCSI dispatcher, and only with tape drives that support the LOGSNS command.

The system must be running a SCSI dispatcher in order to run TAPLOG. The LOGSNS command is an internal SCSI command that the tape drive must be able to understand. LOGSNS is ***NOT*** an AMOS command.

FORMAT

```
TAPLOG devn: {/C}
```

devn: is the name of the tape device containing the tape you want to check. The ***/C*** switch clears the log page of the tape after reading it.

OPERATION

Mount the tape you want statistics about and type the TAPLOG command. For example:

```
TAPLOG DAT0: /C RETURN
```

This displays the statistics recorded on the tape in the DAT0: device and clears the log page of the tape when it finishes.

Different tape drives record different statistics in the log page. The information you see depends on the tape drive you're using.

MESSAGES

?Device does not log tape statistics

Either your tape drive does not support the LOGSNS command, or it does not support the error log pages that TAPLOG does. You cannot us TAPLOG with this drive.

?Device error - sense key: ## [meaning] Additional sense codes ## ##

The drive returned a SCSI error message with the sense key and sense codes listed. ***meaning*** is the description of the sense key listed. For more information on SCSI error sense codes, see the tape drive manufacturer's manual.

If you do not have DSKERR set, all you see of this message is `Device error`.

?Device is not a tape drive

You entered TAPLOG followed by the device name of a disk drive instead of a tape drive.

?Device busy - info
?Device error - info
?Request sense command failed

The tape drive did not respond properly to a SCSI command. Check the drive and its connection before retrying TAPLOG. If it fails a second time, contact your System Operator and have the additional information on hand.

?SCSI dispatcher not found

TAPLOG works only with the SCSI dispatcher. No dispatcher is running on your computer, so you can't use TAPLOG.

%Usage: TAPLOG dev0:{/C} where dev0: is name of tape device ...

You've used the wrong syntax for TAPLOG, so this message reminds you how to enter the command correctly.

TDVDEF

FUNCTION

Displays the currently available terminal drivers.

CHARACTERISTICS

TDVDEF is re-entrant and re-usable.

Also used in the system initialization command file to define alternate terminal drivers to your system. See your *System Operator's Guide to the System Initialization Command File* for information.

You can switch your terminal to use a different terminal driver by using the SET TERMINAL DRIVER command (see the SET reference sheet).

OPERATION

Enter TDVDEF, and AMOS will display the currently available terminal drivers defined on your system. For example:

```
TDVDEF RETURN

Currently defined Terminal Drivers:

     ALPHA  AM60  TV171  GRAF
```

MESSAGES

?Cannot define terminal drivers after system startup

Enter only TDVDEF and press RETURN. You can't define terminal drivers at command level—only in your system INI file.

TIME

FUNCTION

Displays or sets the system time of day.

CHARACTERISTICS

TIME is re-entrant and re-usable. **You must be logged into an operator's account, [1,2], to set the time.** Allows you to use military (24-hour) format when you set the time.

Some clock/calendar chips in early AMOS systems do not allow the seconds to be set. This is a limitation of the chip, not of AMOS.

FORMAT

```
TIME {HH:MM {AM/PM}}
```

HH is hours and ***MM*** is minutes.

DEFAULTS

If the hours is set to 12, the default is PM. If set higher than 12, PM will be set even if you add AM. If hours is less than 12, the default is AM.

OPERATION

To see the time of day, enter TIME at AMOS command level. For example:

```
TIME RETURN
12:30:12 PM
```

To set the system time of day, log into any operator's (1,2) account, type TIME and the time you want set. Some examples:

```
LOG 1,2 RETURN
TIME 3:12 PM RETURN
TIME 16:00 RETURN
```

MESSAGES

?Improper time format

Check your syntax and try again.

?You must be logged in to [1,2] to reset the time

Log into [1,2] and try again.

TMODE

FUNCTION

For SCSI-2 tape drives, displays information about tape drive and cartridge format. For tape drives that support it, sets data compression mode and write format.

CHARACTERISTICS

TMODE is re-entrant and re-usable. It works only with cartridge tape drives attached to a SCSI-2 interface. For these drives, it displays the current cartridge type and recording format, and whether the drive supports data compression or tape format options. On drives which support it, you can set the compression mode and/or tape format.

FORMAT

```
TMODE devn: {option}
```

devn: is the device name of the drive you want information on or to set the write format for, and ***option*** sets the compression mode or cartridge format.

OPERATION

To display information about the tape drive and the cartridge currently in it, type TMODE and the device name. For example:

```
TMODE STR0: RETURN
        Cartridge type: DC6320 or DC6525
        Recording format: Unknown

Options for this drive:
        none
```

If you use TMODE with a drive which supports compression modes, such as an AM-648 DAT drive, this is the result:

```
TMODE DAT0: RETURN
        Recording format: DDS-DC (compression)

Options for this drive:
        DDS - Standard 2Gb format
        DDS-DC - compressed 4Gb format
```

To force the AM-648 drive to write in standard DDS (non-compressed) mode, type:

```
TMODE DAT0: DDS RETURN
```

To return to compressed mode, type:

```
TMODE DAT0: DDS-DC RETURN
```

Drives which support setting the tape format as well as the compression mode, such as the AM-650, have more options, but the operation method is the same: Type TMODE and the device name to see the current format options, then set the option by using TMODE again with the device name and the setting you want.

When setting an option, the cartridge in the drive should support the format or compression mode you want to set.

For more details about using TMODE with your tape drive, please refer to the installation instructions for your drive.

MESSAGES

%Cannot INIT Devn: - device does not exist

The device name you entered does not exist. Check your spelling and re-enter the command.

?File specification error

You must enter a device name with TMODE.

?TMODE is only supported on SCSI-2 interfaces

The tape device you've entered is not connected to a SCSI-2 interface. TMODE does not work with SCSI-1 devices.

TRMDEF

FUNCTION

Displays information about the system terminals.

CHARACTERISTICS

TRMDEF is re-entrant and re-usable.

Also used in the system initialization command file to define terminals to the system. See your *System Operator's Guide to the System Initialization Command File* for information.

OPERATION

Enter TRMDEF at AMOS command level. You then see a display about the terminals attached to your computer. For example:

```
TRMDEF RETURN
TRM1  JOB1  025574  AM355 1 ALPHA 100,100,100  19200  Edit
```

Each line is the display tells you the terminal name; the job to which it is attached; the memory address (in octal) where the terminal definition block for the terminal exists; the interface driver used by the terminal; the port number the terminal is using; the terminal driver; the terminal parameters; and the baud rate. If your terminal uses the line editor, the word "Edit" will follow the baud rate.

TRMDEF will also display any modem drivers in use.

MESSAGES

?Cannot define terminals after system startup

Terminals can only be defined in the system initialization command file at bootup time. You cannot add extra terminals by running TRMDEF subsequently. See your System Operator about adding more terminal definitions to the file.

TXTFMT

FUNCTION

Formats text file(s) to produce a printer-ready list file. The format of the list file is based on TXTFMT commands embedded in the files.

CHARACTERISTICS

TXTFMT is re-usable, but is not re-entrant. The formatted file has the same name as the first file specified on the TXTFMT command line, but with a .LST extension.

For more on using TXTFMT and on the TXTFMT commands, see your *TXTFMT User's Manual.*

FORMAT

```
TXTFMT filespec{,filespec...}
```

filespec is a file specification for a file you want to format.

DEFAULTS

The default file extension is .TXT. The default device and account specification is the account you are logged into.

OPERATION

Enter TXTFMT followed by the one or more file specifications that select the text files you want to format. For example:

```
TXTFMT HEADER,COPYRT,TITLE,PRFACE,MAIN RETURN
```

This formats HEADER.TXT, COPYRT.TXT, TITLE.TXT, PRFACE.TXT, and MAIN.TXT into the single file HEADER.LST.

To see your formatted file, you can either print it (using the PRINT or PRNT command) or display it on the monitor screen (using the TYPE command). PRNT, PRINT and TYPE use the default file extension of .LST.

MESSAGES

?Cannot open [filespec] - file not found

Check your spelling or use DIR to find the file.

?Illegal command [command]

TXTFMT did not recognize a command you had in the text file. TXTFMT inserts the illegal command into your .LST file so you can find the problem.

%Line too long - remainder of line ignored

TXTFMT found a line in your text file of more than 300 characters. It ignored everything past the 300th character.

There are other less commonly seen messages—see your *TXTFMT User's Manual*.

TYPE

FUNCTION

Displays a text file on your terminal screen.

CHARACTERISTICS

TYPE is re-entrant and re-usable. TYPE works only on sequential files containing ASCII characters.

FORMAT

```
TYPE{/switch} filespec{/switch}
```

filespec selects the file you want to see, and ***switch*** is an option request. The default file extension is .LST.

OPTIONS

/P Display one screen of text at a time. Operation switch.

/S{:n} Display at slower speed. ***n*** selects how slow—the higher the number, the slower the display. File switch.

OPERATION

Enter TYPE and the file you want to display. For example:

```
TYPE MEMO.TXT RETURN
```

You now see the file displayed on your terminal screen.

If the file display covers more than one screen page, and you haven't used the P option, you can halt the display by pressing the NO SCRL key, or by pressing CTRL/S. When you want to continue, press the NO SCRL key again (or press CTRL/Q). You can press CTRL/C at any time to stop the display. If you use /P, pressing RETURN, the down arrow key, or the space bar brings up the next screen page.

MESSAGES

?Cannot INIT [filespec] - device does not exist

Check your syntax, or use DEVTBL for a list of devices.

?Cannot open [filespec] - disk not mounted

MOUNT the disk, and try again.

?Cannot open [filespec] - file not found

Check your syntax, or use DIR to find the file.

?Cannot open [filespec] - file type mismatch

You tried to TYPE a random file. You have to use another method (such as a BASIC program) to display the contents of that file.

?Cannot open [filespec] - illegal user code

You specified an account that does not exist. Check your syntax, or use PPN to see a list of accounts on the device you are using.

?Command syntax error

Check your syntax and try again.

U

FUNCTION

Allows you to save AMOS command lines temporarily and to run them later by typing a single character.

CHARACTERISTICS

U is re-entrant and re-usable. Because the AMOS command line is saved in user memory, a system reset erases the command line.

You can save more than one command line at a time by making a copy of the U.LIT program under different names. You can then use those programs to save command lines too. The command line is stored in your user memory partition with a .SCS extension.

FORMAT

```
U {AMOS Command-line}
```

OPERATION

To save an AMOS command line, type U and the command line. For example:

```
U PRINT/COPIES:2 *.LST,*.RST/WAIT/NOBANNER RETURN
```

U remembers the command line, but does not send it to the monitor. To change the saved command line, use U again and enter a new command line.

To run a saved command line, enter **U** RETURN at AMOS command level.

MESSAGES

?No previous command is saved

There is no AMOS command line saved. Save the line you want to use and try again.

UTC

FUNCTION

Retrieves the current time and date from the U.S. Naval Observatory in Washington DC, optionally setting the system date and time to the retrieved value. The Observatory maintains a cesium (atomic) clock which provides a highly accurate source of timing information.

CHARACTERISTICS

UTC is re-entrant and re-usable. Requires the use of a Hayes compatible modem capable of 1200 baud communication.

Places a short (less than one minute) long-distance toll phone call to (202) 653-0351 in Washington DC. Resets the system time and date if run while logged in to OPR:. Only understands time zones from Atlantic to Nome Standard Times.

Remember that most systems can only set the system clock to the nearest minute, so the seconds value retrieved from the Observatory is effectively lost.

While the Observatory's clock is highly accurate, remember the time information is being transmitted over telephone circuits that may introduce considerable delay, up to .5 seconds for satellite circuit routings.

This program can be placed into a Task Manager control file which can be set to run every few days to keep the system clock up to date. When doing this, however, remember to change back and forth between standard and daylight savings time in the UTC command line, on the appropriate day.

FORMAT

```
UTC {/switch} modem-port time-zone {dial-prefix}
```

See the Operation section for a description of the format.

OPTIONS

/P	Preserves the baud rate the computer is using to communicate with the modem port. Without this switch, the computer talks to the modem port at 1200 baud. This is how fast the computer talks to the modem, not the baud rate the modem uses on the phone line.

OPERATION

Enter UTC and the name of the terminal port to which the Hayes compatible modem is connected, followed by your local time zone, and optionally, any dialing prefix required to access an outside phone line. For example:

```
UTC MODEM1 PST 9W RETURN
```

UTC dials the observatory, retrieves the current date and time, converts it from UTC (Universal Time Coordinated) format to your local time zone, and displays that time and date. If you are logged in to OPR:, the system date and time is also reset.

The ***modem-port*** argument must be the name of a terminal port (defined by a TRMDEF statement in your system initialization command file) to which a Hayes compatible modem is connected.

The ***time-zone*** argument lets you specify your local time zone. This is necessary so UTC can convert the time as received from the Observatory to your local time. The time zone can be specified using one of the three-character time zone names shown below, or, for those users outside of North America, can be specified as the number of hours difference between your local time zone and Universal Time Coordinated (UTC) (also known as Greenwich Mean Time (GMT) or Zulu Time (Z)). The difference is negative for time zones west of Greenwich and positive for those located east. For example, Pacific Standard Time can be given as either PST or -8.

The symbolic time zones the UTC program understands are:

AST	Atlantic Standard Time
ADT	Atlantic Daylight Time
EST	Eastern Standard Time
EDT	Eastern Daylight Time
CST	Central Standard Time
CDT	Central Daylight Time
MST	Mountain Standard Time
MDT	Mountain Daylight Time
PST	Pacific Standard Time
PDT	Pacific Daylight Time
YST	Yukon Standard Time
YDT	Yukon Daylight Time
HST	Hawaii/Alaska Standard Time
HDT	Hawaii/Alaska Daylight Time
NST	Nome Standard Time
NDT	Nome Daylight Time

The optional ***dial-prefix*** argument lets you specify any special dialing information that must precede the main telephone number, such as digits to access an outside phone line, to select a long distance carrier, or to specify necessary country codes. In addition to the digits 1-9, you may also use the * and # characters. A comma introduces a pause into the dialing, and a W causes the dialing to wait for a second dialtone before proceeding. Common values for this argument are 9 and 9W.

MESSAGES

Busy

The Observatory clock is busy. Try again later.

No answer

The Observatory clock did not answer the phone. Make sure you have specified any necessary outside line access prefixes, or try again later.

No carrier

The Observatory clock answered the phone, but did not handshake with your modem. Make sure you have specified any necessary outside line access prefixes or try again later.

No dialtone

The modem could not get a dialtone on your phone line. Make sure you have specified any necessary outside line access prefixes.

VCRDIR

FUNCTION

Displays a list of the files on a video tape cassette. Can also create a disk file containing the video tape directory.

CHARACTERISTICS

VCRDIR is re-entrant and re-usable. The video tape read by VCRDIR must previously have been written by VCRSAV. Used in combination with VCRSAV (to write files to video cassette tape) and VCRRES (to copy files from video cassette to disk).

This program is provided for compatibility for tapes created by VCRSAV. If your VCR tape was created using the BACKUP program, use BAKDIR to see a directory.

If your system contains both traditional format and extended disks, you must be logged onto the same type of disk when you use VCRDIR that you were when you created the backup using VCRSAV. While VCRSAV does work with extended disks in some situations, we strongly suggest you use BACKUP to back up extended disks.

VCRDIR can be run with or without locking the others users out of the system—even if the tape was created without using /T. You probably don't want to lock other users out unless having them on the system interferes with VCRDIR.

If you are going to lock other users out, you should check with them before proceeding with VCRDIR—if another user is reading from or writing to the disk that you are on when you use VCRDIR, you **both** could be locked up.

VCRDIR accepts full wildcard specifications, which select the files to be listed in the directory. The account and device portions of the specification refer to the disk account and device from which the files were originally backed up. See your *AMOS User's Guide* for information on wildcard file specifications.

FORMAT

```
VCRDIR {/switch}{{listfilespec}=}{filespec}{,filespec(s)}
```

switch is an option request. The ***listfilespec*** specifies a disk file to contain the tape directory display. The ***filespecs*** are the files on the tape whose directory listing you want to see. If you want a list of all the files on the tape, enter:

```
VCRDIR ALL:[] RETURN
```

DEFAULTS

The default listfilespec is DIRECT.LST in the account and device you are logged into. The default filespec is *.* and the account and device you are logged into.

OPTIONS

All switches are operation switches, and can be abbreviated.

/KILL	Deletes existing listfile before creating new listfile.
/TRANSFER	Don't lock other users out of system.

OPERATION

Enter VCRDIR followed by an optional listfilespec and equal sign, and your file specifications. For example, to send a directory display of all the .DAT and .BAS files on a video cassette to your terminal, enter:

```
VCRDIR ALL:[]*.DAT,*.BAS RETURN
```

You then see a message telling you other users will be locked out, or you are using /T.

If you continue, VCRDIR runs your VCR and produces the directory. If you do not have a computer-controlled VideoTRAX VTR, VCRDIR gives you instructions for running your VCR.

The first number on the directory line tells you the file's relative position on the tape. Next you see the device specification, the filename and extension, and the account specification of the file as it appeared on the disk it was backed up from. The next number tells you the number of disk blocks the file takes up.

The letter following the block count tells you whether the file is a sequential, or linked file ("L"), or a random, or contiguous file ("C"). Next, VCRDIR gives the date and time the file was originally backed up. And finally, VCRDIR shows you the hash total of the file if one was calculated when the file was backed up by VCRSAV. At the end of the directory display, VCRDIR tells you how many files were listed in the display.

If the cassette contains a warm boot monitor, the display notes the backup media is BOOTable, meaning a warm boot monitor is the first file on the cassette even though it may not appear on the directory listing you just requested.

If your printer has been defined on your system as a terminal, you may send the display directly to the printer by using an output specification of `TRM:[printer-name].`

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

VCRDIR needs this file to be able to process wildcard symbols. This message can indicate SCNWLD.SYS does not exist, or you don't have enough memory to load the file into your partition.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of device for your system.

?Cannot READ [device-name] - device error

VCRDIR found something wrong with the tape. Be sure the cassette is loaded properly, and the internal mechanism of the VCR unit is clean. Try again. If the problem persists, see your System Operator.

?Cannot READ [device-name] - device is not mounted

MOUNT the device, and try again.

?More than one output specification

Try again, using only one output specification.

%No such files

VCRDIR could not find any files matching your input specification. Try VCRDIR ALL:[ ]*.* to see a list of all files on the tape.

?Tape is not file structured

The header of the VCR tape cannot be found, or is corrupted, or the tape was not written using VCRSAV. The data on the tape cannot be read.

VCRRES

FUNCTION

Writes files from video cassette tape to disk. Lets you restore file-oriented disk backup from video cassette to disk.

CHARACTERISTICS

VCRRES is re-entrant and re-usable. Used in combination with VCRSAV (to write disk files to video cassette tape) and VCRDIR (to display a list of files on a video cassette). Only reads tapes created by VCRSAV. Not for transferring data between Alpha Micro and non-Alpha Micro computers.

This program is provided for compatibility purposes. If your VCR tape was created by BACKUP, use RESTOR to restore files.

If your system contains both traditional format and extended disks, you must be logged onto the same type of disk when you use VCRRES that you were when you created the backup using VCRSAV.

You may not copy to a disk account other than the account you are currently logged into unless you are logged into an operator's account, [1,2]. If you are in [1,2], and you specify an account that does not exist, VCRRES creates that account. You may copy files into the account you are logged into from any other account, regardless of project number or device specification.

VCRRES locks out the other users on your system unless you specify the /T option. Check with other users on your system before proceeding with VCRRES. If another user is reading from or writing to the disk when you use VCRRES, you **both** could be locked up. However, VCRRES can only be run under control of the Task Manager or a spawned task if the /T switch is specified. Such operation is not recommended by Alpha Microsystems.

VCRRES is a wildcard command. See your *AMOS User's Guide* for information on using wildcard commands.

If the cassette you are restoring files from contains a warm boot monitor as well as data files, VCRRES skips over the warm boot monitor, ignoring it, and goes on with the normal file restore process.

It is a good idea to run DSKANA after you have finished running VCRRES, to be sure no errors were introduced into the bitmap—especially if you press CTRL/C to interrupt the restore process, since the bitmap may be disorganized.

VCRRES creates a temporary directory file named VCRTOC.IPF in the current disk account. This file is erased and re-created each time VCRRES is used in the account. VCRRES also creates a temporary file named FRGTBL.IPF. Don't use either VCRTOC.IPF or FRGTBL.IPF as filenames.

FORMAT

```
VCRRES{/switch}{outfilespec}={filespec{,filespec(s)}{/switch})
```

switch is an option, ***outfilespec*** specifies the files to be created on the disk, and ***filespec*** is a file to be transferred from the cassette (including the disk device and account specifications of the files when they were backed up).

DEFAULTS

The file specifications default to the device and account you are logged into. The output specification defaults to the file specification in the case of the filename and extension, and to the account and device you are currently logged into. Therefore, if you don't specify a device, everything on the tape is written to the device you are logged into.

For example, if you are logged into DSK0:, everything is written onto DSK0:, even if the files were written to the tape from other disks. Be careful to specify an output specification if the files on the tape came from more than one disk. Unless, of course, you do want to transfer them all onto one disk.

If you are logged into an operator's account, [1,2], the default output specification is [ ] (all accounts on that disk). In the System Operator's account, it is all accounts on all disks—this means files are restored to their original account numbers (from which they were written to the tape).

If you use ALL:[ ] as the input specification, VCRRES restores all the files on the tape (to where depends on the output specification).

OPTIONS

All switches can be abbreviated to any unique letter combination.

/DELETE	Copy over existing file (default, file switch).
/NODELETE	Don't copy over existing file (file switch).
/HASH	Restore only files with different hash totals on the disk (file switch). Files must have been saved with VCRSAV/H
/NOHASH	Don't compare hash totals. Default, file switch.
/QUERY	Confirm before selecting files (file switch).

/NOQUERY Don't confirm copy (default, file switch).

/SEARCH Search for a file using FAST FORWARD. Operation switch. Manual VCRs only.

/TRANSFER Copy files without locking other users out of the system. Operation switch.

Because with /T you share CPU time with other users, the restore could miss files if your system is being heavily used. Since VCRRES erases files of the same name on the disk before trying to restore from the tape, this means you could lose files. What constitutes "heavy use" depends on the system and the number of copies saved—if you have any doubt about the restore, don't use /T.

OPERATION

Enter VCRRES and the files you need. For example, to copy all .BAS files originally backed up from account [110,2] on DSK2: over to your current account, enter:

```
VCRRES =DSK2:*.BAS[110,2] RETURN
```

You then see a warning other users will be suspended while VCRRES is running (or, if you used /T, you may not be able to restore files if your system is in heavy use). If you proceed, VCRRES either runs the VCR to complete the restore (if you have a VideoTRAX automatic VTR), or instructs you in running your VCR.

VCRRES displays a list of the files on the cassette that fit the specifications you entered earlier. If you used /Q, VCRRES waits after the appropriate statement for you to respond Y for yes or N for no. You don't have to press RETURN. For example:

```
VCR0:DSK3:B32.BAS[10,4] to DSK2:B32.OLD[10,4] ? Y
VCR0:DSK3:SCRTCH.BAS[10,6] to DSK2:SCRTCH.OLD[10,6] ? N
```

You may use CTRL/C at any time to stop the file transfer. But remember: if you are restoring files with the same specification as other files already on the disk, any of those files that were already selected will be erased.

Once the restore is finished, rewind and remove the cassette, and return it to its storage location.

If a disk error is encountered during the restore, all files prior to the error are restored properly. You will see an error message, the restore stops, and you are returned to AMOS. Run DSKANA on your disk to be sure no problems occur.

When you use /S, VCRRES reads the file's position in the tape table of contents in the normal manner, and then guides you to locating the file on the tape. Once you get close to the file, press PLAY on the VCR and the restore process proceeds as usual.

MESSAGES

?Backup media is not file structured.

The tape you are trying to read was not written by VCRSAV. Make sure you have mounted the correct tape cassette.

?Backup media not compatible with current software.

The tape was saved by a version of VCRSAV which is not compatible with the current version of VCRRES. Check with your System Operator to see what can be done.

?Cannot allocate record on [filespec] - Device full

This indicates a disk error during the restore. Run DSKANA on your disk and try the restore again.

?Cannot close [filespec] - Device full

This indicates a disk error during the restore. Run DSKANA on your disk and try the restore again.

?Cannot restore extended directory format files to an old format disk
?Cannot restore old format files to an extended directory format disk

You must restore files to the same format (traditional or extended) disk they were backed up from. When restoring, you must also be logged on to the same type of device you were logged on to when creating the backup.

%Cannot restore tape when logged device format
%does not match that of the device restoring to

You cannot restore files when you are logged into a device whose file system differs from the device you are restoring to (one uses extended files, the other uses traditional). Log into a device with the same file system as the target device, then try again.

%Cannot restore with SET VERIFY on.
%Enter RETURN to continue without VERIFY or CTRLC to abort:

If the number of copies you specified with the /COPIES command is less than four (or if you specified none, as default is 0), and the VERIFY option is set ON, the system cannot restore. If you press RETURN, NOVERIFY is set and the restore continues.

?Disk transfer error.

An error occurred while the data was being transferred to or from the disk. Run DSKANA and correct any problems, then try again.

?End of tape detected

The tape you are restoring was interrupted for some reason, and VCRRES has come to the end of tape marker. All the restorable files from this tape have been restored.

?File too fragmented for recording current filespace

The software is unable to keep a record of all the disk space used by the file currently being created because the file contains more than 511 fragments. See your System Operator about compressing disk space before trying again.

?Files may not be transferred to RES:

You may only add programs to system memory by using the SYSTEM command within your system initialization command file.

?Fragments Table out of sequence

An error occurred during the search of the Fragments Table. Rerun VCRRES. If it still does not work, see your System Operator.

?FRGTBL blocks not found

The end of the fragments table was reached before all of the files have been processed. Rerun VCRRES. If you see this again, see your System Operator.

?Job aborted

You pressed CTRL/C to stop the restore. No files are restored, and no damage is done to any bitmaps.

?Memory buffer unavailable.

No memory was available for the I/O buffers during a critical process, so VCRRES aborted. See if you can increase the memory allocated to your memory partition, and try again.

?Missing output specification

You left off the equal sign in the VCRRES command line; VCRRES couldn't tell which information was your file specification and which was your output specification. Try again.

%Not selected - Source file does not have a calculated HASH total

You specified /H but the cassette doesn't have a HASH total to compare. /H was not used when the tape was created. Run VCRRES without /H.

?Table of Contents out of sequence

An error occurred when VCRRES was searching through the tape's table of contents. Try again, and see your System Operator if it occurs again.

%Tape has passed specified location.
Press REWIND to back up and try again.

In a SEARCH operation, you went past the location of the file you specified. Rewind the tape and continue searching.

?Unable to load Disk Driver

Usually, this means you don't have enough memory available in your partition. Increase your memory and try again.

?Unable to rehash bitmap - run DSKANA immediately

Due to I/O errors, the software is unable to read in the bitmap and write out a new hash for it. To correct any invalid bitmap condition, run DSKANA right away.

?VCR blocks not in sync with VCRTOC.IPF file

The number of blocks in a file on the tape is not equal to the number of blocks the table of contents says are on the tape. This tape cannot be restored. To prevent this occurrence, run DSKANA and correct all file errors before using VCRSAV to create the tape.

%WARNING -- Extra copies count on backup media is below
the minimum level for usage of the TRANSFER switch.

You don't have twenty copies of the files on your tape to use /T. If you continue, you may lose files. You may want to restore without /T.

?You are not logged in under [1,2], can't create [p,pn] ?Job aborted

You can't copy to a nonexistent account unless you are logged into an operator's account, [1,2]. If you copy to a nonexistent account while logged into [1,2], VCRRES creates the account. The job aborts. Any files selected prior to this error have been erased from the destination accounts.

VCRSAV

FUNCTION

Writes copies of disk files to video tape cassettes.

CHARACTERISTICS

VCRSAV is re-entrant and re-usable. Included on the tape are the device and account specifications of the files, and the date and time of the backup. Used in combination with VCRRES (to transfer files from video tape cassettes to disk) and VCRDIR (to list a directory of files on a cassette).

The VCR software is included for compatibility with older software. While VCRSAV may work on extended disks of less than 32Mb, we **strongly** recommend you use BACKUP to save files from extended disks. VCRSAV will not work on extended directories over 32MB in size.

VCRSAV is a wildcard file command. See your *AMOS User's Guide* for information on wildcard specifications.

VCRSAV locks out other users on your system unless you specify the /T option. You should check with other users on your system before proceeding with VCRSAV. If another user is reading from or writing to the disk when you use VCRSAV, you **both** could be locked up. VCRSAV cannot be run from a job under the control of the Task Manager or from a spawned task if the /T switch is used.

You may back up files from any disk account onto tape whether or not the account is within the project you are logged into. Although VCRSAV writes the disk specification of the file to the tape cassette along with the file, it does not transfer any password associated with that disk account.

Before using VCRSAV, use the DSKANA program to check the device for errors. If there is a problem on the disk you copy from, you may not be able to restore from the tape later.

VCRSAV is for file backup only; not for transfer of data between Alpha Micro and non-Alpha Micro computer systems. Because VCRSAV writes the date and time of backup to the tape, you should remember to use the DATE and TIME programs to make sure the system date and time are correct before you use VCRSAV.

VCRSAV creates a temporary directory file named VCRTOC.IPF in the disk and account you are currently logged into. This file is erased and recreated each time VCRSAV is used within the account. If you specify VCRTOC.IPF in a VCRSAV command line, it bypasses it.

FORMAT

```
VCRSAV {filespec{/switch}{,filespec(s)}{/switch}}
```

the ***filespec(s)*** specify the files you want to back up onto the video cassette, and ***switch*** is an option request.

DEFAULTS

The default file specification is *.* and the account and device you are logged into. Default switches are /NOQUERY and /NOHASH. If you do not use /COPIES, VCRSAV makes five copies of each data block.

OPTIONS

All switches can be abbreviated to any unique letter combination.

/BOOT	Create a warm boot cassette (operation switch).
/COPIES:n	Copy ***n*** extra copies of each data block. Default is 0, operation switch. If you use /C with /T, n must be 20 or more.
/HASH	Calculate a hash total (file switch).
/NOHASH	Don't calculate hash (default, file switch).
/QUERY	Confirm before selecting files (file switch).
/NOQUERY	Don't confirm copy (default, file switch).
/SUPPRESS	Suppresses the listing of the files selected.
/TRANSFER	Copy without locking users out. Operation switch. Saves 20 copies, unless /C used.
/WAIT:nn:nn {AM/PM}	Gives time for backup to begin, standard or military format. Locks up terminal until specified time.

Using /TRANSFER means you share CPU time with other users while backing up files. If your system is heavily used while you are creating a backup tape, this could affect your ability to restore the files from the tape later. What constitutes heavy use depends on the particular system.

OPERATION

Enter VCRSAV and the files you want to save. For example:

```
VCRSAV MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

or, using /WAIT:

```
VCRSAV/W:2:08 AM MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

You can save space on a cassette by selecting all the sequential files or all the random files you want to save at once.

VCRSAV begins by asking for information it will place in the cassette label: Warm boot file name (if you are creating one); Volume name (maximum of 40 characters); Volume ID (10 characters); Installation (30 characters); System (30 characters); and Creator (30 characters).

You then see a message that all other users will be suspended while VCRSAV is running. (If you are using /T, you get a prompt reminding you it could affect your ability to restore files later.) If you continue, VCRSAV then tells you what files it is selecting for transfer, and begins the copy process. If you do not have a computer controlled Videotrax VCR, VCRSAV gives you instructions on operating your VCR.

You may press CTRL/C at any point to halt the transfers. If you do, use DSKANA to make sure your bitmap was not affected. When CTRL/C is entered, VCRSAV writes an end-of-tape marker to the tape and stops with a message. The files already on the tape can be restored, though the table of contents lists all files originally selected. A similar thing occurs if a disk error or a file block-count discrepancy happens during the restore—a message appears, and files to that point can be restored.

When VCRSAV is finished, you should use the CRT610 command with the /CHECK option to check the cassette. See the CRT610 reference sheet for more information.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

VCRSAV needs this file to be able to process wildcard symbols in your file specifications. This can mean SCNWLD.SYS does not exist or you do not have enough memory to load the file into your partition.

%Cannot save. File beyond 32mb boundary. Use BACKUP command.

One of the files you've specified is past the 32Mb boundary of an extended disk. You must use BACKUP to save these files.

?Discrepancy in file block count for [filename]
?Process suspended while saving [filename]
The transfer is now complete
?Job aborted

This message is given if the actual number of blocks in a file does not equal the count in the table of contents. VCRSAV aborts the job and marks the tape with an end-of-tape marker at the point before the bad file. All files prior to that point can be restored. This indicates your disk has an error. Run DSKANA to correct the file error, then re-run VCRSAV again.

%Field size exceeded. Re-enter.

While entering the label information, you tried to put more data into a field than it could hold. Check the maximum field length and try again.

?File read error detected while saving [filename]
?Process suspended while saving [filename]
The transfer is now complete
?Job aborted

This message appears if a disk error occurred. VCRSAV aborts the job and marks the tape with an end-of-tape marker at the point before the disk error. All files prior to that point can be restored. This indicates your disk has an error. Run DSKANA to correct the file error, then re-run VCRSAV again.

?Invalid argument for WAIT.

Check your syntax. You may have to put the /WAIT switch at the end of the command line so it doesn't interpret other parts of the command line as a time.

?nn files not transferred. Beyond 32mb boundary. Use BACKUP command.

If you attempted to save files past the 32Mb boundary on an extended disk, this message tells you how many files were not transferred. Use BACKUP to save these files.

?Process suspended while saving [filename]
The transfer is now complete
?Job aborted

This message appears if you press CTRL/C during the save. VCRSAV aborts the job and marks the tape with an end-of-tape marker. All files prior to that point can be restored.

%Zero blocks in this file. Not selected.

VCRSAV found a directory entry for a file with a size of zero blocks. It will not copy a zero block file. It skips the file and continues.

VDKUTL

FUNCTION

VDKUTL allows general system users to see a status display of the virtual disk cache system. VDKUTL also allows the System Operator (when logged into OPR: or SYS:) to implement changes to the list of wildcard specifications for the files to be used on the virtual disk system. These changes must have been previously made in the VDK.INI file.

CHARACTERISTICS

VDKUTL is re-entrant and re-usable. When you use VDKUTL from OPR: or SYS:, VDKUTL enters a privileged mode and allows you to execute a variety of functions. When you use VDKUTL from any other account, it displays the current VDK statistics.

The virtual disk must be set up as either a traditional or extended format disk, and can then only transfer files from the same type of disk. If you have a system with both traditional and extended format disks on it, you have to choose which type of disk you wish to use with the virtual disk.

VDK transfers a file into memory only if it meets these requirements: the file must use a default specification (neither a device nor an account may be included with the file name); and the default specification must match a specification in the VDK.INI file. Keep this in mind when looking at the VDKUTL display. See the *System Operator's Guide* for more information about the virtual disk cache system.

OPERATION

Enter VDKUTL:

```
VDKUTL RETURN
```

The program displays data on how efficiently the virtual disk system is working. If you are in OPR: or SYS:, you see an asterisk prompt, and can then enter the commands below.

COMMAND SUMMARY

E = Exit VDKUTL

Returns you to AMOS command level.

H = (HELP) - List VDKUTL commands

I = Initialize

Make effective any changes that have been made to VDK.INI since the computer was last rebooted.

S = Statistics Display

The display you would normally see from any account.

MESSAGES

?VDK does not exist

The VDK system was not installed when your system was booted. See your System Operator to make the appropriate changes to the system command initialization file to load the VDK system on bootup.

VER

FUNCTION

Displays the name and version number of your system.

CHARACTERISTICS

VER is re-entrant and re-usable.

VER is also used in the system initialization command line to unlock keyboards after bootup. See your *System Operator's Guide to the System Initialization Command File* for more information.

OPERATION

Enter VER at AMOS level. For example:

```
VER RETURN

          -- AMOS/L Version 2.0(304)-2 up and running --
```

VERIFY

FUNCTION

Verifies the file(s) transferred in a system disk copy were correctly copied.

CHARACTERISTICS

VERIFY is re-entrant and re-usable.

When you receive software from Alpha Micro, the media containing that software includes a file with a name similar to the product and a .DIR extension (for example, for AMOS releases the file is called AMOS.DIR). This file contains the names, version numbers, and hash totals for all the files included on that release. After you have loaded the software unto your system, you can run VERIFY, which compares the software now on your system with the directory file to make sure that the software copied correctly to your system.

The directory programs are created using the DIR command with the /D, /V, and /H switches.

FORMAT

```
VERIFY {/switch} {filespec}
```

filespec is the file specification for the Master Directory Listing and ***switch*** is an option request.

DEFAULTS

VERIFY assumes the device and account you are currently logged into. The default filespec is DSK0:AMOS.DIR.[1,4].

OPTIONS

/FILE or /F Puts results in a file named VERIFY.LST in the account you are in.

/D:devn: Override device specification in the .DIR file with the device name entered.

OPERATION

Enter VERIFY (add a filespec if other than AMOS.DIR, or if the file is in another account). For example:

```
VERIFY NEWREL.DIR RETURN
```

You see a display of the files listed in NEWREL.DIR, and a status message for each. When VERIFY has finished, it displays a summary of the errors found.

If the files you want to verify are on a logical device other than the one specified in the .DIR file, use the /D switch. For example:

```
VERIFY /D:DSK2 NEWREL.DIR RETURN
```

The files listed in NEWREL.DIR are looked for and verified on DSK2:, regardless of the device specified in NEWREL.DIR.

MESSAGES

?[filespec] not found

The indicated file was listed in the Master Directory Listing, but was not found on your system. It might have been erased, or renamed, or might not have been copied at all. Try copying it again from the backup media.

?Hash mismatch

The hash total of the file on your system did not match the hash total for that file as listed in the Master Directory Listing. This could indicate a copying error. If the file does not have a version number, this could also indicate your current file is a different version than the one in the MDL. Try copying the file again from the backup media.

?Invalid MDL format

The Master Directory Listing was not created with the /H, /V, and /D switches. If your release AMOS.DIR file caused this error message, contact Alpha Micro. If you are trying to use another file as the MDL, re-run DIR with these three switches only.

Verified

The file has verified as being the same as it was on the transfer medium.

?Version mismatch is - x.x(xxx) MDL = x.x(xxx)

The version of the file on your system did not match the version listed in the Master Directory Listing. This could mean a different version of the file was copied over the original file, or a copying error occurred. Check your source file, and determine which version you wish to have.

VUE

FUNCTION

Creates and edits text files.

CHARACTERISTICS

AlphaVUE is re-entrant and re-usable. AlphaVUE is a screen-oriented text editor. You see the text you are editing displayed on the screen, and move the screen cursor to the location in your file you want to view or edit.

In Command mode, AlphaVUE allows you to search for specific strings of text, perform local and global replacements, move and delete blocks of text, and change various editing parameters.

AlphaVUE copies into memory the file you want to edit and makes a backup file by renaming the disk file to a .BAK extension. When you exit AlphaVUE, the new, edited version of the file goes out to disk under the original name and extension of the file. You may edit a file too big to fit into your memory partition.

An AlphaVUE initialization file, INI.VUE, allows you to set your own default editing parameters. See your *AlphaVUE Text Editor User's Guide* for more detail on using AlphaVUE and setting up the INI.VUE file.

To exit AlphaVUE, enter Command mode (if you see lines of asterisks or if you see your text, you are in Screen mode. Pressing ESC brings you to Command mode). Now enter an F to exit and update your file, or a Q if you want to exit without updating.

FORMAT

```
VUE filespec {/switch}
```

filespec selects the file you want to edit, and ***switch*** is an option request.

DEFAULTS

The defaults AlphaVUE uses (for example, the default file extension), are defined in the AlphaVUE initialization file, INI.VUE.

OPTIONS

All the switches may be abbreviated to any unique characters.

/BATCH Suppresses most screen display output. Especially for use with Task Manager to reduce unnecessary screen output to the .LOG files.

/NOYANK Opens a file without putting any text into memory. Useful if you have a file larger than your memory, and you want to YANK data into the front of it.

/R Opens a file in another account for Read-only access. Allows you to see a file in a "protected" account. You can only exit by using Q—any changes you make to the file will not be retained.

/SUBROUTINE Executes VUE as if it were being called as a subroutine from another program. Suppresses most interactive input and output.

/TRACE Displays each line of the INI.VUE file as it processes.

OPERATION

Enter VUE followed by the specification of the file you want to edit. For example:

```
VUE LETTER.TXT RETURN
```

If the file you specify does not yet exist, you are asked if you want to create it. Enter a Y for Yes or an N for No. If you enter N, AlphaVUE returns you to AMOS command level.

When you enter a file, you will see either text, or a screen full of lines of asterisks (if the file is empty or new). Now you can enter or edit your text. If the WRAP feature is set to OFF in your INI.VUE file, you will have to press RETURN at the end of each line to begin a new line. If the WRAP feature is ON, AlphaVUE will begin a new line for you when you reach the end of a line.

If you are editing an existing file, AlphaVUE loads a copy of that file into memory and takes you directly to the mode (Screen mode or Command mode) indicated by the START command in the INI.VUE file.

If you are in Screen mode, you can use the various cursor movement and screen-to-screen movement commands to move the cursor to the point in your text where you want to make changes. Then use the appropriate screen editing commands to effect those changes.

To transfer from Screen mode to Command mode, or from Command mode to Screen mode, press ESC or press CTRL/[.

In Command mode, you see several lines of information on the screen. The cursor is waiting after the AlphaVUE prompt symbol, ">".

If HELP is ON in the INI.VUE file, and if the file MENU.HLV exists either in account DSK0:[7,1] or in the account you are currently logged into, following the display shown above you will see a summary of the AlphaVUE editing commands. You may now use the various Command mode commands.

MESSAGES

The AlphaVUE error messages are explained in your *AlphaVUE Text Editor User's Guide*.

WAIT

FUNCTION

Allows you to delay the execution of any programs by your job until another job completes a task.

CHARACTERISTICS

WAIT is re-entrant and re-usable.

Sometimes a task you want to do must be done AFTER another task is finished. If another job is performing the task you have to wait for, you can use WAIT to let you know when that other job is finished with what it is doing.

A job's task is said to be completed when that job enters one of the following states: terminal input, sleep, external wait, or message waiting status.

WAIT is often used in the System Initialization Command File when your jobs are being set up. See your *System Operator's Guide to the System Initialization Command File* for more information.

FORMAT:

```
WAIT jobname
```

OPERATION

Enter WAIT and the name of the job for whom you want to wait. For example:

```
WAIT JOB3 RETURN
```

When the specified job finishes its current task, you see the AMOS prompt. You can now proceed with what you wanted to do.

MESSAGES

?Non-existent Job

Check your syntax, or use the SYSTAT command to see what jobs are active on your system, and try again.

WINFLP

FUNCTION

Writes copies of files from Winchester disk to a floppy disk.

CHARACTERISTICS

WINFLP is re-entrant and re-usable. Includes the device and account specifications of the files, and the date and time of backup. Used with FLPWIN (to copy files from a floppy to a Winchester disk) and FLPDIR (to display a list of files on a floppy disk). Allows you to perform one backup on multiple floppy disks.

This program is provided for compatibility purposes. You normally should use BACKUP. **WINFLP doesn't work with extended format disks.**

WINFLP is a wildcard file command. See your *AMOS User's Guide* for information on wildcards. Not for transferring data between Alpha Micro and non-Alpha Micro computers. You may back up files from any disk account onto the floppy disk whether or not the account is within the project you are logged into. WINFLP does not transfer any account password.

FORMAT

```
WINFLP filespec{/switch}{,filespec(s){/switch}
```

filespec is a file you want to copy to a floppy disk, and ***switch*** is an option request. The default file specification is *.* and the account and device you are logged into. The default floppy drive device specification is DDA0:.

OPTIONS

All switches are file switches, and may be abbreviated. Placing NO before a switch turns it off.

/APPEND Append files at end of existing files. Default.

/QUERY Confirm before copying files. File switch.

OPERATION

Enter WINFLP and the files you need. For example:

```
WINFLP MEMO.TXT,SCHDLE.TXT[310,2] RETURN
```

WINFLP asks you to enter the backup device—enter the device code and unit number of the floppy disk drive. When you use /Q, WINFLP asks you to confirm the files before the transfer. Enter **Y** for yes, or **N** for no. You do not need to press RETURN. For example:

```
WINFLP/Q,*.BAS, RETURN
Enter backup device: DDA0: RETURN
LSTSQR.BAS to DDA0:LSTSQR.BAS? Y
NEW.BAS to DDA0:NEW.BAS? N
```

You may press CTRL/C at any time to prevent further transfers.

MESSAGES

?Cannot find DSK0:SCNWLD.SYS[1,4] or MEM:SCNWLD.SYS

WINFLP needs this file to process wildcards in file specifications. Use DIR to find the file, or get help from your System Operator.

?Cannot INIT [device-name] - device does not exist

Check your syntax, or use DEVTBL to see a list of valid devices.

?Cannot READ [device-name] - device is not mounted

Mount the device and try again.

%Device is full. Please insert another disk, then type RETURN to
% continue, or type Control-C to abort copy

Follow the instructions to continue or abort.

%Did not copy [filespec]

Informs you the copy was aborted.

?DSK is not a valid backup device

Try again, using a floppy device name.

%No file-oriented device corresponding to [device-name] is mounted

You specified a device, but left off the unit number. Try again.

?No room to perform append; device full.

Try again with a floppy disk with room left on it.

WRDCNT

FUNCTION

Counts and displays the number of words in a file. Can optionally adjust the word count prior to display.

CHARACTERISTICS

WRDCNT is re-entrant and re-usable. WRDCNT considers a word to be any collection of characters separated by one or more spaces, tabs, returns, linefeeds, or formfeeds.

WRDCNT is designed to work with text files. Using it on binary data files will not yield useful results.

FORMAT

```
WRDCNT filespec {adjustment}
```

filespec is the file specification and ***adjustment*** is a factor applied to the result number.

OPERATION

Enter WRDCNT followed the file specification for the file in which you wish to count words. For example:

```
WRDCNT NOVEL.TXT RETURN
```

You may optionally include an adjustment factor which is applied to the word count prior to displaying the count. This can be used to account for fixed format output which may contain extra formatting words you do not wish to count. For example:

```
WRDCNT MALLST.TXT -5 RETURN
```

MESSAGES

?Cannot OPEN [filename] - file not found

Check your syntax, or use DIR to see what files exist and try again.

WRMGEN

FUNCTION

Creates a warm boot monitor file on the disk for transfer to a backup media.

CHARACTERISTICS

A warm boot monitor is an abbreviated, pre-initialized version of your normal monitor file containing enough information to get your system up and running when your System Disk has been erased or written over accidentally. After you have performed a warm boot, you can restore the other necessary files to your system from backup media, and perform a normal boot to restore your entire system to its former configuration.

For suggestions on what programs to include in your warm boot monitor, and for examples of use, see your *System Operator's Guide.*

FORMAT

```
WRMGEN {filename}
```

filename is an optional name for your warm boot monitor file. The filename will default to the name of your system type with a .WRM extension (for example, AMOSL.WRM) and the device and account you are logged into.

OPERATION

You may want to use the DEVTBL command to see (and make note of) what devices are defined on your system, and whether they are sharable or not. You may need this information during the WRMGEN process.

If you have a self-configuring disk, use the BITMAP command and write down the size (in words) of your bitmap.

Enter WRMGEN at AMOS command level. Enter a filename if you want your warm boot file to be called something other than the default. For example:

```
WRMGEN RETURN
WRMGEN BACKUP.WRM RETURN
```

Now the program asks you to specify how you want the warm boot monitor to be initialized. First it will ask for the `Input monitor.` Enter the name of your system monitor file. You must enter at least the file name, such as AMOSL. The rest of the filespec defaults to DSK0:filename.MON[1,4].

Next WRMGEN asks for the `System disk driver.` You must enter at least the file name, such as SCZRR or SCZR60. The rest of the filespec defaults to DSK0:Filename.DVR[1,6]. The filespec must be three characters, and cannot be "DSK". Depending on your system type, use the following guidelines to specify the disk driver filename to use:

System Type	Disk Driver Filename	SCSI Dispatcher
Older Systems with SASI Interface and no Roadrunner board (AM-1000, 1200, 1400, 1600, 1500VME, 2000M/VME, 3000M/VME)	SCZDVR.DVR	None (enter RETURN)
Older Systems with Roadrunner board (AM-172 or AM-174 boards)	SCZRR.DVR	SIMRR.SYS
AM-4000M/VME or AM-3000M with AM-540 SCSI controller	SCZ190.DVR	SIM190.SYS
Eagle 100, 200, 300, 500, 550	SCZRR.DVR	SIMRR.SYS
AM-6000 or AM-6060	SCZR60.DVR	SIMR60.SYS
Eagle 450	SCZ138.DVR	SIM138.SYS

If your computer uses CMOS boot settings and your system disk is not at SCSI ID 0, the system disk driver must be a driver created with FIXLOG for that SCSI ID.

Then WRMGEN asks for the `Number of logical units.` If you do not have a self-configuring disk, or if the disk driver was created with FIXLOG, this question will not appear.

If you have a self-configuring disk, `Bitmap size` is the next question.

WRMGEN asks for a `Language definition table name`. The default is DSK0:filename.LDF[1,6].

Next WRMGEN asks for the `SCSI dispatcher`. Enter the name of the simple SCSI dispatcher for your computer or RETURN if your system doesn't use a dispatcher.

Then WRMGEN asks for your `System terminal interface driver.` Enter at least the filename of your system terminal interface driver, such as AM318. The rest of the filespec defaults to DSK0:filename.IDV[1,6].

Then enter your `System terminal interface port number`. The default value is zero.

WRMGEN asks for the `System terminal interface baud rate.` You must enter the actual baud rate, such as 9600. These baud rates are documented in your *System Operator's Guide to the System Initialization Command File.* The default is 19200.

Next the program prompts you for the `System terminal driver.` Enter at least the file name of your system terminal driver, such as ALPHA. The rest of the filespec will default to DSK0:filename.TDV[1,6].

After you have entered this basic information, you will see a message asking you to enter the names of Secondary Devices to be defined into system memory.

These are devices on your system you want to be operational after the warm boot (you may have noted them in step 1 above). If you enter a device name, you must enter the name of the device, one device name per line (for example, VCR0). Note there is no colon (:) after VCR0.

If a device is non-sharable, put a slash (/) in front of the device name. Printers, 1/4" streaming tape drives, and video cassette recorders are non-sharable. Bitmaps, etc., are automatically set up as needed.

When defining secondary devices, you must define all sharable devices (such as disks) before any non-sharable devices.

For self-configuring disks, WRMGEN asks for the bitmap size; if the disk driver was not created with FIXLOG, it also asks for the number of logical units.

This only **defines** the device into system memory; it does not load the actual device driver programs (such as VCR.DVR).

WRMGEN then asks you to enter the names of the programs to be pre-loaded into `System memory`.

If you have an intelligent controller (such as an AM-515), you must enter the microcode file (such as AM515.MIC) along with the driver program. If the microcode file is not in system memory, the device will not function. This applies to any device with a microcode file (such as an AM-350).

The drivers for any tape devices you want to use must also be in system memory.

Enter only one program name at a time. To stop loading, press RETURN only. For example:

```
Program to load: VCR.DVR[1,6] RETURN
Program to load: CMDLIN.SYS RETURN
Program to load: MTURES RETURN
Program to load: SYSMSG.USA RETURN
Program to load: RETURN
```

You may enter only the program name, if you wish. The rest of the program specification defaults to DSK0:filename.LIT[1,4].

Alpha Micro systems prior to AM-1500 series systems may have a size limit of 64K for a warm boot monitor. Consider this when defining programs, if you have such a system.

Now you will be asked to enter the names of the programs to be pre-loaded into the `User Partition`. As before, enter only one program name at a time, and enter a blank line to stop. The same defaults apply.

After you have transferred the warm boot monitor file to your backup media, remember to label the container with the various programs you included in the monitor file so you will know which programs you can use when you perform a warm boot.

MESSAGES

?Cannot open [filespec] - file not found

Check your syntax or use DIR to locate the file, and try again.

XED

FUNCTION

Creates and edits text files, especially program files.

CHARACTERISTICS

AlphaXED is re-entrant and re-usable. AlphaXED is a screen-oriented text editor designed especially for writing program code. You see the text you are editing displayed on the screen, and move the screen cursor to the location in your file you want to view or edit.

In Command mode, AlphaXED lets you search for specific strings of text, perform local and global replacements, move and delete blocks of text, and change various editing parameters.

AlphaXED copies into memory the file you want to edit and makes a backup file by renaming the disk file to a .BAK extension. When you exit AlphaXED, the new, edited version of the file goes out to disk under the original name and extension of the file. You may edit a file too big to fit into your memory partition.

An AlphaXED initialization file, XED.INI, lets you set your own default editing parameters. See your *AlphaXED User's Guide* for more detail on using AlphaXED and setting up the XED.INI file.

To exit AlphaXED, enter Command mode by pressing ESC. At the AlphaXED prompt, >, enter **F** to exit and update your file, or **Q** if you want to exit without updating.

FORMAT

```
XED filespec {/switch}
```

filespec selects the file you want to edit, and ***switch*** is an option request. If you don't specify a filespec, you are prompted for one. The default extension can vary—see your *AlphaXED User's Manual*.

DEFAULTS

The defaults AlphaXED uses (for example, the default file extension), are defined in the AlphaXED initialization file, XED.INI.

OPTIONS

All the switches may be abbreviated to any unique characters.

/BATCH Suppresses most screen display output. Especially for use with Task Manager to reduce unnecessary screen output to the .LOG files.

/BIN Used with binary and data files. Carriage returns and nulls are transparent.

/NOJOURNAL Turn journaling off.

/NODISPLAY Turns off display of changes during a journal file recovery.

/NOYANK Opens a file without putting any text into memory. Useful for YANKing data into the front of a file too large for your memory.

/READ Opens a file in another account for Read-only access. Lets you see a file in a "protected" account. You can only exit with Q!—any changes to the file are not kept.

/SUBROUTINE Executes XED as if it were being called as a subroutine from another program. Suppresses most interactive input and output.

/TRACE Displays each line of the XED.INI file as it processes.

OPERATION

Enter XED followed by the specification of the file you want to edit. For example:

```
XED INVEN.M68 RETURN
```

If the file you specify does not yet exist, you are asked if you want to create it. Enter **Y** for Yes or **N** for No. If you enter **N**, AlphaXED returns you to AMOS command level.

When you enter a file, you see either text, or a screen full of lines of asterisks (if the file is empty or new). Now you can enter or edit your text. If the WRAP feature is set to OFF in your XED.INI file, you must press RETURN at the end of each line to begin a new line. If the WRAP feature is ON, AlphaXED begins a new line for you when you reach the end of a line.

If you are editing an existing file, AlphaXED loads a copy of that file into memory and takes you directly to the mode (Screen mode or Command mode) indicated by the START command in the XED.INI file.

If you are in Screen mode, you can use the various cursor movement and screen-to-screen movement commands to move the cursor to the point in your text where you want to make changes. Then use the appropriate screen editing commands to effect those changes. To transfer from Screen mode to Command mode, or from Command mode to Screen mode, press ESC or press CTRL/[. In Command mode, you see the cursor waiting after the AlphaXED prompt symbol, ">".

MESSAGES

The AlphaXED error messages are explained in your *AlphaXED User's Guide*.

XMOUNT

FUNCTION

Opens and makes an external AMOS format disk file available for use as a disk sub-device. Closes and makes unavailable a sub-device that was previously XMOUNTed.

This command is only available on AMOS 8.x systems.

CHARACTERISTICS

XMOUNT is re-entrant and re-usable. XMOUNT is used to tell the system that you want to access an externally defined native Alpha Micro Diskfile (AMD) as an AMOS disk subdevice. When access to the subdevice is no longer required, it can be unXMOUNTed. AMOS 8.x systems may have multiple AMD files on the local hard drives or on removable media such as DVD-RAM. This command makes it possible to change which AMD file is accessible to AMOS for a particular device name. It also allows the removable media to be conveniently replaced. Read-only AMD files, whether on the hard drive or on read-only removable media, are not supported.

After a device is XMOUNTed it must then be MOUNTed before full AMOS access is available. XMOUNT/U will automatically do an unmount.

XMOUNT automatically creates the DEVTBL and BITMAP information in system shared memory and therefore requires SMEM to be initialized.

Prerequisites:

A DVR:dev.DVR (=DVR:PCDSK.DVR) must exist or be created.

There must NOT be DEVTBL and BITMAP entries for the device in the system.INI file.

SMEM must be initialized and have sufficient free space to hold the device's DEVTBL entries and BITMAP information. This means that XMOUNT cannot be used until after the final SYSTEM and SMEM statements in the system.INI.

The device driver (dev.DVR) must be in system memory (loaded during system initialization).

The device must be defined on the [AMOS Disk] tab of the System Configuration screen and point to a valid AMD file.

FORMAT

```
XMOUNT {/U} dev: {/U}
```

dev: is the specification of the device you want to xmount and /u is a switch that causes the device to be unmounted.

OPTIONS

This switch is an operation switch, and may be abbreviated.

/UNMOUNT	Unmounts the specified disk.

OPERATION

To allow access to a removable AMD file, enter XMOUNT followed by the device specification. For example:

XMOUNT REM: [return]

XMOUNT then displays how many logicals the device contains. This opens the AMD file and builds the appropriate DEVTBL and BITMAP entries in SMEM. You must then use the AMOS MOUNT command to mount the desired logical drives.

To close and disable access to a removable AMD file, enter XMOUNT/U followed by the device specification. For example:

XMOUNT/U REM: [return]

This will flush any remaining unwritten data to the AMD file, close the file, and remove the devtbl and bitmap entries from SMEM. If the AMD file is on a removable media, you must ensure that the removable device has actually finished its writing process before ejecting the media. Failure to allow the device to finish writing may cause loss of data or data corruption.

Using XMOUNT in conjunction with changing the AMD file in the [AMOS disks] tab of the System Configuration screen allows you to change the AMD file referenced by the AMOS device without rebooting the AMOS system.

SYSTEM INITIALIZATION FILE

The following changes in the system initialization file may be required:

Load the device driver into system memory. For example:

SYSTEM REM.DVR[1,6]

Do NOT add DEVTBL or BITMAP for this device to the system initialization file.

Setup SMEM if it is not already defined. For example:

SMEM 5000K

This sets up a 5MB shared memory area. The SMEM statement must be after the last SYSTEM statement.

MESSAGES

?Device contains nnn logical units.

Shows that the device has nnn logical drives configured.

?Device does not exist.

Device does not exist in DEVTBL when doing XMOUNT/U.

?Device is not AMOS format

The hidden sector of the device is invalid.

?Error - Driver must be in system memory.

The driver for the device is not in system memory. The system initialization file should be modified if necessary.

?Error - Invalid Switch.

A switch other than /U was entered.

?Error: Not a releasable device.

The specified device is defined in system memory instead of in SMEM and cannot be unXMOUNTed.

?Error opening device - ....

The AMD file could not be opened for the reason shown.

?Error -- unable to acquire shared memory.

Either SMEM does not exist or there is insufficient free space or device already exists in SMEM. You cannot XMOUNT a device that is already XMOUNTed.

?Impossible error - can't find DEV SMEM module

For some unknown reason the device information could not be found in SMEM when doing a XMOUNT/U.

XY

FUNCTION

Lets you position the screen cursor on your terminal display and set certain terminal attributes.

CHARACTERISTICS

XY is re-entrant and re-usable. To be able to use the XY command, your terminal driver (the program that takes care of the screen-positioning functions of your terminal) must allow use of TCRT screen calls.

XY can perform any TCRT function your terminal supports. See your *AMOS Terminal Programmer's Manual* for a complete list of TCRT calls.

XY can be used at AMOS command level directly or within a command file. You will probably find this command most useful within a command file; you can use XY to help you position and control the display of your command file messages.

FORMAT

```
      XY row-number column-number
or:
      XY = screen-function
or:
      XY negative-number positive number
```

The first format is for positioning the cursor on the screen—***row-number*** is the horizontal position and ***column-number*** is the vertical position. The row-number may be between 1 and the length of your screen (usually 24). The column number may be between 1 and the width of your screen (usually 80).

The second format is for special screen function calls (TCRT -1,n).

The third format, called direct format, lets you enter any TCRT command, including foreground and background color changes.

OPERATION

TO POSITION THE CURSOR:

Type XY followed by the numbers of the screen row and column where you want the cursor to be. For example:

```
      XY 12 40 RETURN
```

This positions the cursor to the 12th line on the screen and the 40th character position (about the middle of the screen on most terminals).

You can also use the row-column format to perform TCRT functions, by subtracting the first number of the TCRT call from 256. For example, an AlphaBASIC TAB (-5,42), would be `XY 251 42`.

TO SELECT A SCREEN FUNCTION (TCRT (-1,n)):

Enter XY, an equal sign, and the number of the screen function you want to perform. For example:

```
XY = 0 RETURN
XY = 32 RETURN
```

The first command clears your screen. The second turns on reverse video, so characters are displayed the opposite way they normally are—i.e., if your screen normally displays green letters on a black background, you would see black letters on a green background.

USING DIRECT FORMAT

To use any TCRT function, enter XY and the TCRT codes. For example:

```
XY -2 1 RETURN
```

This sets the foreground color to color number 1.

You can use any of the three formats to perform a TCRT (-1,n) function. For example, each of these commands clears the screen:

`xy = 0` RETURN	Screen function format
`xy 255 0` RETURN	Row-column format
`xy -1 0` RETURN	Direct format

640INI

FUNCTION

Loads the AM-515 controller with AM-640 mag tape interface microcode. Use after warm booting from a mag tape attached to the AM-640 paddle card to provide file-structured access to tapes created with MTUSAV or another file-structured tape utility.

CHARACTERISTICS

640INI is re-entrant and re-usable. It works only if you have an AM-515-10 in your VME system. If not, your job may lock up if you try to run 640INI. 640DVR.DVR must be in either system or user memory to use 640INI.

OPERATION

You need to use 640INI only after warm booting your computer from a mag tape. If your system meets the requirements for 640INI, create a warm boot tape containing AM640.MIC, 640DVR.DVR, and 640INI.LIT added to the system memory partition list.

When you warm boot using this tape, after you see the `Up and running...` message, type:

```
640INI RETURN
```

You should see the message:

```
Microcode initialization successful
```

You can now read file-structured tapes on your mag tape drive.

MESSAGES

?640DVR.DVR expected to be in memory

640INI requires 640DVR.DVR in system memory. Load the file into memory and try again.

?Driver does not contain an initialization routine

The copy of 640DVR.DVR in system memory has somehow been corrupted and 640INI cannot find and read the initialization routine. You need to find a clean copy of 640DVR.DVR and load it into system memory.

?Error during initialization

A problem occurred during microcode initialization and the process could not complete. Make sure AM640.MIC is available in memory or in DSK0:[1,6].

Appendix A - Character Sets

AMOS uses a single-byte character set. Such a character set can represent 256 different characters. The character set is aligned with a number of international standards.

A SHORT HISTORY OF CHARACTER SETS

The first international standard was set in 1965 by ECMA (European Computer Manufacturer's Association) and was known as ECMA-6. The character set was adopted by other standards bodies, and is also known as US-ASCII, DIN 66003, and ISO 646. The standard only defined a basic alphabet, and did not allow for national characters in use in many European countries. Such characters were incorporated by specifying twelve code points (see Note 1 in the table below) as being places where replacement characters could be defined. For example, Germany defined the letter Ä at code point 91, where the [character was located. These character sets were called the "national ISO 646 variants". Portability of files containing such characters were low.

In 1981, the IBM PC introduced an 8-bit character set with Code Page 437, a character set with many special characters. In 1982 DEC MCS (Multi Language Character Set) was released. This character set was very similar to ISO 6937/2, which in turn is almost identical to the modern standard for 8-bit character sets, ISO 8859. In 1985 ECMA standardized ECMA-94, which dealt with almost all European languages. ECMA-94 was taken up by ISO, as ISO 8859-1 through 8859-4, and standardized in 1987.

Microsoft released MS-DOS 3.3 in 1987, which used Code Page 850. This code page uses all the characters from ISO 8859-1, plus a few extra at code points representing the non-printing characters. A second code page, Code Page 819, is fully ISO 8859-1 compliant.

THE ISO 8859 FAMILY OF STANDARDS AND AMOS

The ISO 8859-x character sets are designed for maximum interoperability and portability. All of them are a superset of US-ASCII and will render English text properly. The code points 0xA0 through 0xFF are used to represent national characters, while the characters in the range 0x20 through 0x7F are the same as in the ISO 646 (US-ASCII) character set. Thus ASCII text is a subset of all ISO 8859 character sets, and will be rendered properly by them. The code points 0x80 through 0x9F are earmarked as extended control characters and are not used for encoding characters.

The ISO 8859 family of standards consists of:

8859-1	For Europe, Latin America, the Caribbean, Canada, and Africa
8859-2	For Eastern Europe
8859-3	For SE Europe, and a miscellany of alphabets, such as Esperanto, and Maltese
8859-4	For Scandinavia, and the Baltic states (mostly covered by 8859-1 also)
8859-5	For languages using the Cyrillic alphabet
8859-6	For languages using Arabic
8859-7	For modern Greek

8859-8	For Hebrew
8859-9	Known as Latin-5. The same as 8859-1 except for Turkish instead of Icelandic characters
8859-10	Known as Latin-6, for Lappish, Nordic, and Eskimo languages

ISO 8859-1 (also known as ISO Latin-1) has the required characters to display most Western European languages. It supports Afrikaans, Basque, Catalan, Danish, Dutch, English, Faeroese, Finnish, French, Galician, German, Icelandic, Irish, Italian, Norwegian, Portuguese, Spanish and Swedish. It cannot support Welsh, due to two missing characters (Latin Letter W with circumflex and Latin Letter Y with circumflex). It is the preferred encoding for the Internet.

AMOS follows this lead, and expects 8-bit aware software to use these ISO standards.

In passing, the ISO 8859-1 standard is a subset of the Unicode 1.x and 2.0 standards, which use 16-bit character sets to encode most of the world's alphabets. Unicode has aligned itself with a further ISO standard for 32-bit character sets, ISO 10646-1:1993. There are several mappings available (such as UTF-8) which can map Unicode characters to a variable length 8-bit based encoding.

Character	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
NULL		0	0	0		Null	Cc	
SOH		1	1	1		Start of Heading	Cc	
STX		2	2	2		Start of Text	Cc	
ETX		3	3	3		End of Text	Cc	
EOT		4	4	4		End of Transmission	Cc	
ENQ		5	5	5		Enquiry	Cc	
ACK		6	6	6		Acknowledge	Cc	
BEL		7	7	7		Bell	Cc	
BS		10	8	8		Backspace	Cc	
HT		11	9	9		Character Tabulation (Tab)	Cc	
LF		12	10	A		Line Feed	Cc	
VT		13	11	B		Line Tabulation (Vertical Tab)	Cc	
FF		14	12	C		Form Feed	Cc	
CR		15	13	D		Carriage Return	Cc	
SO		16	14	E		Shift Out	Cc	
SI		17	15	F		Shift In	Cc	
DLE		20	16	10		Data Link Escape	Cc	
DC1		21	17	11		Device Control One	Cc	
DC2		22	18	12		Device Control Two	Cc	
DC3		23	19	13		Device Control Three	Cc	
DC4		24	20	14		Device Control Four	Cc	
NAK		25	21	15		Negative Acknowledge	Cc	
SYN		26	22	16		Synchronous Idle	Cc	
ETB		27	23	17		End of Transmission Block	Cc	
CAN		30	24	18		Cancel	Cc	
EM		31	25	19		End of Medium	Cc	
SUB		32	26	1A		Substitute	Cc	
ESC		33	27	1B		Escape	Cc	
FS	IS4	34	28	1C		File Separator	Cc	
GS	IS3	35	29	1D		Group Separator	Cc	
RS	IS2	36	30	1E		Record Separator	Cc	
US	IS1	37	31	1F		Unit Separator	Cc	
SP		40	32	20	Space		Zs	
!		41	33	21	Exclamation Mark		Po	

Character	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
"		42	34	22	Quotation Mark		Po	
#		43	35	23	Number Sign	(Hash)	So	1
$		44	36	24	Dollar Sign		Sc	1
%		45	37	25	Percent Sign		Po	
&		46	38	26	Ampersand		So	
'		47	39	27	Apostrophe	Apostrophe-Quote	Po	
(		50	40	28	Left Parenthesis	Opening Parenthesis	Ps	
)		51	41	29	Right Parenthesis	Closing Parenthesis	Pe	
*		52	42	2A	Asterisk		So	
+		53	43	2B	Plus Sign		Sm	
,		54	44	2C	Comma		Po	
-		55	45	2D	Hyphen-Minus	Minus Sign	Pd	
.		56	46	2E	Full Stop	Period	Po	
/		57	47	2F	Solidus	Slash	Po	
0		60	48	30	Digit Zero		Nd	
1		61	49	31	Digit One		Nd	
2		62	50	32	Digit Two		Nd	
3		63	51	33	Digit Three		Nd	
4		64	52	34	Digit Four		Nd	
5		65	53	35	Digit Five		Nd	
6		66	54	36	Digit Six		Nd	
7		67	55	37	Digit Seven		Nd	
8		70	56	38	Digit Eight		Nd	
9		71	57	39	Digit Nine		Nd	
:		72	58	3A	Colon		Po	
;		73	59	3B	Semicolon		Po	
<		74	60	3C	Less-Than Sign		Sm	
=		75	61	3D	Equals Sign		Sm	
>		76	62	3E	Greater-Than Sign		Sm	
?		77	63	3F	Question Mark		Po	
@		100	64	40	Commercial At		Po	1
A		101	65	41	Latin Capital Letter A		Lu	
B		102	66	42	Latin Capital Letter B		Lu	
C		103	67	43	Latin Capital Letter C		Lu	
D		104	68	44	Latin Capital Letter D		Lu	
E		105	69	45	Latin Capital Letter E		Lu	
F		106	70	46	Latin Capital Letter F		Lu	
G		107	71	47	Latin Capital Letter G		Lu	
H		110	72	48	Latin Capital Letter H		Lu	
I		111	73	49	Latin Capital Letter I		Lu	
J		112	74	4A	Latin Capital Letter J		Lu	
K		113	75	4B	Latin Capital Letter K		Lu	
L		114	76	4C	Latin Capital Letter L		Lu	
M		115	77	4D	Latin Capital Letter M		Lu	
N		116	78	4E	Latin Capital Letter N		Lu	
O		117	79	4F	Latin Capital Letter O		Lu	
P		120	80	50	Latin Capital Letter P		Lu	
Q		121	81	51	Latin Capital Letter Q		Lu	
R		122	82	52	Latin Capital Letter R		Lu	
S		123	83	53	Latin Capital Letter S		Lu	
T		124	84	54	Latin Capital Letter T		Lu	
U		125	85	55	Latin Capital Letter U		Lu	
V		126	86	56	Latin Capital Letter V		Lu	
W		127	87	57	Latin Capital Letter W		Lu	
X		130	88	58	Latin Capital Letter X		Lu	
Y		131	89	59	Latin Capital Letter Y		Lu	
Z		132	90	5A	Latin Capital Letter Z		Lu	
[		133	91	5B	Left Square Bracket	Opening Square Bracket	Ps	1

Char- acter	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
\		134	92	5C	Reverse Solidus	Backslash	Po	1
]		135	93	5D	Right Square Bracket	Closing Square Bracket	Pe	1
^		136	94	5E	Circumflex Accent	Spacing Circumflex; Caret	Lm	1
_		137	95	5F	Low Line	Spacing Underscore; Underscore	So	
`		140	96	60	Grave Accent	Spacing Grave	Lm	1
a		141	97	61	Latin Small Letter A		Ll	
b		142	98	62	Latin Small Letter B		Ll	
c		143	99	63	Latin Small Letter C		Ll	
d		144	100	64	Latin Small Letter D		Ll	
e		145	101	65	Latin Small Letter E		Ll	
f		146	102	66	Latin Small Letter F		Ll	
g		147	103	67	Latin Small Letter G		Ll	
h		150	104	68	Latin Small Letter H		Ll	
i		151	105	69	Latin Small Letter I		Ll	
j		152	106	6A	Latin Small Letter J		Ll	
k		153	107	6B	Latin Small Letter K		Ll	
l		154	108	6C	Latin Small Letter L		Ll	
m		155	109	6D	Latin Small Letter M		Ll	
n		156	110	6E	Latin Small Letter N		Ll	
o		157	111	6F	Latin Small Letter O		Ll	
p		160	112	70	Latin Small Letter P		Ll	
q		161	113	71	Latin Small Letter Q		Ll	
r		162	114	72	Latin Small Letter R		Ll	
s		163	115	73	Latin Small Letter S		Ll	
t		164	116	74	Latin Small Letter T		Ll	
u		165	117	75	Latin Small Letter U		Ll	
v		166	118	76	Latin Small Letter V		Ll	
w		167	119	77	Latin Small Letter W		Ll	
x		170	120	78	Latin Small Letter X		Ll	
y		171	121	79	Latin Small Letter Y		Ll	
z		172	122	7A	Latin Small Letter Z		Ll	
{		173	123	7B	Left Curly Bracket	Opening Curly Bracket	Ps	1
|		174	124	7C	Vertical Line	Vertical Bar	So	1
}		175	125	7D	Right Curly Bracket	Closing Curly Bracket	Pe	1
~		176	126	7E	Tilde		So	1
DEL		177	127	7F		Delete	Cc	
PAD		200	128	80		Padding Character	Cc	
HOP		201	129	81		High Octet Preset	Cc	
BPH		202	130	82		Break Permitted Here	Cc	
NBH		203	131	83		No Break Here	Cc	
IND		204	132	84		Index	Cc	
NEL		205	133	85		Next Line	Cc	
SSA		206	134	86		Start of Selected Area	Cc	
ESA		207	135	87		End of Selected Area	Cc	
HTS		210	136	88		Character Tabulation Set	Cc	
HTJ		211	137	89		Character Tabulation with Justification	Cc	
VTS		212	138	8A		Line Tabulation Set	Cc	
PLD		213	139	8B		Partial Line Forward	Cc	
PLU		214	140	8C		Partial Line Backward	Cc	
RI		215	141	8D		Reverse Line Feed	Cc	
SS2		216	142	8E		Single-Shift Two	Cc	
SS3		217	143	8F		Single-Shift Three	Cc	
DCS		220	144	90		Device Control String	Cc	
PU1		221	145	91		Private Use One	Cc	
PU2		222	146	92		Private Use Two	Cc	
STS		223	147	93		Set Transmit State	Cc	

Char- acter	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
CCH		224	148	94		Cancel Character	Cc	
MW		225	149	95		Message Waiting	Cc	
SPA		226	150	96		Start of Guarded Area	Cc	
EPA		227	151	97		End of Guarded Area	Cc	
SOS		230	152	98		Start of String	Cc	
SGCI		231	153	99		Single Graphic Character Introducer	Cc	
SCI		232	154	9A		Single Character Introducer	Cc	
CSI		233	155	9B		Control Sequence Introducer	Cc	
ST		234	156	9C		String Terminator	Cc	
OSC		235	157	9D		Operating System Command	Cc	
PM		236	158	9E		Privacy Message	Cc	
APC		237	159	9F		Application Program Command	Cc	
NBSP		240	160	A0	No-Break Space		Zs	
¡		241	161	A1	Inverted Exclamation Mark		Po	
¢		242	162	A2	Cent Sign		Sc	
£		243	163	A3	Pound Sign		Sc	
¤		244	164	A4	Currency Sign		Sc	
¥		245	165	A5	Yen Sign		Sc	
¦		246	166	A6	Broken Bar		So	
§		247	167	A7	Section Sign		So	
¨		250	168	A8	Diaeresis		Lm	
©		251	169	A9	Copyright Sign		So	
ª		252	170	AA	Feminine Ordinal Indicator		So	
«		253	171	AB	Left-Pointing Double Angle Quotation Mark		Ps	
¬		254	172	AC	Not Sign		Sm	
-		255	173	AD	Soft Hyphen		Po	
®		256	174	AE	Registered Sign		So	
¯		257	175	AF	Macron		Lm	
°		260	176	B0	Degree Sign		So	
±		261	177	B1	Plus-Minus Sign		Sm	
²		262	178	B2	Superscript Two		So	
³		263	179	B3	Superscript Three		So	
´		264	180	B4	Acute Accent		Lm	
µ		265	181	B5	Micro Sign		So	
¶		266	182	B6	Pilcrow Sign		So	
·		267	183	B7	Middle Dot		Po	
¸		270	184	B8	Cedilla		Lm	
¹		271	185	B9	Superscript One		So	
º		272	186	BA	Masculine Ordinal Indicator		So	
»		273	187	BB	Right-Pointing Double Angle Quotation Mark		Pe	
¼		274	188	BC	Vulgar Fraction One Quarter		So	
½		275	189	BD	Vulgar Fraction One Half		So	
¾		276	190	BE	Vulgar Fraction Three Quarters		So	
¿		277	191	BF	Inverted Question Mark		Po	
À		300	192	C0	Latin Capital Letter A With Grave		Lu	
Á		301	193	C1	Latin Capital Letter A With Acute		Lu	
Â		302	194	C2	Latin Capital Letter A With Circumflex		Lu	
Ã		303	195	C3	Latin Capital Letter A With Tilde		Lu	
Ä		304	196	C4	Latin Capital Letter A With		Lu	

Character	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
					Diaeresis			
Å		305	197	C5	Latin Capital Letter A With Ring Above		Lu	
Æ		306	198	C6	Latin Capital Ligature AE		Lu	2
Ç		307	199	C7	Latin Capital Letter C With Cedilla		Lu	
È		310	200	C8	Latin Capital Letter E With Grave		Lu	
É		311	201	C9	Latin Capital Letter E With Acute		Lu	
Ê		312	202	CA	Latin Capital Letter E With Circumflex		Lu	
Ë		313	203	CB	Latin Capital Letter E With Diaeresis		Lu	
Ì		314	204	CC	Latin Capital Letter I With Grave		Lu	
Í		315	205	CD	Latin Capital Letter I With Acute		Lu	
Î		316	206	CE	Latin Capital Letter I With Circumflex		Lu	
Ï		317	207	CF	Latin Capital Letter I With Diaeresis		Lu	
Ð		320	208	D0	Latin Capital Letter Eth		Lu	
Ñ		321	209	D1	Latin Capital Letter N With Tilde		Lu	
Ò		322	210	D2	Latin Capital Letter O With Grave		Lu	
Ó		323	211	D3	Latin Capital Letter O With Acute		Lu	
Ô		324	212	D4	Latin Capital Letter O With Circumflex		Lu	
Õ		325	213	D5	Latin Capital Letter O With Tilde		Lu	
Ö		326	214	D6	Latin Capital Letter O With Diaeresis		Lu	
×		327	215	D7	Multiplication Sign		Sm	
Ø		330	216	D8	Latin Capital Letter O With Stroke		Lu	
Ù		331	217	D9	Latin Capital Letter U With Grave		Lu	
Ú		332	218	DA	Latin Capital Letter U With Acute		Lu	
Û		333	219	DB	Latin Capital Letter U With Circumflex		Lu	
Ü		334	220	DC	Latin Capital Letter U With Diaeresis		Lu	
Ý		335	221	DD	Latin Capital Letter Y With Acute		Lu	
Þ		336	222	DE	Latin Capital Letter Thorn		Lu	
ß		337	223	DF	Latin Small Letter Sharp S		Ll	
à		340	224	E0	Latin Small Letter A With Grave		Ll	
á		341	225	E1	Latin Small Letter A With Acute		Ll	
â		342	226	E2	Latin Small Letter A With Circumflex		Ll	
ã		343	227	E3	Latin Small Letter A With Tilde		Ll	

Char-acter	Also Called	Octal Value	Decimal Value	Hex Value	ISO/IEC 10646-1:1993(E) and Unicode 2.0 Name	Also Known As	Type.	See Note
ä		344	228	E4	Latin Small Letter A With Diaeresis		Ll	
å		345	229	E5	Latin Small Letter A With Ring Above		Ll	
æ		346	230	E6	Latin Small Ligature AE		Ll	2
ç		347	231	E7	Latin Small Letter C With Cedilla		Ll	
è		350	232	E8	Latin Small Letter E With Grave		Ll	
é		351	233	E9	Latin Small Letter E With Acute		Ll	
ê		352	234	EA	Latin Small Letter E With Circumflex		Ll	
ë		353	235	EB	Latin Small Letter E With Diaeresis		Ll	
ì		354	236	EC	Latin Small Letter I With Grave		Ll	
í		355	237	ED	Latin Small Letter I With Acute		Ll	
î		356	238	EE	Latin Small Letter I With Circumflex		Ll	
ï		357	239	EF	Latin Small Letter I With Diaeresis		Ll	
ð		360	240	F0	Latin Small Letter Eth		Ll	
ñ		361	241	F1	Latin Small Letter N With Tilde		Ll	
ò		362	242	F2	Latin Small Letter O With Grave		Ll	
ó		363	243	F3	Latin Small Letter O With Acute		Ll	
ô		364	244	F4	Latin Small Letter O With Circumflex		Ll	
õ		365	245	F5	Latin Small Letter O With Tilde		Ll	
ö		366	246	F6	Latin Small Letter O With Diaeresis		Ll	
÷		367	247	F7	Division Sign		Sm	
ø		370	248	F8	Latin Small Letter O With Stroke		Ll	
ù		371	249	F9	Latin Small Letter U With Grave		Ll	
ú		372	250	FA	Latin Small Letter U With Acute		Ll	
û		373	251	FB	Latin Small Letter U With Circumflex		Ll	
ü		374	252	FC	Latin Small Letter U With Diaeresis		Ll	
ý		375	253	FD	Latin Small Letter Y With Acute		Ll	
þ		376	254	FE	Latin Small Letter Thorn		Ll	
ÿ		377	255	FF	Latin Small Letter Y with Diaeresis		Ll	

Notes:

1. This code point is used by National Replacement Character Sets (7-bit character sets). Devices using such an NRC will not print the glyph shown, neither will it print glyphs for code points above 127.

2. ISO may be reclassifying these code points as “Latin Letter”, as certain Scandinavian languages use these characters as a complete letter, not as a ligature.

Type: The characters are broken down into “character types” by Unicode:

Cc	Control or Format Character
Ll	Lowercase Letter
Lm	Modifier Letter
Lu	Uppercase Letter
Nd	Decimal Number
Pd	Dash Punctuation
Pe	Close Punctuation
Po	Other Punctuation
Ps	Open Punctuation
Sc	Currency Symbol
Sm	Math Symbol
So	Other Symbol
Zs	Space Separator

Document History

Revision	Release	Date	Description
A00	L 1.0	06/82	New Document, Part Number DSS-10004-00.
A01	L 1.0A	10/82	Added AM-600/T Magnetic Tape Utility Program Reference Sheets.
A02	L 1.1	03/83	Added VCR and 1/4" Streamer Tape Driver backup commands. Added info on initializing BADBLK.SYS disk drives and modifying BADBLK.SYS to Added new LOKSER commands, LOKGEN and LOKUTL. Other minor changes.
A03	L 1.1	06/83	Added AM-415 information to BADBLK and FIX420. Added CRT415 and VER reference sheets.
A04	L 1.1A	08/83	Added Winchester disk information to BADBLK and FIX420. Added CPMCPY, CPMDIR, MENU, MTBOOT, and SHELL. Added 1/2" mag tape density settings to SET.
A05	L 1.2	05/84	Added the MONHSH reference sheet. Revised CRT610, DIR, SET, VCRDIR, VCRRES, VCRSAV, and VUE commands.
A06	L 1.3	06/85	Updated DSKANA, MONGEN, MAKQUE, SET, STAT and TSKINI. Added CACHE, ERSATZ, PRNT and VERIFY.
A07	L 1.3B	05/86	Added new VCR remote control information. Changed BITMAP to include size field. Added FIXLOG sheet.
A08	32 1.0	07/86	Added reference sheets for new commands: IF, LOGGER, LOGON, MUSER, SETJOB, SYSLOG. Updated DO, LOG, LOGOFF, SYSTAT, and TRMDEF. AMOS/32 only.
A09	L 1.3C 32 1.0A	12/86	Added reference sheets for new commands: MTUDIR, MTURES, and MTUSAV, updated BITMAP and FIXLOG.
00	2.0	03/88	**New Manual, DSO-00043-00**. Re-wrote the book to include all new 2.0 features. Information on extended disks, new BACKUP commands, etc.
01	2.0A	12/88	Added CRT520 and FMTSCZ; added SCSI disk information to BADBLK; added error messages and clarified BACKUP, BAKDIR, RESTOR, all STR... and VCR... commands. Revised chapter 2, chapter 5, DSKDDT, DSKDMP, MONTST, PRNT and SYSACT.
02	2.1	09/89	Added changes to BACKUP and related programs. Added new FIXTRN and MFDSEQ reference sheets, revised CREATE, CRT610, DSKANA, FILCOM, LOG, REDALL, RNDRED, and SET to document new features.
03	2.2	04/91	Added new DOS utility programs, also CBEN, CBDS, UTC, XED, WRDCNT, LINCNT, CDIR, CMP, CTYPE, EXP, TDVDEF, REDIR, POP, PUSH, GETVER, MK, OSINST, AGREP, DB, SMEM and BASBP. Updated BACKUP, BADBLK, CRT610, DIRSEQ, DSKANA, ERASE, FILCOM, FILTAP, FIXFLP, FIXTRN, FMTFLP, FMTSCZ, LOG, LOGON, LOKUTL, MONGEN, MOUNT, MTUDIR, MTURES, MTUSAV, MUSER, SET, SORT, SYSACT, TAPDIR, TAPFIL, VCRRES, and VCRSAV.
04	2.3	09/96	Added ACD, ADJIT, AMSCFG, BASICP, BASICX, COMPAT, COMPLP, DOSEXP, FIX219, FMT219, FWUPD, LDVSTS,

Revision	Release	Date	Description
			PLAYCD, RADMON, RUNP, RUNX, SCSI, SCZCSH, SCZPIC, SETPEN, SI, STAT1, TAPLOG, TMODE, and 640INI. Updated Chapters 5 and 6, ASCDMP, BACKUP, CACHE, CBEN, CBDS, COPY, CRT610, CRT620, DATE, DIRSEQ, DSKANA, DUMP, ERSATZ, FIXLOG, FIXFLP, FMTFLP, FMTSCZ, JOBPRI, LABEL, MK, MONTST, MOUNT, MTURES, MTUSAV, MUSER, PPN, PRINT, PUSH, REDIR, SET, SETJOB, SMEM, STAT, STRDIR, STRRES, STRSAV, SYSLOG, UTC, VCRRES, VDKUTL, VERIFY, WRMGEN, and XY.
05	2.3	03/97	Added FMTS2. Added note about FMTS2 to FMTSCZ sheet.
06	2.3A	06/97	Updated DSKANA, MONGEN, MONTST, SET, WRMGEN.
07	2.3A	12/97	Added SCZERR. Reformatted manual. General update and corrections as necessary to all commands. Updated Appendix A.
08	2.3A, PR 6/98	6/98	Rewrote MTUSAV; updated FMTS2 (maximum logical size), and RADMON (new switches)
09	2.3A, PR 4/99	4/99	Added FMSFLP; updated SYSLOG andWRMGEN.
10	2.3A, PR 10/99	10/99	Updated SET and added MAKACD.
11	2.3A, PR 10/99	2/00	Updated MAKACD and added ESTAT.
12	2.3A, PR 06/00	8/00	Updated SI
13	2.3A, PR 06/00	1/01	Updated SCSI and RADMON
14	2.3A, PR 06/00	3/01	Added ESLSI and ESNIC, deleted ESTAT.
15	2.3A, PR 06/00	2/02	Added ISOCD, DVD, MAKDVD, and FMTDVD
16	8.0, 05/04	5/04	Added XMOUNT
17	8.X, 10/06	10/06	Added DVDRES
18	8.X, 9/07	09/07	Added MAKBD, DIRBD, DBD, and BDRES