*** ARCHIVE ***

Disk Archive Utility

- from -

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1.0 Introduction

Disk Archive Utility, ARCHIVE is a disk back-up program for use with more than two drives. With this utility, you can store, retreive, and directory the contents of a complete diskette into a single save file. Utilizing the fact that files are set up by groups, this utility allows the user to waste at most one group on the destination device , instead of one group per source file. For example, the H47 utilizing double-sided, double-density disks has a group size of 16 sectors. If the user backed up a 300 sector H17 disk he may be using more than 500 sectors on the H47 due to the group allocation. By packing an entire disk into a single file, the user also avoids file naming conflicts, since HDOS never knows about the directory structure of the file. This utility must be used with HDOS V 2.0.

CAPABILITIES :

1) Ability to save any disk into a disk file, using less space than on the source disk. (Only allocated areas are saved)

2) Ability to restore any disk from a valid save file onto a destination disk.

3) Directory a save file, sending the output to any file or device.

4) Provides switch options to control file handling (i.e. leave out 'S' files, retain files on destination disk, etc.)

5) Ability to restore any single file from an archive file.

6) Ability to function with any directory device implemented under HDOS, including H17, H47, Tandon 5", or any other for which there exists a valid HDOS device driver.

2.0 Command format

ARCHIVE is designed such that the command interpreter can, by scanning the user's command line, determine what operation is to be performed based on the position of the file and device names in the line. The command summary and a detailed explanation of each command appear on the following pages.

2.1 SAVING A DISK TO AN ARCHIVE FILE :

>ARCHIVE savefile=inputdevice: [/switches]

When saving a disk to an archive file, the "savefile" is the output, with default device of 'SY0:' and extension of '.ARC'. The file name should be some descriptive name to identify the disk being saved. The "inputdevice" is any recognized HDOS directory device. The allowable switches are as follows, along with their action.

/Q - Prompt the user whether to include the named file in the archive file. If the user doesn't want to save the file, simply respond with 'N' to the prompt.

/S - Don't include 'S' flagged files in the archive file

NOTE

If both the '/S' and '/Q' switches are used, ARCHIVE will only prompt for those files without the 'S' flag.

For example, the command 'ARC BACKUP=SY1:' would result in the creation of a file called 'BACKUP.ARC' on SY0: which would contain the entire contents of the disk in drive SY1:. If the user had specified the command 'ARC BACKUP=SY1:/S', the resultant save (or archive) file would NOT have included 'S' flagged files from the source disk. If the command had included the '/Q' switch, as in 'ARC BACKUP=SY1:/Q', ARCHIVE would ask or query the user whether to include each individual file from the source disk.

2.2 RESTORING A DISK FROM AN ARCHIVE FILE :

>ARCHIVE ouputdevice:=archivefile [/switches]

When restoring a disk from an archive file, the output device must be mounted. The first step in restoration is deleting files from the output device. The directory is wiped clean, leaving only the files needed to maintain the device. This can be overridden through switches however. After the directory is cleaned, the volume is dismounted. While the volume is dismounted, the volume label and sysgen flags are changed in the volume control block. In this way the restored volume will be functionally identical to the original. The destination volume INIT version will be compared to the source if the volume is to be bootable, and a version error will occur if the base version does not match. The two version types will be printed and the user may override this safeguard.

After this, the volume is remounted and all the files are copied to the destination disk. The user should note that all flags will be maintained on specific files. This also includes the 'C' flag, specifying that the file is contiguous. This is to preserve the sysgen ability of a system volume. The input "archivefile" must be a valid archive file.

2.2.1 SWITCHES : -

/Q - This switch controls the deleting of files on the destination device. Each file will be prompted for, and if the user wishes not to delete the file, respond with a 'N' to the prompt.

/S - This switch keeps all files with the 'S' flag on the destination device. This can be helpful when converting from one version of an operating system to another.

/K - This switch allows the user simply to add the files of the savefile to the destination disk without changing volume contol information or deleting any files on the destination.

For example, the command 'ARC SY1:=BACKUP' would result in the restoring of the file called 'BACKUP.ARC' on SY0: onto the disk in drive SY1:. All files on the target disk would be deleted prior to the restore operation. If the user had specified the command 'ARC SY1:=BACKUP/S', no 'S' flagged files would be deleted from the destination diskette. If the command had included the '/Q' switch, as in 'ARC SY1:=BACKUP/Q', ARCHIVE would query the user whether to delete each individual file from the target disk before restoration. Finally, the '/K' switch, as in 'ARC SY1:=BACKUP/K', would cause ARCHIVE to not delete any files from the target disk.

2.3 TO DIRECTORY AN ARCHIVE FILE :

>ARCHIVE [listfile=]archivefile /LI

This command is used to get a complete directory of an archive file. If an output file "listfile" is omitted, it will default to 'TT:'. The directory will resemble a PIP directory listing in format. The only field that will be omitted is the creation date of the file. Also, one extra flag may be observed in the flags column. The 'E' flag is used to flag an error in saving the file. If the 'E' flag is present, the file was lost during the save operation. Since the directory structure of the file is very compact, it would be difficult to remove the entry. Instead, the file is merely flagged with the 'E' flag. The file will be of length zero, and will never be restored. The default for the output listing file is SY0:.DIR.

2.4 TO RESTORE A SINGLE FILE FROM AN ARCHIVE FILE :

```
>ARCHIVE dev:filename=archivefile
```

In this example, "filename" is the actual name of the file saved in the archive file. "dev:" is the device to place the output. ARCHIVE will scan the internal directory of the file for the output file name and copy it to the specified device. The user should note that it is impossible to rename the file before it is restored. For example, if the user wished to see the file README.DOC from an archive file named "SY1:FOO.ARC", the command would be:

```
>ARCHIVE TT:README.DOC=SY1:FOO (cr)
```

and the file would be printed on the screen.

3.0 GENERAL NOTES ON OPERATION :

3.1 Built in safeguards :

The archive file structure is such that the index block, directory and data fields are CRC'ed to insure data integrity. If the user should specify a file that is not a valid archive file for input, the user will encounter a CRC error message. This message should be heeded, and the user be aware that any or all files stored in the archive file may be corrupted. The user may elect to override this message, but should do so only with the understanding that the integrity of any programs or data restored may be lost. This message can also occur if the file was not created by ARCHIVE. A directory block CRC error will indicate that the file has been corrupted by some external force, i.e. access by some program other than ARCHIVE which rewrote sections of the block. All errors are generally self-explanatory, i.e. read-failure, no free space, etc.

3.2 Modes of operation :

If the user wishes to issue many commands to ARCHIVE, simply respond to the HDOS prompt with the program name, then the program will prompt for commands. For example:

```
>ARCHIVE (cr)
ARCHIVE -- Disk Archive Utility
Version 1.0 by David T. Carroll
ARC>
```

where "ARC>" is the prompt symbol for ARCHIVE, and commands may then be issued one at a time. Below are some examples of command usage:

```
>ARC SY1:ARCHIVE=DK0: (cr)
Comments (CTRL-D to finish) : test save (cr)
^D
Save complete ...


>ARC SY1:ARCHIVE=DK0:/Q (cr)
Include DDDEF.ACM  (Y/N) ? <Y> (cr)
Include TCP.MAC  (Y/N) ? <Y> (cr)
Include ECHO.ASM  (Y/N) ? <Y> (cr)
Include ASCII.ACM  (Y/N) ? <Y> (cr)
Include DIRDEF.ACM  (Y/N) ? <Y> (cr)
Include LABDEF.ACM  (Y/N) ? <Y> (cr)
Include ESINT.ACM  (Y/N) ? <Y> (cr)
Include SOB.ACM  (Y/N) ? <Y> (cr)
Include DDS.ACM  (Y/N) ? <Y> (cr)
Include IOCDEF.ACM  (Y/N) ? <Y> (cr)
Include ARCHIVE.ASM  (Y/N) ? <Y> (cr)
Include HDOS1.ACM  (Y/N) ? <Y> (cr)
Include DEVDEF.ACM  (Y/N) ? <Y> (cr)
Comments (CTRL-D to finish) : test save (cr)
^D
Save complete ...


>ARC TMP=SY1:ARCHIVE/LI (cr)

test save


>ARC SY1:ARCHIVE/LI (cr)

test save

Directory of SY1:ARCHIVE.ARC
Created on 17-Mar-81
Volume label : HDOS UTILITIES
Data CRC = 34289


Name      .Ext      Size    Flags

DDDEF     .ACM      2
TCP       .MAC      23
ECHO      .ASM      14
```

```
ASCII    .ACM      3
DIRDEF   .ACM      3
LABDEF   .ACM      5
ESINT    .ACM      14
SOB      .ACM      2
DDS      .ACM      6
IOCDEF   .ACM      5
ARCHIVE  .ASM      199
HDOS1    .ACM      24
DEVDEF   .ACM      5

    13 Files, Using 305 sectors.


>ARC DK0:=SY1:ARCHIVE/Q (cr)

ARCHIVE -- restoring the disk in drive DK0:
Are you sure (Y/N) ? <Y> (cr)

test save

Deleting files on destination device ...
Include DDDEF.ACM  for delete (Y/N) ? <Y> (cr)
Include TCP.MAC  for delete (Y/N) ? <Y> (cr)
Include ECHO.ASM  for delete (Y/N) ? <Y> (cr)
Include ASCII.ACM  for delete (Y/N) ? <Y> (cr)
Include DIRDEF.ACM  for delete (Y/N) ? <Y> (cr)
Include LABDEF.ACM  for delete (Y/N) ? <Y> (cr)
Include ESINT.ACM  for delete (Y/N) ? <Y> (cr)
Include SOB.ACM  for delete (Y/N) ? <Y> (cr)
Include DDS.ACM  for delete (Y/N) ? <Y> (cr)
Include IOCDEF.ACM  for delete (Y/N) ? <Y> (cr)
Include ARCHIVE.ASM  for delete (Y/N) ? <Y> (cr)
Include HDOS1.ACM  for delete (Y/N) ? <Y> (cr)
Include DEVDEF.ACM  for delete (Y/N) ? <Y> (cr)
Volume 050, Dismounted from DK0:
Label: HDOS UTILITIES
Volume 050, Mounted on DK0:
Label: HDOS UTILITIES

>
```

NOTE: Throughout this document the symbol (cr) appears in the examples. This symbol represents a user supplied carriage-return.