Worldwide Response Center

HP 3000 APPLICATION NOTE #86

IBM Labeled Tapes

Questions And Answers

HEWLETT PACKARD

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IBM Labeled Tapes Questions And Answers

Introduction

This Application Note is a compendium of questions and answers pertaining to IBM labeled tapes. This Information applies to both MPE/XL and MPE/V systems.

Q. What version do I need to be on, in order to create IBM labeled tapes on MPE/XL and MPE/V?. How do I create them?

A. You must be on MPE/XL 1.2 (A.20.1R) or later and on MPE/V VD5 (G.03.05) or later to create an IBM labeled tape. To accomplish this issue the following file equation and FCOPY command:

```
:FILE ibmtape;DEV=TAPE;LABEL=<volsetid>,IBM
:FCOPY FROM=file;TO=*ibmtape;EBCDICOUT

The system will then prompt you to reply to tape:
?time/#Sn/pin#/MOUNT VOLUME  volsetid (IBM)

you then reply with the ldev# and the label will be written to the
tape.

=REPLY pin#,ldev#
```

Note Notice that the volsetid=label name.

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* * * * * * * * * * *

Q. My records are shifted after FCOPYing odd length record files from an IBM labeled tape. How can I fix this problem?

A. In order to fix this problem do the following:
(We will assume that the file on tape has a record size of 503 bytes a blocking factor of 10 with 2249 records)

1) In the file equation for the tape, use the undefined length option. This will cause the labeled tape facility to use the block size from the tape label as the record size and to set blocking factor to 1.

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Example:

:FILE T;DEV=TAPE;REC=-5030,1,U,ASCII;LABEL=<volsetid>,IBM

2) Create the destination file with the proper record size and the amount of records desired.

Example: BUILD oddfile;REC=-503,10,F,ASCII;DISC=2249

3) Use the DEBLOCK parameter within FCOPY in order to align the records on word boundaries. The EBCDICIN translates EBCDIC IBM data to ASCII.

Example:

:FCOPY FROM=*T;TO=oddfile;EBCDICIN;DEBLOCK=-503

If you take a look at your oddfile you will notice that the data in it is not shifted any more.

* * * * * * * * * *

Q. I have an IBM labeled tape that contains a non-alphanumeric character in the volume set ID (label). I tried using FCOPY to read the tape, when I REPLY to the pin request is not satisfied and will keep repeating on the console. How can I read this tape?

A. To read an IBM labeled tape that contains a non-alphanumeric character in the volume set ID, use the following steps:

1) Issue the file equation for the tape without specifying the volsetid as follows:

:FILE T;DEV=TAPE;LABEL=,IBM

2) The PIN request will appear as follows:

?time/#S/pin#/Volume set ID for file T ?

3) Reply to the PIN request, specifying the volume set ID as in the following example where the volume set ID is #AeD4

=REPLY pin#,#AeD4 (Write volsetid with lower case and uppercase letters as shown by pin request)

* * * * * * * * * *

Q. IBM uses their own terminology on their labeled tapes, how do we compare their terminology to ours?

A. Let us consider the following file equation:

```
:FILE <formaldesignator>;DEV=TAPE;LABEL=<volsetid>,IBM
```

Where: formaldesignator = DataSetIdentifier (IBM terminology)
volsetid = DataSetSerialNumber (IBM terminology)

* * * * * * * * * *

Q. How can I find out what the volume set ID (label) is on an IBM labeled tape?

A. In order to find out what the volume set ID is on an IBM labeled tape, mount the tape and the volume set ID will be display on the console.

Example:

```
?time/#Sn/pin#/VOL volume set ID (IBM) mounted on ldev#
                   -------------
                         ^
                         !
                         !
                         !
```

Notice the volume set ID or label

* * * * * * * * * *

Q. How can I restore multiple files from an IBM labeled tape?

A. To read multiple files from an IBM labeled tape, use the NEXT parameter in the file equation to tape. NEXT positions the tape at the next file on tape.

Example:

```
1) :FILE T;DEV=TAPE;LABEL=<volsetid>,IBM,,NEXT

2) :RUN FCOPY.PUB.SYS

3) >FROM=*T;TO=name-of-file1;EBCDICIN;NEW

4) >FROM=*T;TO=name-of-file2;EBCDICIN;NEW

5) >FROM=*T;TO=name-of-file3;EBCDICIN;NEW


6) >FROM=*T;TO=name-of-filen;EBCDICIN;NEW

7) >EXIT
```

* * * * * * * * * *

Q. How can I scratch the label from an IBM labeled tape?

A. In order to scratch the label from an IBM labeled tape do the following:

```
:FILE T;DEV=TAPE;NOLABEL
:FCOPY FROM=$NULL;TO=*T
```

* * * * * * * * * * *

Q. I am trying to FCOPY a large file to an IBM labeled tape. I have discovered that starting with the second tape, and proceeding with all subsequent tapes, a message gets sent to the console expecting a REPLY. This message is asking for a VOL ID name even though that VOL ID is currently mounted. After I "REPLY pin#,Y" the VOL ID gets set to Y. Why is this, and why is the VOL ID not automatically carried to the next tape?

A. This problem is coming from the ,IBM that you have specified on the file equation. The IBM tape facility handles VOLUME SETS differently than HP does. HP creates for IBM a VOLUME SET name that is carried to each tape label. However, IBM would like it broken down one step further, so HP's IBM labeled tape feature complies. IBM would like to define each tape within the VOLUME SET uniquely.

For Example:

Let us say your tape label is named LABTAPE. the first reel will have a VOLUME SET NAME of LABTAPE, and a VOL ID of LABTAPE as well. Then you are prompted (on the console) to specify the next VOL ID. So, the second tape will be LABTAPE2 under the VOLUME SET LABTAPE. Tape three would be LABTAPE3, and so on.

* * * * * * * * * * *

Q. For MPE V G.03.05 (V-DELTA-5) versions of the operating system and pre MPE/XL 1.2 (A.20.1R), what is the algorithm for writing IBM labeled tapes?

A. An IBM labeled tape can be programmatically written by using the following algorithm:

1. Open the tape file with the DEV=TAPE parameter.

2. Open the tape file again, but this time use DEV=device#.

3. Write the tape label to the first open file. (Use the CTRANSLATE intrinsic to convert to EBCDIC).

4. Write the records to the second open file.

5. FCLOSE the first file without rewinding the tape (disp=011).

6. Write EOF's needed for labeled tape (see FILE SYS manual G-2).

7. FCLOSE the second file and rewind the tape.

* * * * * * * * * * *

Q. What is the default expiration date on IBM labeled tapes created on MPE V and MPE XL?

A. The default date on a labeled tape is 00/00/00.
The tape is automatically 'expired' when written.

* * * * * * * * * * *

Q. Can I FCOPY a file with an odd byte record length to an IBM labeled tape?

A. Yes. In order to FCOPY a file with an odd byte record length to an IBM labeled tape use on of the following methods:

1) :FILE T;DEV=TAPE;LABEL=<volsetid>,IBM;REC=-oddvalue,,U,ASCII(or BINARY)
:FCOPY FROM=file.grp.acct;TO=*T;EBCDICOUT

Specifying UNDEFINED (U) as the record format causes the file system to build a record using the recsize value provided.

Also, UNDEFINED records do not use a blocking factor value, even if one is provided. The blocking factor will always be 1.

2) :FILE T;DEV=TAPE;LABEL=<volsetid>,IBM;REC=-oddvalue,,F,ASCII;NOBUF
:FCOPY FROM=file.grp.acct;TO=*T;EBCDICOUT

Let us assume that the file has a record size of 11 bytes. You will receive the following message:

HP32212A.03.24 FILE COPIER (C) HEWLETT-PACKARD CO. 1984
*200*WARNING: FROMFILE RECSIZE IS 11 BYTES, TOFILE RECSIZE IS 12 BYTES
CONTINUE OPERATION (Y OR N) ?y

The above message can be ignored because if the utility TAPESCAN is run to check the file record size, you will notice that the record size is 11 bytes (see TAPESCAN example below).

3) :FILE T;DEV=TAPE;LABEL=label,IBM;REC=-oddvalue,,F,ASCII;MR
:FCOPY FROM=file.grp.acct;TO=*T

Let us assume that the file has a record size of 11 bytes. You will

receive the following message:

```
HP32212A.03.24 FILE COPIER (C) HEWLETT-PACKARD CO. 1984
*200*WARNING: FROMFILE RECSIZE IS 11 BYTES, TOFILE RECSIZE IS 12 BYTES.
CONTINUE OPERATION (Y OR N) ?y
```

Use the TAPESCAN utility to verify the record length of the file on tape.

Example:

```
:RUN TAPESCAN.PUB.TELESUP

ENTER THE LISTING DEVICE ( * FOR $STDLIST) *
IS THIS A LABELED TAPE (Y/N) ? N
WHAT DEVICE IS YOUR TAPE ON? 7
DO YOU WANT ALL RECORD LENGTHS LISTED? Y

DO YOU WANT TO PRINT THE FIRST RECORD OF EACH FILE ? N

RECNUM        RECORD LENGTH IN BYTES

    1:        11      11      11      11      11      11

END OF FILE  1.............6 RECORDS WITH      0 PARITYS
SMALLEST RECORD     NUMBER=1        LENGTH=11
LONGEST RECORD      NUMBER=1        LENGTH=11

END OF FILE  2.............0 RECORDS WITH      0 PARITYS
DOUBLE END OF FILE ENCOUNTERED
CONTINUE? NO  ( To end program answer NO)

                * * * * * * * * * *
```

Q. How can I squeeze a big file on a IBM labeled tape so that it takes just one reel? I am using fcopy to get the file to tape.

A. In order to squeeze a big file on a IBM labeled tape, the file blocking factor needs to be increased. thus reducing intergaps between blocks.

Example:

If you have a big file with record size=80 bytes, blocking factor=3, and size=200,000 records, in order to fit the file on a tape increase the blocking factor to 30:

```
:FILE T;DEV=TAPE;REC=-80,30,F;LABEL=<volsetid>,IBM
:FCOPY FROM=bigfile;TO=*T;EBCDICOUT
```

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