SYSTEM MANAGERS SELF HELP PROCEDURES

by JOHN VEGA/SE

I. KNOWING YOUR SYSTEM .....WHAT MPE VERSION ARE YOU ON

The operating system, MPE, has really been active in the last couple of years. Different versions of MPE were introduced with such vigor that most customers found it very difficult to keep up with the various versions introduced. Issue Number 30 of the communicator finally addresses the situation and suggests a uniform method of identification.   Using the convention described by COMPUTER SYSTEMS DIVISION (CSD) I will add a small amendment to the scheme they suggest. Q-MIT is definitely DATE CODE 2244, although the v.uu.ff is slightly different than the C.01.00 suggested. The v(version), uu(update) and ff(fix-level) is changed for your version of Q-MIT to be C.B1.00. This means your version of "Q" has been updated twice (C.A1.00 and C.B1.00). I've included the article by CSD for your reading pleasure.

BENIFITS OF THE "Q" RELEASE

Issue 30 of the COMMUNICATOR gives a brief run down of the enhancements available in the "Q" release (or should I say C.B1.00). Just to hit the high points: Enhanced STORE facility, V/PLUS (VIEW) local forms storage, and several other improvements.

TAPES IMPORTANT TO YOU

As a SYSTEM MANAGER you should keep track of several important tapes.

Here is a list of tapes you must safeguard:

OFFICIAL COLD LOAD AND SUBSYSTEMS TAPE....This tape is generated when you are updated to your current level of software. You should rely on this tape to restore any system software. For instance, somehow EDITOR doesn't work as it used to. You would RESTORE the EDITOR file from this tape. You can also use this tape to overlay MPE. By performing a COLDLOAD from TAPE using the UPDATE option only MPE is overlayed. This may be necessary if the current PROPAGATED OFFICIAL COLD LOAD TAPE needs to be recreated.

PROPAGATED OFFICIAL COLDLOAD TAPE....This tape is your current COLD LOAD TAPE. In the event of a SYSTEM INTERRUPTION you would perform a COLDSTART from this tape using the COLD OPTION. Procedures for keeping this tape current are in the section on PROPAGATION.

DISC UTILITY SUBSYSTEM TAPE (DUS)....This tape contains the tools which your CUSTOMER ENGINEER (CE) will use to diagnose system and peripheral problems. This tape will be re-created each time your system is updated to a new revision of MPE SOFTWARE.

II. THE OFFICIAL COLD LOAD TAPE

Each time another set of operating system software becomes available from the factory I will schedule approximately two hours to update your system to the new version. To ensure that the update proceeds properly, I will ask that a certain amount of space is available on disc (typically 10,000 contiguous sectors) and that your system is fully backed up.

The update concludes with the generation of an important tape. We will call this tape the "OFFICIAL COLD LOAD TAPE".

Having created this tape immediately after loading the new operating system we are assured that it contains data of the highest integrity. We can appreciate the importance of knowing software (all those combinations of 1's and 0's) has high integrity when we are confronted with a problem. To be able to tell whether the problem is caused by "HARDWARE" or "SOFTWARE" can be as simple as a "COLD LOAD" from the "OFFICIAL COLD LOAD TAPE". What this cold load establishes is that our software base is as good as it was when I originally performed the update.

The contents of this so called "OFFICIAL TAPE" necessitates some further discussion. Since we are dealing with several components when we speak of the "OFFICIAL COLD LOAD TAPE" we need to know what the components are.

PROPAGATION of the "OFFICIAL COLD LOAD TAPE"

To propagate means to pass along or continue. If we view the "OFFICIAL COLD LOAD TAPE" we find the components to be: MPE, SYSTEM TABLES, I/O CONFIGURATION, SUBSYSTEM FILES and DIAGNOSTICS. In the development of a computer installation we may have a need to change two of the components which make up the "OFFICIAL COLD LOAD TAPE" (system tables and the I/O configuration). How do we maintain or "PROPAGATE" that all important "OFFICIAL COLD LOAD TAPE" before these changes occur? With minimal effort the propagation can become second nature. Whenever a need arises to change either system tables or the I/O configuration think about "propagation". First, "COLD LOAD" from the "OFFICIAL COLD LOAD TAPE" using the "COLD" option. This will overlay the current MPE, SYSTEM TABLES and I/O CONFIGURATION on disc so that you are assured they're as good as they can be. Now, make your changes

to the system tables or I/O configuration via "SYSDUMP".

The tape created by "SYSDUMP" must now be used to "COLD LOAD" the system with the "COLD" option. This brings those changes made during "SYSDUMP" onto the system disc and "INITIAL" builds MPE in memory with those changes.

That same "SYSDUMP TAPE" is now your "PROPAGATED OFFICIAL COLD LOAD TAPE" and should be treated with respect. You would now retire the original "OFFICIAL COLD LOAD TAPE" to the archives. Any future changes to the system tables or I/O configuration would necessitate duplicating this process once again. Only now the "OFFICIAL COLD LOAD TAPE" is the "PROPAGATED OFFICIAL COLD LOAD TAPE".

By using these guidelines you will help HP help you. Without proper propagation you cannot feel confident that the software originally installed is of the high integrity you expect from HEWLETT-PACKARD.

ADDITIONAL MEASURES

Now that we propagate our official cold load tape properly, you might ask why it is necessary to keep the "ORIGINAL OFFICIAL COLD LOAD TAPE". If for some unknown reason your alternate system manager made some changes to either the system tables or the I/O configuration without propagating, or the propagated official cold load tape you normally use to cold start your system mysteriously disappears, what then? Since you have your "OFFICIAL COLD LOAD TAPE" you can start the propagation process all over again by performing a "COLD LOAD" from the "OFFICIAL COLD LOAD TAPE" using the "UPDATE" option. This overlays MPE on disc with MPE from tape but the sytem tables and I/O configuration are not changed. Once the system comes up you can perform a sysdump to generate a "PROPAGATED OFFICIAL COLD LOAD TAPE"

SPECIAL CONSIDERATIONS

As a system manager I would perform one additional step after I am updated to the current revision of the operating system. I would take the "OFFICIAL COLD LOAD TAPE" and archive it immediately. Then, I would generate a "FUTURE DATE SYSDUMP" which would carry the name "OFFICIAL COLD LOAD TAPE" (since I

create this future date sysdump immediately after my system is updated it is identical to the archived version with the exception of not having any subsystem or diagnostic files). Now I have two copies of my current "OFFICIAL COLD LOAD TAPE", just in case. Additionally, I would always keep the "OFFICIAL COLD LOAD TAPE" and the "PROPAGATED OFFICIAL COLD LOAD TAPE" from the previous operating system I was on just for the remote chance that the new operating system didn't perform properly.

If your system implements user procedures in the "SYSTEM SL" the management of the "OFFICIAL COLD LOAD TAPE" is slightly different. The propagation in this case would begin right after I create the "OFFICIAL COLD LOAD TAPE".

USE OF THE "OFFICIAL/PROPAGATED COLD LOAD TAPE"

Whenever there is a possibility of a subsystem being corrupt you would use the "OFFICIAL COLD LOAD TAPE" to restore that subsystem (i.e. COBOL acts strange after a power failure).

Whenever there is a system interruption (power failure, system failure or system hang) you would use the "OFFICIAL COLD LOAD TAPE" or the "PROPOGATED OFFICIAL COLD LOAD TAPE" to "COLD LOAD" your system.

On a periodic basis you would use the "OFFICIAL COLD LOAD TAPE" or the "PROPAGATED OFFICIAL COLD LOAD TAPE" to "COLD LOAD" your system to insure MPE, SYSTEM TABLES and I/O CONFIGURATION have a high degree of integrity.

III. STORE/SYSDUMP TAPE VALIDATION ..... VALIDATE PROGRAM

The whole approach to saving files is something we can never ignore. The use of SYSDUMP to perform this function is one method used by most customers. We all understand that SYSDUMP is merely a STORE with extra information (OPERATING SYSTEM, etc) and in most cases SYSDUMP generates several tapes which we refer to as a backup TAPE SET.

If SYSDUMP completes with no errors one would assume we have a good tape set which could be used if a system reload necessary. This assumption is not totally correct. The HP3000 doesn't check to make sure the data which it sends to the tape drive is in fact what was written. This means the SYSDUMP tape set may not be readable by the system. Of course, if you're in the process of RELOADING your system this situation would be catastrophic.

The possibility of bad data written to tape can be the result of many factors (dirty tapes, poor quality tapes, dirty transport path in the tape drive or hardware failure). Yet, when a tape problem occurs it is typically in the middle of some critical situation (like a RELOAD).

To avoid the frustration (and possible loss of data) one should always verify any STORE which is critical (like a SYSDUMP before a scheduled RELOAD) or any other STORE operation where an error cannot be tolerated. VALIDATE is ideal for this purpose.

VALIDATE will produce a listing of files which are stored on a tape and terminate if an error is encountered. Validate doesn't check the data on tape against the data on disc, but it does check for parity errors, sequence of file marks and size of records which make up the files. These checks and a view of the listing VALIDATE produces for proper file, group and account names should give you confidence that the data on tape can be read by the system.

I recommend VALIDATE be used on any tape set that will be used for RELOAD purposes. If VALIDATE finds an error it will abort or be apparent from the listing.

IV. LOG FILE MANAGEMENT ..... THE LOGERR UTILITY

The idea behind managing log files is to allow the customer to help him/herself. The data stored in the log files is of little

use to anyone if the output is difficult to understand, therefore I propose the following strategy for managing these files.

Many times you can tell when your system is getting ready to fail. I contend that if you review your log files (with LOGERR) weekly and establish a known frequency of errors that exist you can use this base knowledge to determine if a device failure is waiting to occur (if you normally have three disc errors logged a week and all of a sudden you see ten logged, this should alert you of a possible abnormallity). Normally the error count will continue to increase until either a DISC I/O ERROR or system failure results. Some disc errors are also normal (like after a power fail).

For the tape drive, if errors increase you can take proper action before a failure results. Tape errors can be caused by improper cleaning, old tapes, or possibly a physical hardware problem with the tape drive.

Much time can be saved by effectively using the stream facility. It also saves us from having to explain the dialog which takes place. A utility in the TELESUP ACCOUNT will help in this area (IOERR).

V. SYSTEM FAILURE AND RECOVERY

I am often asked by customers when they can expect their next preventative maintenance (PM) visit on their hardware. I respond by asking when their last PM took place and emphasize that it is to their benefit to ensure the PM takes place on a periodic basis. Other components which can make a difference include: proper power conditioning equipment to ensure good clean power is fed to your system, a pleasant operating temperature (typically slightly cooler than you'd like), humidity control (especially helpful in the printer area) and a clean computer room (dust is bad).

Understanding the options which are available when a system backup takes place can also be of help. I would always perform SYSDUMPS specifying "DUMP FILE SUBSETS". This option tells the system the order in which to store file sets. Place the most important file sets before specifying all other files (@.@.@). After a failure, if a reload is necessary, you would perform a RELOAD (ACCOUNTS) followed by a RESTORE of @.@.@. This would allow you to begin work on those important file sets, which are a subset of all the files on the system, immediately after they are restored.

Remember the section on LOG FILE MAINTENANCE? The listing produced by LOGERR is very helpful in prediction of a hard failure (system failure). Another helpful program is MEMLOGAN. This utility reads the MEMLOG file and gives you a list of memory errors which have been corrected. To run MEMLOGAN you must be logged onto PUB.SYS. For more information on MEMLOGAN see the MPE SYSTEM UTILITIES MANUAL.

What happens if your not backed up and a failure occurs? Rarely does a system failure occur right after a normal full system backup. This being the case we need an approach to recover work in progress. SADUTIL is a handy supported utility which allows you to read files from disc and write them to tape when MPE is not functioning? SADUTIL is documented in the MPE UTILITIES MANUAL and runs stand alone (doesn't use MPE). This utility should be used before you need to depend on it so that procedures are well in place. How about dumping memory? On Series II/III systems there is microcode which copies memory to tape (memory dump) when certain buttons are pushed. On the HP-IB systems a file called SDFCOM lives in the PUB group of the SYS account which contains commands that determine what happens when DUMP is typed or the DUMP BUTTON depressed. This file can be accessed using the EDITOR. Once modified and kept as a permanent file this file can be used within the SYSDUMP dialog to update the version of "SDFCOM" which is on the SYSDUMP tape. A COLD START from this SYSDUMP tape will incorporate the new SDFCOM file on the system disc. The procedure to modify the SDFCOM file is listed in the CONSOLE OPERATOR'S GUIDE (Appendix O). The available commands interpreted by the SDFCOM (software dump facility) are listed in the same Appendix (O2). When viewing your particular SDFCOM file in the EDITOR make sure you understand what it will cause the system to do. When the first command in the SDFCOM file is a HALT your system will HALT when DUMP is typed or the DUMP button is depressed. Once this occurrs you must either depress the RUN button or type "RUN" at the console (followed by a carraige return) to allow the software dump facility to continue.

I recommend that the "HALT" be taken out of the SDFCOM file. With this done whenever DUMP is typed or the DUMP

BUTTON depressed a DUMP will occur (assuming LDEV 7 has an additional class name of DDUMP). I set up all my HP- IB systems with two commands in the SDFCOM file: DUMP and WARMSTART. Remember to use PROPAGATION for changes to the SDFCOM file. That is: COLDSTART from the PROPAGATED OFFICIAL COLD LOAD TAPE then make the SDFCOM file changes using the EDITOR, perform a SYSDUMP to place the new SDFCOM file in the MPE portion of the SYSDUMP TAPE, and finally COLDSTART from this SYSDUMP tape. This newly created SYSDUMP tape should be labeled as the latest PROPAGATED OFFICIAL COLD LOAD TAPE.

FAILURE RECOVERY

After a system failure, halt or hang an accurate list of environmental and visual indicators should be made. In the environmental area look for: power outages, temperature fluctuations, and static. Visual indications would include questions like: Are all the discs on-line and is the system in a run or halt state. Also copy any messages which were printed at the console prior to the system interruption.

Take a memory dump by either depressing the proper buttons on the SERIES II/III or by typing DUMP or depressing the DUMP BUTTON on HP-IB systems. The tape created should be dated and labeled with the environmental and visual indications.

At this point you're ready to begin the recovery process. A WARMSTART should be used to recover any spoolfiles. Use the "SPOOK" utility (UTILITIES MANUAL) to copy any spoolfiles to tape. Next, SHUTDOWN the system and COLD START from the PROPAGATED OFFICIAL COLD LOAD TAPE to ensure MPE is stable after the failure. After the COLD START has completed we can run SPOOK again to retrieve the spoolfiles previously stored to tape.

If the WARMSTART fails, this implies that something within MPE was destroyed by the failure. Your next step is to try to bring the system up from the PROPAGATED OFFICIAL COLD LOAD TAPE. Suppose the COLDSTART also fails? Before even considering a RELOAD try the COLDSTART again. If this still fails try the COLDSTART from the most recent SYSDUMP tape set.

If all the above gives no results a RELOAD is necessary. Before doing anything you might consider calling PICS for consultation. At this point you will lose all the work accomplished since the last backup unless you use the SADUTIL program. This stand-alone utility will save files to tape when MPE is inoperable. Using the first reel from the most recent backup perform the RELOAD specifying the ACCOUNTS OPTION. This will cause the entire accounting structure to be rebuilt with no user files restored.

If SADUTIL was used you must first restore the RECOVER2 utility (described in the MPE UTILITIES MANUAL) to read the files stored to tape by SADUTIL. This utility is on the ORIGINAL OFFICIAL COLD LOAD AND SUBSYSTEMS TAPE created for you when you were updated to your current version of MPE. Finally, you would use the RESTORE command to RESTORE *T;@.@.@;KEEP;OLDATE. This restore should start from the most recent SYSDUMP tape set and end with the last full SYSTEM BACKUP. If there are greater than 4000 files on your backup tape set, you must also use the FILES= parameter.

A final thought on failure recovery has to do with temporary file space. After a system interruption occurs a RECOVER LOST DISC SPACE should be scheduled. The time involved to perform this function depends on the number of files on your system. This recovery takes 5-10 minutes for every 1000 files. It is best to perform the recovery at the end of the day typically after the system backup. After the backup you would SHUTDOWN the system and COOL START with RECOVER LOST DISC SPACE. Recovering lost space will free up temporary space ($OLDPASS FILES or SCRATCH FILES) which was not released prior to the system failure. Performing this recovery will rebuild the FREE SPACE BIT MAPS on all disc drives from the information contained in the MPE FILE LABEL. If a FILE LABEL is not as it should be, the RECOVERY will alert you of the files in question and purge them from the system. Using RECOVER LOST DISC SPACE after a failure should give you an additional feeling of confidence that your system files and directory are safe.

VI. PERFORMANCE CONSIDERATIONS

To achieve the performance your system is capable of requires a dedicated effort. You must pay attention to specific resources that your applications require and organize a plan to maintain these resources. You can be guarenteed that not managing your resources can eventually result in poor system performance and/or system problems.

DISC FREE SPACE

The FREE2 utility should be used on a weekly basis to manage free space and monitor fragmentation. When discs are greater than 80% full some form of management should take place. If you are in a multi-disc environment each disc should carry a portion of the system file load. The best way to ensure a balance is to keep sufficient space available on each disc. Day to day activity will fragment the available free space. I suggest the use of VINIT to manage fragmentation on a weekly basis. After performing a full system backup VINIT can be used to CONDENSE each disc (VINIT is documented in the MPE SYSTEM UTILITIES MANUAL). Once a month a full system reload should be performed. Use the ACCOUNTS OPTION when reloading followed by a RESTORE of all files. Always verify the tape set you plan to reload from (see the section on STORE/SYSDUMP TAPE VALIDATION).

FILE PLACEMENT

Distribution of files can make the difference between good and great performance. A balanced access for files is what we would like to achieve with file placement. Placing files that are accessed together on different discs will balance the I/O load. A good example is the MASTER/DETAIL relationship in IMAGE DATA BASES. Placing the MASTER on one disc and the DETAIL on another will minimize head contention thus improving performance. Using the MPE STORE command, files can be written to tape, then using the MPE RESTORE command with the DEV= parameter files are brought back into the system to a specific disc drive. Specifying a specific LDEV # or UNIQUE CLASS NAME will cause file placement to occur (the supported program LISTDIR2 or the LISTF ,-1 command can be used to determine which disc a file is located on). Once file placement is achieved it is critical to perform RELOADS using the appropriate option. Using the COMPACT OPTION will place files on the same LDEV they were originally on. Using the SPREAD OPTION will place files on the same CLASS NAME

they were originally on. If a RELOAD ACCOUNTS is choosen followed by a RESTORE @.@.@ those files restored to either a unique CLASS NAME or a particular LDEV # , will again be placed on those devices. All other files which have DISC as their file location will be SPREAD among the devices with CLASS NAME DISC (similar to the SPREAD OPTION).

Class names are also important for allocation of temporary space used for VIRTUAL MEMORY and SPOOLFILES. VIRTUAL MEMORY should be allocated on each disc equally. When allocation is set up in the SYSDUMP dialog you must specify how much VIRTUAL MEMORY will be assigned to each disc (this can be done by CLASS NAME or LDEV #). SPOOLFILE space is assigned to discs with class name SPOOL. Similar to RESTORE (which restores files by default to class name DISC), SPOOLFILE space will be spread to discs in the same ratio which the CLASS NAME is found for each disc. So if you give LDEV #2 the CLASS NAME SPOOL twice two spoolfiles would go to LDEV #2 before another disc would be searched for CLASS NAME SPOOL. The same cyclic pointer approach is used when files are restored with the RESTORE COMMAND (i.e. if a disc has a class name of DISC a file will be restored to it, if CLASS NAME DISC appears multiple times multiple files will be restored to it before another device is searched for CLASS NAME DISC.

Since files can be assigned by using the DISC CLASS NAMES DISC and SPOOL a scheme can be developed to reduce the number of accesses to the SYSTEM DISC (LDEV #1). In a multiple-disc system all discs except the LDEV #1 should be configured with CLASS NAME SPOOL AND DISC. This keeps spoolfiles and files being restored from going to the system disc. Place files which are rarely used on LDEV #1 so it is free from unnecessary accesses.

SYSTEM TABLES

Configuring MPE TABLES unnecessarily high will waste available memory. Using the guidelines in APPENDIX C of the SYSTEM MANAGER/SUPERVISOR MANUAL to configure TABLE SIZES is a good starting place. The unsupported utility TUNER4 can also be used to get a dynamic view of how SYSTEM TABLES are being utilized. If there is program development going on I also recommend that the CODE SEGMENT LIMIT be set to 8K. This will encourage programmers to segment their code, resulting in better memory utilization. DATA BASES

Using a DATA BASE on the HP3000 makes good sense. Once the DATA BASE has been developed careful attention should be given to the placement of the file sets which make up the DATA BASE. To reduce head contention MASTER AND DETAIL SETS should be located on different disc drives. Periodic review is also necessary to assure data set capacities are adequate. Prime numbers should be used for MASTER SET CAPACITIES and data sets should be less than 80% full. DATA BASE maintenance should also be performed periodically. The utilities DBUNLOAD and DBLOAD allow restructuring of the DATA BASE so that a performance improvement can be realized. When a DBUNLOAD CHAINED is performed entries on the primary path are written to tape in a contiguous fashion. Using DBLOAD will now load the data into each set as it was written to tape. Future accesses to your data by the primary path will now occur faster than they did before since all data entries are within contiguous blocks. If your site has the RAPID products the DICTDBU (unload) and DICTDBL (load) accomplish the same functions as DBUNLOAD and DBLOAD with greater sophistication. There is also a DICTDBA utility which provides AUDIT capability.

VII. HELPFUL UTILITIES

There are a large number of UTILITIES available which can be very helpful in managing your system. The HP INTER-NATIONAL USERS GROUP produces a set of UTILITIES (USERS CONTRIBUTED LIBRARY) available to its members. I've decided on a select group of UTILITIES which I feel should be on every HP3000 system. The majority of the UTILITIES I've included were written by HP personnel to solve problems which the current set of SUPPORTED UTILITIES does not address. HP SUPPORT DIVISIONS are in the process of reviewing those UTILITIES which they feel could benefit the expanding customer base they will be in an account called TELESUP.

HPUNSUP GROUP IN THE SUPPORT ACCOUNT

The UTILITIES I will include on your system are UNSUPPORTED. The HPUN-SUP GROUP should be given special capabilities to allow running of the various programs. Place a password on the SUP-PORT ACCOUNT and review the FILE ACCESS SECURITY for each of the files so you understand who has the ability to READ and EXECUTE them. Create the GROUP like this: NEWGROUP HPUNSUP;CAP=IA,BA,PH,PM,MR. Some of the programs in this GROUP should not be executed until you've discussed the problem with your ACCOUNT SE or PICS.

UTILITY DOCUMENTATION

BADLABEL....(run only when asked to do so)....BADLABEL, checks each file label on the system and produces a tape which is sorted and checked for any file extents which point to other file extents. It then produces a listing, to $STDLIST, of any bad file labels. Using BADLABEL with the NOTAPE entry point will cause the cross reference of file extents to be bypassed. To run BADLABEL without a tape you would enter: RUN BADLABEL,NOTAPE.

BULDACCT....Program to recreate the AC-COUNTING STRUCTURE of your system. It is useful for keeping your AC-COUNTING STRUCTURE in a job stream format.

BULDACTD....Documentation on running BULDACCT. DBLOADNG....A program which displays information on DATA BASE loading. Read DBLOADOC for details.

DBLOADOC....Documentation on the running and interpretation of DBLOADNG.

FLUTIL3....(run only when asked to do so)....File label patch utility allows the user to modify the contents of a file label. DIRECPURGE will allow bad file labels to be deleted from the system directory. File space taken up by the file deleted is not returned to the system. A RECOVER LOST DISC SPACE is needed to retrieve the lost space.

LOGAUDIT....A program to view the contents of a tape created by LOGSNAP. This program will also view LOG FILES on disc. Events viewed are the same events LISTLOG2 views (LISTLOG2 is documented in the SYSTEM UTILITIES MANUAL).

LOGERR....A program which interrogates LOG FILES for I/O ERRORS.

LOGMESS....This message file is needed for LOGERR to function. It should be moved to PUB.SYS for LOGERR to function.

LOGSNAP....A program which copies LOG FILES to tape.

PSCREEN....A program to copy a terminal's memory to the line printer. It's useful in documenting error messages which are printed on a terminal.

RESTORE....A program which allows you to restore files from a previously created STORE TAPE into your current log on group and account.

SYSINFO....A program which allows you to view the system I/O configuration and tables without using SYSDUMP. It allows easy printing of configuration information to the printer.

TAPETEST....A program which writes all 1's to tape and reports when it cannot read the 1's it previously wrote. This program provides a rough check for tape quality.

TUNER4....A program which gives a dynamic view of system table usage.

VALIDATE....A program which reads a tape created by STORE or SYSDUMP and reports the directory and file labels read.

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