

North American Response Center

HP 3000 APPLICATION NOTE #35

HPDESK IV

Script Files, FSC, and Installation Considerations



 **HEWLETT
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HPDESK IV

This Application Note contains several articles on HPDESK IV, keying on topics that are especially applicable to new DESK IV user. HPDESK is Hewlett Packard's electronic mail product, allowing users to easily communicate with each other on the same 3000, between 3000s, and with "foreign" electronic mail packages.

Two of the articles show sample SCRIPT files for use with HPDESK IV. SCRIPT files allow users to set up command-type files which process a series of HPDESK, MPE, or SCRIPT function commands automatically. SCRIPT files are similar in function to MPE UDC files, or TDP USE files, but also provide many other features, such as application integration with HPDESK. Any user can create a SCRIPT file in their WORK AREA, just as they would create any other TEXT item (See Chapter 2 of the *Programmatic Access to HPDESKMANAGER* manual for DESK IV). Script files are then executed by typing in:

```
SCRIPT "scriptfilename"
```

SCRIPT files can also be installed for system-wide use within HPDESK.

The third article discusses the use of the FOREIGN SERVICE CONNECTION (FSC) feature built into HPDESK. It is this feature which allows HPDESK to communicate with "foreign" electronic mail systems, such as IBM's PROFS and DEC's ALL-IN-ONE.

Finally, there is an article describing some of the common problems encountered when installing HPDESK IV on a 3000.

B.00.00 - USING DESK IV SCRIPT FILES FOR MENU FUNCTIONS

One of the powerful new features in HPDESKMANAGER IV is the SCRIPT file capability. Included is a sample SCRIPT file which presents an HPDESK user with a menu of program choices they can run from DESK. You can use this sample as a building block to create your own SCRIPT file. To use this particular example, the user needs MPE capability.

```
&COMMENT
&COMMENT
&COMMENT
&COMMENT THIS SCRIPT IS AN EXAMPLE OF HOW TO USE HPDESK IV SCRIPT FILES TO
&COMMENT PRESENT A USER WITH A MENU OF SELECTIONS. A LOT MORE COULD BE
&COMMENT ADDED TO THE LIST. ALSO, INDIVIDUAL SCRIPTS OF THIS TYPE
&COMMENT COULD BE INSTALLED FOR DIFFERENT USER GROUPS, DEPENDING ON WHAT YOU
&COMMENT WANT DIFFERENT USERS TO BE ABLE TO ACCESS. TO USE THIS PARTICULAR
&COMMENT EXAMPLE, THE DESK USER MUST HAVE MPE CAPABILITY.
&COMMENT
&COMMENT
&COMMENT
$START
&PRINT
&PRINT HERE IS A LIST OF THE PROGRAMS YOU CAN RUN:
&PRINT
```

```

&PRINT
&PRINT          1. QUERY
&PRINT          2. LISTDIR5
&PRINT          3. EDITOR
&PRINT          4. TDP
&PRINT          5. SPOOK5
&PRINT
&PRINT
&SAVE JONES <PROMPT "ENTER THE NUMBER YOU WISH TO RUN, OR 99 TO EXIT: " >
&SAVE JONES <QUOTE <VAR JONES>>
&FORWARD EXIT <STREQUAL <VAR JONES> "99">
&FORWARD QUERY <STREQUAL <VAR JONES> "1">
&FORWARD LISTDIR5 <STREQUAL <VAR JONES> "2">
&FORWARD EDITOR <STREQUAL <VAR JONES> "3">
&FORWARD TDP <STREQUAL <VAR JONES> "4">
&FORWARD SPOOK5 <STREQUAL <VAR JONES> "5">
&PRINT
&PRINT
&PRINT
&PRINT PLEASE ENTER A NUMBER FROM 1 - 5, OR 99 TO EXIT!!!!
&PRINT
&PRINT
&PRINT
&BACK START
$QUERY
:RUN QUERY.PUB.SYS
&BACK START
$LISTDIR5
:RUN LISTDIR5.PUB.SYS
&BACK START
$EDITOR
:RUN EDITOR.PUB.SYS
&BACK START
$TDP
:RUN TDP.PUB.SYS
&BACK START
$SPOOK5
:RUN SPOOK5.PUB.SYS
&BACK START
$EXIT
&EXIT

```

DESK IV SCRIPT COMMAND <FIND>

One of the more misunderstood, yet most useful SCRIPT FUNCTIONS is the FIND function. This function is very useful for doing searches in your IN TRAY, OUT TRAY, FILING CABINET etc. The manual shows the syntax as follows:

```
FIND 0 (min parms) 4 (max parms) quo quo num num
```

The first parameter (which must be in quotes) is a word or words in the SUBJECT you wish to search for. It can be omitted by specifying (""). The second parameter is used to search for a certain creator. It also can be omitted with the ("") convention. The third parameter must be a number, and it specifies the starting item number to begin your search from. This item number refers to the number seen when the LIST command is issued, not the data base reference number. This parameter can not be omitted if using all four parameters (use 1 as a default). The last parameter is ITEM TYPE. See the file FILETYPE.PUB.HPOFFICE to see the various item types DESK recognizes.

For example, the following would search for an HPWORD document with the word DATABASE in the SUBJECT.

```
&SAVE BLAH <FIND "DATABASE" "" 1 1100>
```

Upon completion of this command, the variable named BLAH will contain the item number of the item found (as shown when you issue a LIST command). You could issue a READ <VAR BLAH> command, and READ the item just found. Note: If no item is found, 0 is returned.

The following example could be a useful alternative to the DESK IV FILING CABINET SEARCH feature. It can also be used in the IN TRAY, OUT TRAY, etc.

```
&PRINT
&PRINT
&PRINT This SCRIPT file allows you to do searches in your IN TRAY, OUT TRAY,
&PRINT PENDING TRAY, WORK AREA, or FILING CABINET. You can search on any of
&PRINT these criteria:
&PRINT
&PRINT 1. SUBJECT (one or more key words in the item subject)
&PRINT 2. CREATOR (last name is sufficient)
&PRINT 3. ITEM NUMBER to start the search on, within the area you are
&PRINT searching. This refers to the number printed next to the item
&PRINT when you issue a LIST command - not the data base item number.
&PRINT 4. ITEM TYPE - as found in the FILETYPE.PUB.HPOFFICE file
&PRINT
&PRINT
&PRINT
&SAVE SUB <MAKEQUOTED <PROMPT "Please enter SUBJECT to FIND (or RETURN): " "">>
&SAVE CRET <MAKEQUOTED <PROMPT "Please enter CREATOR to FIND(or RETURN): " "">>
&SAVE START <PROMPT "Please enter STARTING ITEM NUMBER (default is 1): " "1">
&SAVE TYPE <PROMPT "Please enter ITEM TYPE to search for (if desired): " "">
$EXEFIND
&SAVE ITEMNO <FIND <VAR SUB> <VAR CRET> <VAR START> <VAR TYPE>>
&FORWARD NOTFOUND <EQUAL <VAR ITEMNO> 0>
LIST <VAR ITEMNO>
&PRINT
```

```

&FORWARD OPTION <YESNO <PROMPT "Is this the required item (y/n)?:" "y" 1>>
$INCREMENT
&SAVE START <ADD <VAR ITEMNO> 1>
&BACK EXEFIND
&FORWARD END
$NOTFOUND
&PRINT
&PRINT SORRY...There are no more items meeting your criteria.
&FORWARD END
$OPTION
&PRINT
&PRINT
&PRINT What would you like to do with this item?
&PRINT
&PRINT      1. READ IT
&PRINT      2. PRINT IT
&PRINT      3. CONTINUE SEARCHING
&PRINT      4. GO HOME AND HAVE A BEER
&PRINT
&SAVE OPT <QUOTE <PROMPT "Please enter your choice:" "" 1>>
&FORWARD READ <STREQUAL <VAR OPT> "1">
&FORWARD PRINT <STREQUAL <VAR OPT> "2">
&FORWARD SEARCH <STREQUAL <VAR OPT> "3">
&FORWARD END <STREQUAL <VAR OPT> "4">
&PRINT
&PRINT
&PRINT PLEASE ENTER A NUMBER BETWEEN 1 & 4!!!!
&PRINT
&PRINT
&BACK OPTION
$READ
READ <VAR ITEMNO>
&PRINT
&BACK INCREMENT <YESNO <PROMPT "Do you wish to continue searching?:" "y" 1>>
&FORWARD END
$PRINT
PRINT <VAR ITEMNO>
&PRINT
&BACK INCREMENT <YESNO <PROMPT "Do you wish to continue searching?:" "y" 1>>
&FORWARD END
$SEARCH
&BACK INCREMENT
&PRINT
$END
&PRINT
&PRINT End of SCRIPT FILE.
&EXIT

```

BEGINNER'S GUIDE TO FSC



The FOREIGN SERVICE CONNECTION interface to HPDESK can be confusing for those approaching it for the first time. This article will attempt to clear up a few of the misconceptions that a novice might have concerning FSC.

The FSC interface exists in DESK so HP/3000 DESK users can communicate with users on "foreign" electronic mails systems (ALL-IN-ONE, PROFS, DISOSS) This is accomplished by delivering the message to a MPE file, instead of using DS/3000 to send it to another system. The message is output with a special header, called an ARPA header (ARPA is a standard interchange format recognized by most electronic mail packages), to allow processing by the "foreign system" when it arrives.

How does all this work? You must configure a FSC GATEWAY into HPDESK via MAILCONFIG. This is similar to configuring a remote DS COMPUTER gateway, However it has some additional fields. One of these fields is, the type of APRA format. Instead of a DS DEVICE or DS NODE, you fill in the name of an IPC file, created by you, the user. INTER-PROCESS COMMUNICATION files are used to pass information from one process to another.

After setting up the FSC gateway, the next step is to create a mail node for users to send to that gateway, and a route from the mail node to the FSC gateway.

When a user sends to someone configured on the foreign mail node, the message is processed by the MASTER TRUCK. This is the same as if it was being sent to another HP/3000. However, several other things happen. The ARPA header is attached to the message. DESK tries to convert anything in the message to ASCII text (a foreign system couldn't read an HPWORD document). Then, the MASTER TRUCK creates a file in the HPMAIL.HPOFFICE group with a E##### format. The digits represent the Julian date, and the time of day the "E" file was created. More than one message may be written to the same "E" file, so DESK separates the messages with an 8-bit FORM FEED. This does not interfere with a user placing a normal FORM FEED into a TEXT item and then sending it. The ASCII FORM FEED appears in hex as "C", whereas HPDESK uses an "8C" convention.

The final job of the MASTER TRUCK is to write to the aforementioned IPC file, with the name of the E##### file just created. At this point, HPDESK HAS COMPLETED ITS JOB. To transport the message to a foreign system, a software package separate from HPDESK must be used. This could be a HP supplied package, such as HPOFFICE CONNECT TO PROFS, or HPOFFICE CONNECT TO DISOSS, or it can be a user written application. Either way, the function is the same. The software must:

1. Read the IPC file (this could be done with a timed wait on the IPC file, or by a job logging on every X minutes, and reading it), noting the name of the E##### file in the IPC file.
2. Process the E##### file (separating the messages, if desired), and handle whatever type of datacomm link necessary to transport it to the foreign machine.

Incoming messages are handled in a similar fashion, the software package creates "E" type files, and posts a write to the DESK IPC file ARPAIPC.MAILDB.HPOFFICE. A special FSCARPA truck waits on this IPC file, and delivers any messages found to the DESK system, where it is handled the normal way (In DESK IV, this truck can be turned on and off with the MAILFSCARPAON, and MAILFSCARPAOFF commands, respectively).

The following is a test FSC gateway that simulates delivery to and from a foreign system.

1. Run MAILCONFIG, and create a FSC gateway called FSCGAT. Call the IPC file FSCIPC. Generally, the IPC file is placed in the HPMAIL.HPOFFICE group (DESK IV allows it to be put in another group). Use ARPA format (#2). Make the GATEWAY AVAILABILITY all "4"s, and AVAILABILITY all "4"s.
2. Create a test MAILNODE for the new FSC gateway, and call it FSCLOC/01.
3. Create a ROUTE from FSCLOC/01 to gateway FSCGAT.
4. Exit MAILCONFIG.
5. Sign-on as MGR.HPOFFICE,HPMAIL and BUILD the IPC file:

```
BUILD FSCIPC;MSG;REC=-80,,F,ASCII
```

6. Run HPDESK. For this simulation, your local MAILNODE is HP/01. Since this is a simulation, it will send a message to a local user "TEST USER", by sending it out through the FSC gateway to an E##### file, and then delivering it back into the local DESK system. SEND a message to:

```
TEST USER (HP/01)/FSCLOC/01
```

The number in parentheses is the foreign address, or the address that the message will be delivered to when it reaches the foreign system. For the simulation, it is the LOCAL mail node, since we are eventually going to deliver the message back into the local system. The message is sent to a mail node called FSCLOC/01, like any non-FSC message.

7. If a MASTER TRUCK is running, FSCIPC.HPMAIL.HPOFFICE will soon have an End of File of "1", and there will be a E##### file in the same group. You may want to FCOPY the E##### file to your screen to see what the ARPA header looks like. To FCOPY the IPC file, use the following convention to avoid a destructive READ:

```
:FILE BLAH=FSCIPC.HPMAIL.HPOFFICE;COPY
:FCOPY FROM=*BLAH;TO;HEX;CHAR
```

8. This is the point where the other software package takes over. For the simulation, the message is brought right back to HPDESK:

```
:FCOPY FROM=FSCIPC.HPMAIL.HPOFFICE;TO=ARPAIPC.MAILDB.HPOFFICE
```

The message is now ready to be processed by the FSCARPA truck.

9. In DESK IV, issue the MAILFSCARPAON command, and the message will be delivered to user TEST USER.

This simulation will help show the data flow into and out of the HPDESK/FSC interface, and also let you see the contents of a E##### file you created.

INSTALLATION PROBLEMS WITH HPDESK IV

Some problems that frequently occur:

SYMPTOM: A New installation on the initial MAILON and the Transport trucks are aborting with unresolved PTOp externals.

CAUSE: There is no data communications software installed. HPDESK on the initial Mailon will automatically bring up the transport system and will check in the HPDESK SL for DS segments, although it does not actually use them.

ACTION: 1. Modify the MAILON UDC so that it does not do a MAILMANON (it does not try to bring up the HPDESK transport system).

OR

2. Run SEGMENTER and add the PTOp intrinsicS. This adds the dummy DS segments.

```
-sl      sl.hpmail.sys
-usl     Ptopus1.hpmail.sys
-addsl   seg'
-exit
```

```
-usl     Ptopus1.hpmail.sys
-addsl   seg'
-exit
```

SYMPTOM: On the initial MAILON you receive an FSERR 93 SECURITY VIOLATION, usually seen from the DSMTRUCK job listing or at the console.

CAUSE: The LOCK access on the SYS and/or HPMAIL.SYS group must be set to ANY.

ACTION: Check the security and amend as necessary.

SYMPTOM: On the upgrade from HPDESK III to HPDESK IV, the local database load fails when streaming the DBCONV.HPMAIL.SYS job with:

FAILED TO WRITE BLANK NODE RECORD IMAGE CODE 16

CAUSE: This is because HPDESK IV adds a blank node record in the NODE dataset, it uses to initialize the NODE-NODE dataset.

ACTION: Use MAILALTLOCSTATS to expand the NODE dataset. The number of LOCATIONS and SUBLOCATIONS determine the number of records

in the NODE dataset. Then run CONVERT2.HPMAIL.SYS;LIB=G to complete the schema modification.

SYMPTOM: Unable to stream the DBCONV.MAILJOB.HPOFFICE. The error received is a database access error.

CAUSE: The jobstream expects the password of the database to be MAILSYS.

ACTION: Use PASSEdit to check the database passwords (or DBUTIL) they must be changed back to MAILSYS.

NOTE: Do not confuse the DESK3 to DESK4 conversion job with the IMAGE to TURBOIMAGE conversion program DBCONV.PUB.SYS. The conversion to TURBO must be completed prior to the HPDESK upgrade.

SYMPTOM: MAILON fails with the message that it is unable to build the files that it needs to complete the installation

CAUSE: The groups MAILSERV and MAILXEQ have not been built.

ACTION: Issue a REPORT @.HPOFFICE to check the above. If the groups are not there build them with defaults and issue a MAILON again.

SYMPTOM: NEW MAIL NOTIFICATION is suppressed, but no local mail is being delivered. When a mailoff or mailroomoff command is issued the mailroom remains in a "shutting" state.

CAUSE: The file MTELLIPC.MAILDB.HPOFFICE is full. This is because the file equate MTELLIPC.MAILDB.HPOFFICE=&NULL should be in the SUPRVISR.MAILJOB jobstream and not in the MAILROOM.MAILJOB jobstream as documented.

ACTION: Check the validity of the above and modify jobstreams. If the mailroom has hung contact the Response Center.

SYMPTOM: Every time that a MAILON is issued HPDESK starts the initial installation again. This would happen when the CUSTOM program is used to create SUBSYS tapes.

CAUSE: HPDESK checks for the existence of the CMDxxx and HLPxxx files when the MAILON is issued. If they are there then it starts the

installation and then installs the HELP system, for example, and then purges these files on completion.

ACTION: These files would need to be on the system to create an HPDESK SUBSYS tape. They need to be restored before running CUSTOM and allow for more time for HPDESK to be brought back into operation.

SYSPTOM: On issuing the MAILON, the error message "create Process Error 16" is displayed.

CAUSE: A program (usually mailroom or Tmanager) cannot be loaded.

ACTION: Use OPT or TUNER to see what your system limits are. This occurs when either the number of DST's or the amount of virtual memory is configured incorrectly.

The table below contains the minimum recommended configuration.

CST			
>=359	, 500 for Advancenet	(provisional	
CSTX			
>=512			
DST			
approx (200	+120	+50*(no of users)	
mpe	servers	Desk + hp slate + wordtext	+++
PCB	32	+10*(no of users)	
CST Block 20	+15	+20	
(ie maxno concurrent progs)			
VMEM	10Ksect	+12Ksect	+3K sect*(no of users) TOTAL
Max code seg	16384		
Max stack	31232		
Max XDS	32764		



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2	10/15/85	<i>Terminal types for HP 3000 HPIB Computers (superseded by note #13)</i>
3	4/01/86	<i>Plotter Configuration Guide</i>
4	4/15/86	<i>Printer Configuration Guide - Revised</i>
5	5/01/86	<i>MPE System Logfile Record Formats</i>
6	5/15/86	<i>Stack Operation</i>
7	6/01/86	<i>COBOL II/3000 Programs: Tracing Illegal Data</i>
8	6/15/86	<i>KSAM Topics: COBOL's Index I/O; File Data Integrity</i>
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29	6/01/87	<i>A Programmer's Guide to VPLUS/3000</i>
30	6/15/87	<i>Disc Cache</i>
31	7/01/87	<i>Calling the CREATEPROCESS Intrinsic</i>
32	8/01/87	<i>Configuring Terminal Buffers</i>
33	9/01/87	<i>RIN Management (Using COBOLII Examples)</i>
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**HEWLETT
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HP 3000 Questions Commonly Received by the North American Response Centers

Q. Sometimes when logging on to HPWORD/3000, I receive WPERR 371. Why does this happen?

A. One of the new features in HPWORD/3000 Version A.05.04 is WORKSTATION SECTION. This feature allows you to tell HPWORD what workstation you are using, rather than your actual LDEV number. This allows the use of any workstation configuration in WORDCONF by any user.

Since only one terminal ID can be used at a time, HPWORD stores the currently accessed terminal identifiers in the file LOCKDEV.WP.HPOFFICE. If you try to access a terminal identifier that is already in use, you receive the message:

WPERR 371 - THE TERMINAL IDENTIFIER IS ALREADY IN USE BY SESSION XXX

It is possible that this message is spurious. For example, you receive the error message, but no one else is running HPWORD. This can happen when you have had a recent system failure. It can be solved by restoring the file LOCKDEV.WP.HPOFFICE from a full system backup made prior to the system failure or by restoring the file LOCKDEV.WP2.HPOFFICE from the SUBSYS tape.

Q. If I send a message to 50 people, will there be 50 copies of that message in the Data Base?

A. One of the most important criteria when HPDESK was originally designed was to store only one copy of an item on disc, even if it has been sent to multiple people. Since IMAGE does not readily lend itself to such a requirement, it was necessary to build a hierarchical structure within the IMAGE data base structure. This was accomplished by using data to point to data.

Each item in the HPDESK LOCAL data base has an entry in the MANUAL master ITEM-HEADER. (If there is associated data with these items, such as TEXT, HPWORD, HPSLATE, etc., the ITEM-HEADER will have DETAIL entries in ITEM-CONTENT.) These entries are tied to user's IN TRAYS, OUT TRAYS, etc. via an entry in the DETAIL set ITEM-STRUCTURE. (This is the "data pointing to other data" referred to above). Thus, if you write a TEXT item and mail it to 50 people on your system, there is only ONE copy of this item in the data base, but it will have 50 DETAIL structure links pointing to it in ITEM-STRUCTURE. (These links take up very little disc space.)

Of course, any time one of those 50 people EDIT that item, a new copy is made, and it will take up additional space in the data base (ITEM-CONTENT).

Q. Why can't I do a serial unload on the <LOCAL> database?

A. SERIAL unloads are often useful to fix IMAGE Data Base problems such as broken chains. However, use of a SERIAL unload will destroy the internal HPDESK structure links in the LOCAL data base, resulting in people having multiple IN TRAYS, etc. In HPDESK, the POSITION of data on a chain is significant; HPDESK assumes that the first item under a USER FOLDER, is your IN TRAY, the second is the OUT TRAY, etc. A SERIAL unload/load does not maintain the original position of the data on the chain, thus, it can't be used for the LOCAL data base.

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A CHAINED unload/load can fix a broken chain if only one (forward or backward) pointer is corrupt away. If both are corrupt, a CHAINED unload/load will not fix a broken chain.

Actually, it is a good idea to do a CHAINED unload/load on the LOCAL data base from time to time even if you are not increasing the capacity or having chain problems. After a CHAINED unload/load, the DETAIL records on each chain are grouped contiguously (by PRIMARY path) on disc, thus giving optimum performance.

- Q. My IMAGE manual stresses the importance of making the capacity of my <MASTER> data sets a prime number. Why isn't this important in the HPDESK databases?
- A. The reason for using PRIME number capacities in MASTER data sets in IMAGE is to improve the distribution of the entries when they are HASHED, by avoiding synonym chains. In the HPDESK LOCAL data base, the main KEY value (ITEM- NUMBER) is always assigned in exact increments of 19, which just happens to be the most efficient method of distributing your KEYS when they are HASHED. Therefore, having a prime number capacity is not that important in the LOCAL data base. Of course, no HASHING algorithm is ever 100% perfect, so it is important to keep plenty of free space in the ITEM-HEADER to assist the process.