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Series 100/DSN/LINK Reference Manual

HEWLETT PACKARD

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Chapter 1

INTRODUCTION

This manual will introduce you to Series 100/DSN/LINK software for data communications.

Data communications is simply transmitting information from one point to another. Using Series 100/DSN/LINK, for example, you may access information in an HP 3000 data base and transfer it to your Series 100 Computer for use in a local report. Conversely, you could prepare a document locally, then transfer it to the HP 3000 for distribution to other users.

This manual is structured from the basic to the more complex. Series 100/DSN/LINK is described in this chapter, along with software and hardware requirements and reference documents. The second chapter discusses preparation of both the Series 100 Computer and the HP 3000 for data communications, while Chapter 3 provides instructions for running Series 100/DSN/LINK. The remaining chapters discuss features of Series 100/DSN/LINK, such as:

- transferring files between a Series 100 Computer and the HP 3000.
- recording interaction with the HP 3000 to a local printer, a local file, or both.
- creating and executing command files.
- transferring files to and from other host computers, as well as between two Series 100 computers.

Appendices include a list of error messages, detailed information about command files, and notes on transferring files from other Series 100 applications (such as Series 100/Word, etc.).

What Is Series 100/DSN/LINK?

Series 100/DSN/LINK (also referred to as DSN/LINK) is a data communications program that is designed to take advantage of the friendly user interface on the Series 100 Computer. (DSN refers to Hewlett-Packard's ''Distributed Systems Network.'')

Screen-labeled function keys guide you through steps to perform the following:

- First, and most importantly, DSN/LINK is used to transfer files to and from the HP 3000. (DSN/LINK may also be used for simple file transfers with other host computers using command files) and to transfer files between two Series 100's.

- DSN/LINK is used to record interaction with the host computer to a local printer, a local file, or both.

- DSN/LINK may be used to customize interfaces to host programs (such as HPMAIL on the HP 3000), as well as transferring files in batch mode (transferring groups of files at one time) using the command file capability.

  (A command file is a file which you create using an editor or word processing program. It contains pre-defined computer commands. These pre-defined commands may be found in Appendix B for the Series 100, along with sample command files; host computer commands are available in your host system reference documentation.)

DSN/LINK also provides error checking with retransmission, binary file transfer, access to local disc directories, and improved capabilities for printing local programs on an HP 3000 printer.

Hardware Requirements

The following hardware and accessories are required:

1. An HP 3000 (or other host computer)

2. A Series 100 Computer, configured with an HP disc drive

3. A local HP printer (if you wish to record any data)

4. Connecting cables, including the RS-232 serial link

NOTE

While DSN/LINK runs under the CP/M® Operating System, an RS-232 serial link is required to connect to the Series 100 Computer in order to communicate with the host computer. The RS-232 serial link is an industry-standard, 25-pin asynchronous connector (standardized by the EIA—Electronics Industries Association of America). This link interfaces data transmission between systems, modems, and peripherals (such as terminals, plotters and printers).

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Software Requirements

In order to transfer files to or from an HP 3000 using Series 100/DSN/LINK, there must be some additional capabilities installed in both the Series 100 Computer and the HP 3000. The following software is required to provide these capabilities:

1. A Series 100/DSN/LINK Application Disc, which includes:

   a. The HP 3000 file transfer program (entitled ''LINK100''), which allows the HP 3000 to communicate with the Series 100 Computer in the format required.

NOTE

When transferring files to a host computer other than an HP 3000, you must either use command files or prepare a special file transfer program for the host computer. (Refer to the following chapters for more information.)

---

   b. A special utility (entitled ''UPLOAD.COM''), which uploads the host file transfer program from your DSN/LINK disc exclusively to the HP 3000.

   c. A small amount of firmware code (entitled ''DSNLINK.DAT''), which is downloaded into the Series 100 terminal memory.

   d. The data communications program (entitled ''DSNLINK.COM'') used by the Series 100.

2. Version MPE IV C.00.20 or later of the HP 3000 MPE (Multi-Programming Executive) Operating System. (On an HP 3000 Series 64, the MPE Version may be D.00.20 or later.) The host program for the HP 3000 (LINK100) is written in PASCAL; the routines used by this PASCAL program are not available on previous versions of MPE. Check with your system manager to verify that the correct version of the operating system is installed.

Unpacking and Inspection

Before unpacking, inspect the shipping carton for signs of mishandling. If damage to the shipping carton is evident, write a notation on the freight bill before signing. The package should be inspected as soon as possible.

After unpacking, check the flexible disc for damage (scratches, bends, etc.). If the flexible disc is damaged, notify the carrier and the nearest Hewlett-Packard Sales and Service Office immediately for a carrier's inspection report. Retain the shipping container and the packing materials for the carrier's inspection. The Hewlett-Packard Sales and Service Office will arrange for the repair or replacement of the damaged disc without waiting for any claims against the carrier to be settled.

References

For more information on the Series 100 and the HP 3000 computer systems, refer to the following manuals:

For the Series 100 Computer:

Name	Part Number
HP 120 Installation Guide	45600-90002
HP 125 Installation Guide	45500-90019
Series 100 Owner's Manual	45500-90020
System Reference Manual	45536-90000
Series 100/System Programmer's Quick Reference	45536-90001

Information on specific software applications may be found in the manual shipped with the Application Disc.

For the HP 3000:

Name	Part Number
MPE Commands Reference Manual	30000-90009
MPE Intrinsics Reference Manual	30000-90010
Using the HP 3000	03000-90121
Using Files	30000-90102
EDIT/3000 Reference Manual	30000-90011
FCOPY Reference Manual	03000-90064
IMAGE Data Base Management System Reference Manual	30000-90041
QUERY Reference Manual	30000-90042

Chapter 2

PREPARING FOR FILE TRANSFERS WITH THE HP 3000

This chapter discusses the things that need to be done to prepare your Series 100 Computer as well as the HP 3000 for transferring files. (For host computers other than an HP 3000, refer to Chapter 8, "Transferring Files with Other Host Computers." For file transfer and data communications between two Series 100 Computers, refer to Appendix F.)

A host file transfer program (LINK100) must be installed on the HP 3000 by the system manager in order to transfer files to and from the Series 100 Computer. Your Series 100/DSN/LINK software provides the tools required to upload the file transfer program to the HP 3000.

NOTE

The use of logging options and the command menu in Series 100/DSN/LINK do not require the use of the HP 3000 host program (LINK100).

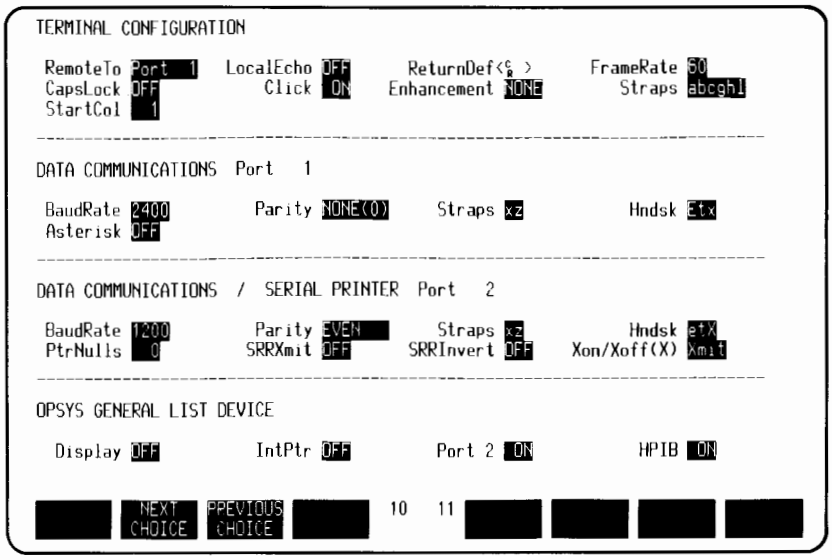
These preparations have to be made only one time. If you have already made the necessary arrangements with your system manager and installed the host file transfer program as detailed in this section, go to Chapter 3 (''Running Series 100/DSN/LINK'').

Preparations for Your Series 100

There are a few steps you need to take to prepare your Series 100 for data communications, which are listed below:

1. Before you use a new application program (such as Series 100/DSN/LINK), it must be installed from your Application Disc to a Work Disc. Refer to the *Series 100 Owner's Manual* for instructions for using the Install Mode on the Welcome Menu. This process copies the application program and makes it accessible on your Work Disc by a single keystroke from the Welcome Menu.

2. Set up the Terminal Configuration menu. (Refer to instructions in the *Installation Guide* for your Series 100 computer.) Verify that the Baud Rate—the speed at which data is transmitted to and from the host computer—is set to match the speed at which the HP 3000 is set. (Your system manager can provide this information.) A sample configuration menu is shown below:



NOTE

It is recommended that the Baud Rate be set at 2400 (or lower) during installation of the host program.

3. Format an extra disc before running DSN/LINK. The extra disc will be used to store your command files and data files. (Refer to the *Series 100 Owner's Manual* for instructions on formatting discs.)

Preparations for the HP 3000

Before using Series 100/DSN/LINK, work with your system manager to have access to the HP 3000.

1. You will be assigned a user name, account name, and possibly a password. (A password is a security code which identifies you to the host computer.) This information will be required each time you access (''log on'' to) the HP 3000.

2. Make arrangements with your system manager to have an HP 3000 port available at your workstation. Confirm that the cabling is connected from either port of your Series 100 Computer to the port on the HP 3000. (Refer to your *Installation Guide* for details.)

3. Verify with your system manager that the HP 3000 has installed Version MPE IV C.00.20 (or later) of the HP 3000 MPE (Multi-Programming Executive) Operating System. On an HP 3000 Series 64, the MPE Version may be D.00.20 or later.

In addition to the above preparations, a file transfer program must be in place on the HP 3000. Ask your system manager to install this program (LINK100) from your Series 100/DSN/LINK Work Disc, using the steps outlined in the following sections. (Your system manager should install LINK100 in the PUB.SYS account on the HP 3000 so that all users may have access to it.)

Accessing the HP 3000

Before installing the host file transfer program, your system manager must log on to the HP 3000 as follows:

1. Verify that an asterisk (*) appears in the LOCAL OP SYS function key label. This indicates that the Series 100 Computer is set to operate as a locally-controlled, self-contained personal computer under the control of the CP/M Operating System.

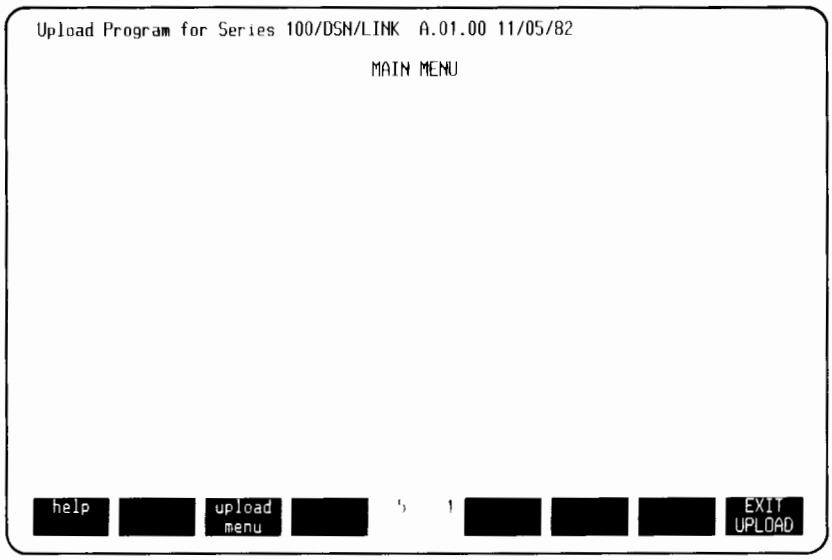
2. Place the Series 100/DSN/LINK Work Disc in your disc drive, and press the LOAD OP SYS function key. The message ''Loading OP SYS (operating system)...'' momentarily displays on the screen, then the Welcome Menu appears.

3. Press the EXIT TO CP/M function key. The screen clears and the prompt (A>) is displayed.

4. Type ''Upload'' as shown in the example below and press [↵]. (''Upload'' is the file name for the utility which copies the file transfer program from the Series 100 to the HP 3000. ''Upload'' also switches you automatically to Remote Mode to establish communications with the HP 3000.)

```
A> Upload
```

After pressing [↵], the Upload Program Main Menu appears as shown below. (This menu is described in the following section.)



5. After the Main Menu for the Upload Program appears, log on as follows:

   a. Press [↵] and the HP 3000 prompt (:) appears.

   b. Type the HP 3000 :HELLO command as system manager and press [↵].

   If your log-on attempt is accepted, the HP 3000 sends one or more lines of log-on information and prompts you with a colon (:) for the next command. (The log-on information includes the version number of the HP 3000 operating system, as well as the connect date and time.)

Using the Upload Program Main Menu

You have now established communications with the HP 3000. Note that the Upload Program Main Menu remains on the screen during log-on, displaying the following function keys:

help	upload menu	EXIT UPLOAD

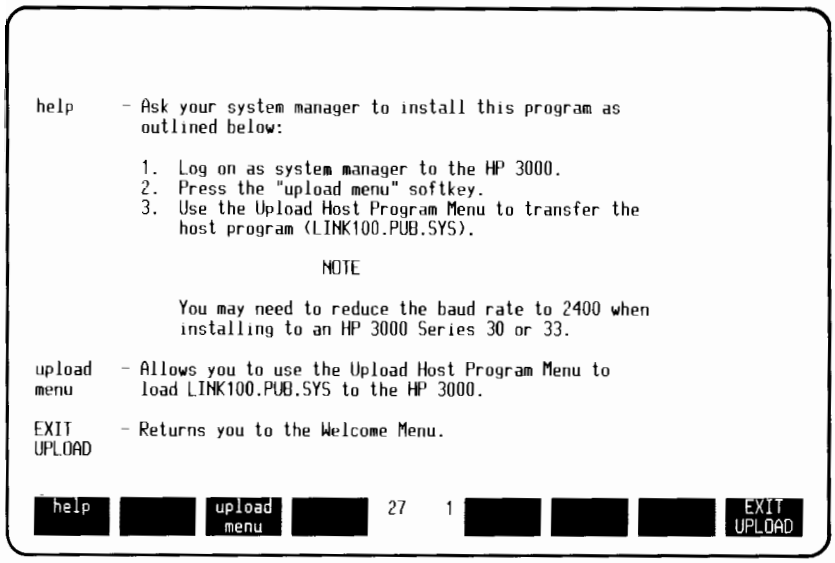
1. The "help" function key provides a checklist for the system manager to upload the host program, and explains the Upload Program function keys.

2. The "upload menu" key allows you to use the Upload Host Program Menu to load the host file transfer program (LINK100) to the HP 3000.

3. EXIT UPLOAD allows you to return to the Welcome Menu.

Using the "help" Key

When you press the "help" key, the following appears on the Upload Program Main Menu screen:



Notice that the function key labels at the bottom of the screen remain the same. This indicates the Main Menu is active and that the other functions continue to be available after the ''help'' function key is pressed.

When you finish viewing the ''help'' data, you may access one of the other menus simply by pressing the desired function key. If you continue using the Main Menu, you may wish to erase the ''help'' data as follows:

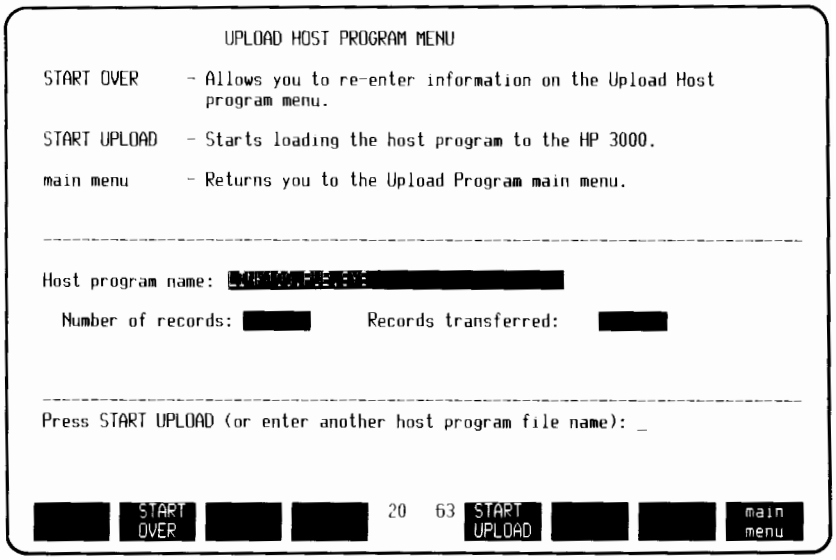
1. Position the cursor at the top of the ''help'' data (under the word ''help'').

2. Press the CLEAR DSPLY key located in the upper right corner of the keyboard. The data on the screen from the cursor position and following will be cleared.

Accessing the Upload Host Program Menu

Now that you have access to the HP 3000, you must define the host file transfer program (LINK100) that you wish to load to the HP 3000. To do so, use the Upload Host Program Menu.

To access this menu, simply press the "upload menu" function key displayed on the Upload Program Main Menu. The message "Waiting for host response" briefly appears on the screen, then the Upload Host Program Menu is displayed as shown below:



Filling in the Upload Host Program Menu

The Upload Host Program Menu is divided into three sections, described below:

1. The top section lists the function keys and describes each one:

START OVER	Allows you to re-enter information on the Upload Host Program Menu. This is particularly helpful if you make a typing error, or wish to change the host program file name, or start over in case the Upload program has been halted.
START UPLOAD	Starts loading the host file transfer program to the HP 3000
main menu	Allows you to return to the Upload Program Main Menu

2. The center section of the Upload Host Program Menu contains the following information, displayed in inverse video (dark characters on a light background):

Host program name:	Contains the name of the HP 3000 file transfer program. (The name defaults to LINK100.PUB.SYS)
Number of records:	Displays the number of records in the host program (which is filled in automatically when the transfer starts)
Records transferred:	Displays a running count of records transferred during the Upload program

3. The bottom section of the Upload Host Program Menu displays messages to the user, as well as the function keys. Watch this section for instructions and messages when using the Upload Host Program Menu.

Installing the Host Program

After you have accessed the Upload Host Program Menu, the "Host program name:" displays "LINK100.PUB.SYS", and the following message is displayed in the bottom section:

Press START UPLOAD (or enter another host program file name):

1. To install this program on the HP 3000, simply press the START UPLOAD function key.

2. If you wish to enter another name for LINK100 on the host, type that name and press [↵]. This new host program name will now appear in the Upload Host Program Menu. After you press [↵], the message, "**Please select a function**" appears. Press START UPLOAD.

NOTE

In conjunction with a new host program name, you must create the file COMMAND.LNK that contains a "&HOSTCOPY" command to run the new host program name. This command will automatically be processed each time you run DSN/LINK. (Refer to Chapter 7 for information on preparing command files.)

After you press START UPLOAD, the function keys change and the following message appears in the bottom section of the Upload Host Program Menu:

Begin program file upload.

The cursor blinks momentarily, then moves to the ''Records transferred:'' field in the top section. The cursor remains at this point while records are transferred. (Notice that the number in the ''Records transferred:'' field keeps changing until it matches the total in the ''Number of records:'' field .) The cursor returns to the bottom section, where the following message is displayed:

Second pass.

The ''Records transferred:'' field then clears, and the cursor returns for a second count of records transferred. When the number in this field matches the total in the ''Number of records:'' field , the cursor returns to the bottom section. The ''Records transferred:'' field clears, and the following message is displayed:

Verify in progress.

The cursor blinks at the end of the message line for a few moments while the record count from the second pass is verified with initial transfer. (This error checking function is performed during data transmission to check the integrity of the data.)

The following message is then displayed in the bottom section of the Upload Host Program Menu:

Installation of host program complete. Please select a function.

3. The HP 3000 data communications program is now loaded. Press ''main menu'' to return to the Upload Host Program Menu, then press EXIT UPLOAD to return to the Welcome Menu.

Halting Program Upload

It may be necessary at times to halt the Upload program. For example, the cursor may continue to blink in one position for several minutes, or the number in the ''Records transferred:'' field has stopped changing and remains constant for several minutes without reaching the total in the ''Number of records:'' field .

In both examples, data communications have most likely been interrupted. You will have to halt the Upload program and start over.

To halt upload, perform the following steps:

1. Press ''stop upload''. The function keys on the Upload Host Program Menu change as follows:

CONTINUE UPLOAD	CONFIRM STOP

2. When you press CONFIRM STOP, the message ''Waiting for host response'' is momentarily displayed in the bottom section of the Upload Host Program Menu, and the function keys change to the following:

TIME OUT
EXIT

3. After a few seconds, the message "**Operation aborted**" is displayed. (If after several minutes the system does not respond, press TIME OUT/EXIT to return to the Upload Program Main Menu.) The function keys change to the following:

START OVER	START UPLOAD	main menu

4. At this time, you may press one of the function keys shown above to do the following:

   - START OVER allows you to re-enter the host program name.
   - START UPLOAD starts uploading your host program again.
   - "main menu" exits the Upload Host Program Menu and returns you to the Upload Program Main Menu. (You may wish to return to this menu to verify that the HP 3000 is still responding.)

NOTE

If you do not wish to use the Upload Program Main Menu, press EXIT UPLOAD. The message, "**INSTALLATION HOST PROGRAM TERMINATED**" is displayed, and the Welcome Menu appears.

Chapter 3

RUNNING SERIES 100/DSN/LINK

This chapter outlines how to use Series 100/DSN/LINK. Regardless of the function involved (transferring files, creating a command file, or logging), the same basic steps are used, including:

- using the DSN/LINK Main Menu
- accessing the host computer
- accessing ''help'' data
- viewing the directory or deleting a file
- entering host commands from the DSN/LINK Main Menu

NOTE

You must complete installation of Series 100/DSN/LINK to your Work Disc and verify that the host file transfer program is in place on the HP 3000 before running DSN/LINK. (Refer to Chapter 2 for further information.)

Using the Main Menu

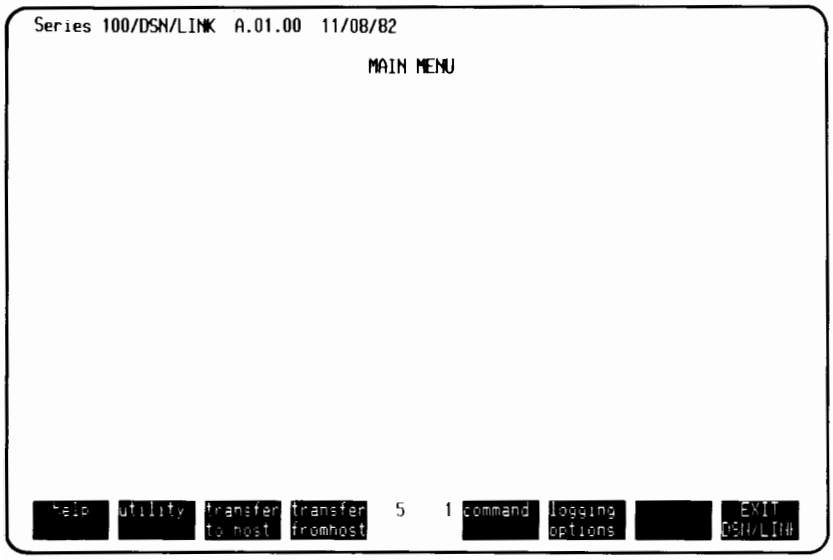
In order to use Series 100/DSN/LINK, you must first access the DSN/LINK Main Menu, as follows:

1. Start up the Series 100 Computer with your Work Disc in the disc drive. The Welcome Menu, which now contains the DSN/LINK function label, appears on the screen.

2. Press the DSN/LINK function key. The Welcome Menu clears, and the message "*****Application Loading*****" appears for a few seconds, replaced by the message "**Loading data comm code.**"

   At this time, the firmware code which provides data communications capability to the Series 100 Computer is automatically downloaded into Series 100 terminal memory.

The DSN/LINK Main Menu is then displayed on the screen, as shown below:



The version number of DSN/LINK is displayed at the top of the Main Menu, and DSN/LINK function keys are displayed at the bottom of the Main Menu. These function keys allow you to:

- display an explanation of the DSN/LINK Main Menu function keys
- view a directory of files on your disc or delete files
- access other screen menus (such as Transfer to Host or Transfer from Host)
- enter commands to the host computer
- record interaction with the host to a local printer or local file, or both
- exit DSN/LINK

Other menus are accessed by pressing their respective function key while the DSN/LINK Main Menu is displayed. Consequently, the Main Menu is most commonly used as a pathway to other DSN/LINK menus. (However, the Main Menu remains active so that host commands may be entered directly.)

Accessing the Host Computer

After the DSN/LINK Main Menu is displayed, you are ready to access, or ''log on'' to, the host computer. There are three ways in which to establish data communications between the Series 100 and the HP 3000, which are further discussed below:

- log on in Remote Mode, before running DSN/LINK
- log on in the DSN/LINK Main Menu
- use the command file capabilities of DSN/LINK

Logging on in Remote Mode

To log on to the HP 3000 immediately after you insert your Work Disc and before running DSN/LINK, follow the steps outlined below:

1. When the Welcome Menu appears, press the EXIT TO CP/M function key. The Welcome Menu disappears and the CP/M prompt (A>) appears on the screen. The labels on the function keys change to the following:

MODIFY LINE	MODIFY ALL	LOCAL OP SYS*	REMOTE MODE	TERMINAL TEST	LOAD OP SYS	DISPLAY FUNCTNS	AUTO LF

   Notice that the asterisk appears in the LOCAL OP SYS function key label. This indicates your Series 100 Computer is set to operate as a locally-controlled, self-contained personal computer under the control of the CP/M Operating System.

2. Press the REMOTE MODE function key label. The asterisk ''jumps'' from the LOCAL OP SYS function key label to the REMOTE MODE function key label, as shown below:

MODIFY LINE	MODIFY ALL	LOCAL OP SYS	REMOTE MODE*	TERMINAL TEST	LOAD OP SYS	DISPLAY FUNCTNS	AUTO LF

   The asterisk indicates that your Series 100 Computer is now set to operate as a computer terminal controlled by the HP 3000.

3. Press [↵] on the Series 100. The system prompt (:) is displayed on the screen.

NOTE

If the system prompt (:) is not displayed, check the cabling between your Series 100 and the HP 3000. Also, check the contents of the Terminal Configuration menu (particularly the Baud Rate).

---

4. Enter the HP 3000 :HELLO command, followed by your user name, account name, and password. (Some accounts will not have a password.) Press [↵]. Your entry should look like this:

   HELLO USER.ACCOUNT/PASSWORD

   (Refer to the *HP 3000 MPE Commands Reference Manual* for additional information on the :HELLO command.)

5. If your log-on attempt is accepted, the HP 3000 sends one or more lines of log-on information and prompts you with the system prompt (:) for the next command. (The log-on information includes the HP 3000 version number, and the current date and time.)

6. Once you have logged on to the HP 3000, press the LOCAL OP SYS function key. Your Series 100 Computer is again under the control of the CP/M Operating System.

7. Press the LOAD OP SYS function key to reload the CP/M Operating System and display the Welcome Menu.

8. Access DSN/LINK by pressing the DSN/LINK function key.

Logging on in the DSN/LINK Main Menu

After you have accessed the DSN/LINK Main Menu, you may log on to the HP 3000 from the Main Menu as follows:

1. Press [↵] on the Series 100. The system prompt (:) is displayed on the screen.

2. Enter the HP 3000 :HELLO command, followed by your user name, account name, and password. (Some accounts will not have a password.) Press [↵]. Your entry should look like this:

   HELLO USER.ACCOUNT/PASSWORD

3. If your log-on attempt is accepted, the HP 3000 sends one or more lines of log-on information and prompts you with the system prompt (:) for the next command. (The log-on information includes the HP 3000 version number, and the current date and time.)

Logging on Using Command Files

When you press the DSN/LINK function key, DSN/LINK begins loading. While doing so, it automatically searches for a command file named "COMMAND.LNK" on your Work Disc. (If COMMAND.LNK is not found, the DSN/LINK Main Menu is displayed without any command being executed.)

COMMAND.LNK is an optional command file you create which may contain log-on sequences, configuration information for a host computer, or any other routine activity you wish carried out before the DSN/LINK Main Menu appears. (Refer to Chapter 7 for more information on creating command files.)

For example, if you routinely log on to a particular account on the HP 3000, you may include that information in the command file. Therefore, you would not have to go through the steps to log on to the HP 3000 every time you access DSN/LINK.

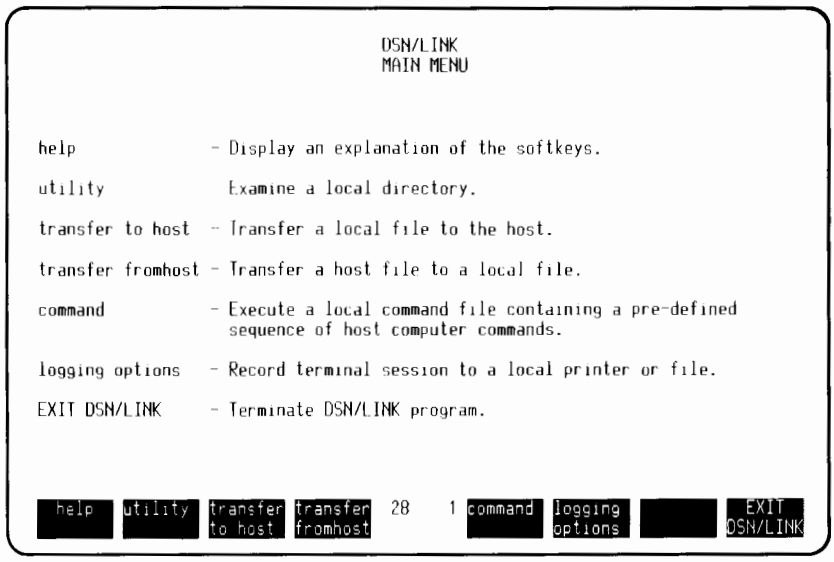
After COMMAND.LNK is executed, the following message is displayed on the screen in inverse video (dark characters on a light background) before DSN/LINK begins running:

End of command file.

Accessing "help" Information

Series 100/DSN/LINK includes descriptions of function keys that appear on the Main Menu. These descriptions can be viewed by pressing the "help" function key while the Main Menu is displayed on the screen.

When you press the ''help'' function key, the following screen appears:



Notice that the top of the screen continues to display ''Main Menu'', and the function key labels at the bottom of the screen remain the same. This indicates the Main Menu is active and that other functions continue to be available after the ''help'' function key is pressed.

The center of the screen displays the ''help'' data, which is a description of each of the Main Menu function keys.

When you finish viewing the ''help'' data, you may access one of the other menus simply by pressing the desired function key. If you continue using the Main Menu, you may wish to erase the ''help'' data as follows:

1. Position the cursor at the top of the ''help'' data (under the word ''help'').

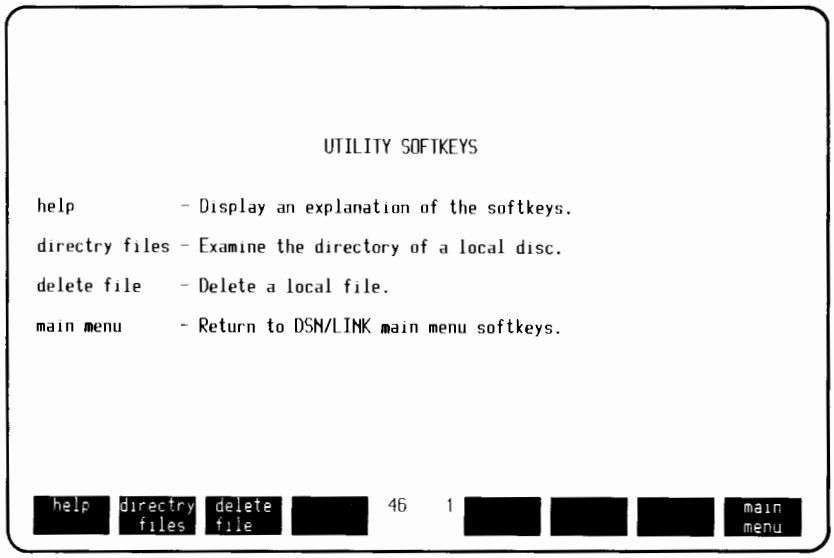
2. Press the CLEAR DSPLY key located in the upper right corner of the keyboard. The data on the screen from the cursor position and following will be cleared.

Viewing the Directory or Deleting a File

In order to view a local directory or delete local files while running DSN/LINK, simply press the ''utility'' function key while in the Main Menu. The function keys change as shown below:

help	directry files	delete file					main menu

The ''help'' key describes the utility softkeys. When ''help'' is pressed, the following appears on the screen:

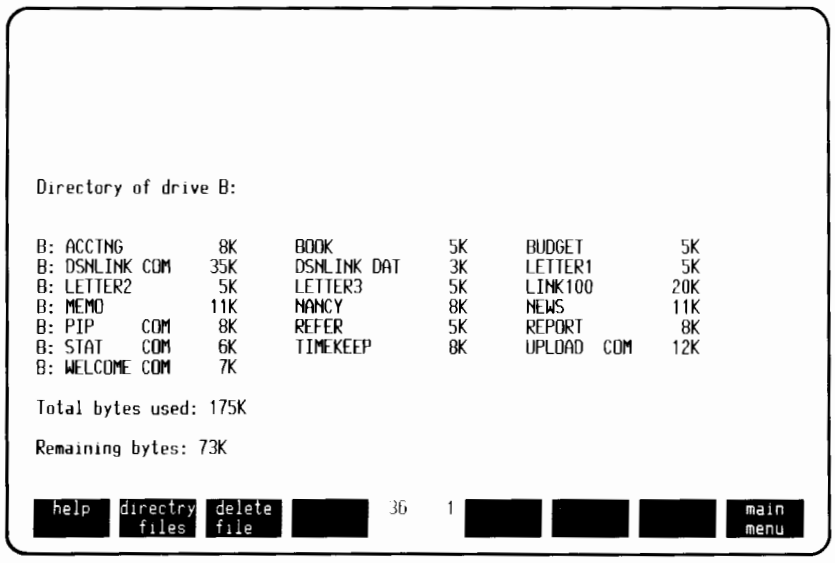


1. To view a directory of files, perform the following steps:

   a. Press the ''directry files'' function key. The following message is displayed in the bottom section of the screen:

      Please enter a disc drive (or RETURN):

   b. Type the disc drive designator (a:, b:, etc.) for the disc you wish to view, and press [↵]. The message is replaced by directory information, as shown in the following example:



NOTE

If you simply press [↵], DSN/LINK does not default to any disc drive. You must type the disc drive designator, then press [↵].

---

2. To delete a file, perform the following steps:

   a. Press the "delete file" function key. The following message appears in the bottom section of the screen:

      Please enter the filename to be deleted (or RETURN):

   b. Type the file name, preceded by the disc drive designator (such as "B:TIMEKEEP"), and press [↵]. (If you do not specify the disc drive designator, DSN/LINK defaults to the A drive.)

      The following example shows the message confirming the file is deleted:

      B:TIMEKEEP deleted.

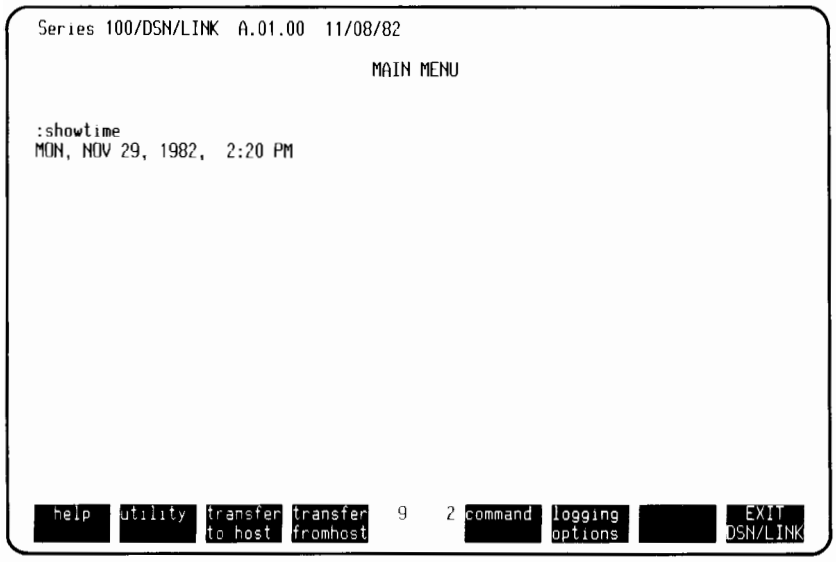
To return to the DSN/LINK Main Menu, press the "main menu" function key. You may also wish to clear the screen (refer to instructions in the last section).

Entering Host Commands from the Main Menu

The DSN/LINK Main Menu allows you to use the Series 100 as a terminal to the HP 3000, while still under control of the CP/M Operating System.

Host commands may be sent directly to the HP 3000 by entering commands on the DSN/LINK Main Menu. The Series 100 acts as if it were in Remote Mode, even though DSN/LINK is running in Local Op Sys Mode. (Refer to the *Series 100 Owner's Manual* for more information on Local Op Sys and Remote modes.)

The ability to enter commands directly on the DSN/LINK Main Menu is intended primarily for use with simple HP 3000 commands. Type a host command on the Main Menu just as you would during a normal terminal session. For example, if you type the HP 3000 command to display the current time (:SHOWTIME), your screen appears as follows:



NOTE

After a command is entered, a host program may redefine the function keys, causing the softkey labels on the screen to change. You may ''toggle'' between the host-defined labels and the local (DSN/LINK) labels by using the USER KEYS key (for host) and MODES key (for local).

Escape sequences are also processed while DSN/LINK is running. Most host programs that do not require Block or Format modes will run successfully.

Chapter 4

TRANSFERRING FILES FROM THE SERIES 100 TO THE HP 3000

Transferring files from the Series 100 to the HP 3000 is easy with Series 100/DSN/LINK. The transfer process is simply copying files from one computer to another, and a Transfer to Host Menu is provided on DSN/LINK to guide you through the necessary steps.

This chapter discusses how to access and complete the Transfer to Host Menu, correct errors and change information in the menu, and transfer or halt transfer of your file from the Series 100 to the HP 3000.

Accessing the Transfer to Host Menu

To transfer a file from the Series 100 to the HP 3000, first access the Transfer to Host menu by pressing the "transfer to host" function key while the Main Menu is displayed on the screen. One of two messages will appear in the bottom section of the menu:

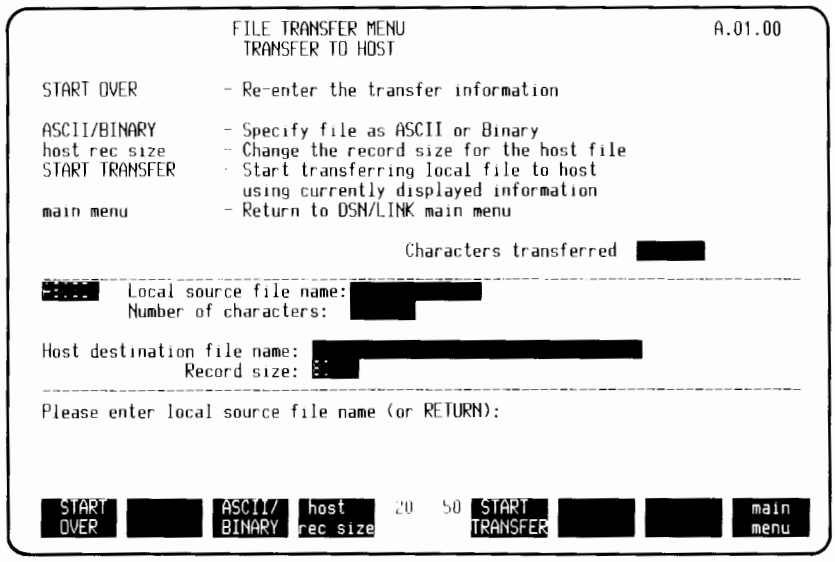
1. "**Cannot start HP 3000 transfer program. Series 100 DSN/LINK requires that the program "LINK100.PUB.SYS" be installed on your HP 3000 to transfer files. Please refer to the DSN/LINK manual, Chapter 2, for details.**"

This message indicates two possible error conditions:

a. You may not be logged on to the HP 3000. You must exit the Transfer to Host Menu and verify that you are logged on by pressing [↵]. A system prompt (:) should appear in the DSN/LINK Main Menu. If not, follow the steps outlined in Chapter 3 to log on.

b. The host file transfer program may not be installed on the HP 3000. You must exit DSN/LINK and install the host file transfer program, as outlined in Chapter 2 in this manual.

2. The message "**Waiting for host response**" briefly appears and the only function key displayed is TIME OUT/EXIT. (The host program is initiated during the next few seconds.) The Transfer to Host menu then appears, as follows:



a. The top section of the screen contains definitions of the function keys used during the ''transfer to host'' operation, which are described below:

START OVER	Allows you to re-enter the transfer information in the Transfer to Host Menu. Press this key if you make a mistake while typing the transfer information.
ASCII/BINARY	Allows you to select the file format of the local file. (Most files generated by the Series 100 will be ASCII, although a binary file may contain any kind of data, including .COM program files.)
host rec size	Allows you to change the record size selected for the HP 3000 file, up to 512 bytes. (The default size is 80 bytes for ASCII and 128 bytes for binary.)
START TRANSFER	Starts transferring the Series 100 file to the HP 3000 using the information currently displayed in the Transfer to Host Menu.
main menu	Allows you to return the Main Menu to the screen.

In addition, the ''Characters transferred:'' field is located in the top section of the Transfer to Host Menu. This field is displayed in inverse video, and contains a running count of characters transferred from the Series 100 to the HP 3000 when ''transfer to host'' is in process.

NOTE

When transferring ASCII files, the total in the ''Characters transferred:'' field may not match the total in the ''Number of characters:'' field . The difference, however, should be less than 128 characters (bytes).

---

b. The center section of the screen contains a group of fields (described below) which provide information about the source file on the Series 100 and the destination file to which they will be transferred on the HP 3000.

Local source file name:	Contains the name of the file on the Series 100 that is to be transferred to the HP 3000.
Number of characters:	Specifies the total number of characters in the source file.
Host destination file name:	Contains the name that will be given to the file after it is transferred to the HP 3000.
Record size:	Specifies the size of each record created in the HP 3000 file. The defaults in this block are 80 bytes for an ASCII file and 128 bytes for a binary file.

c. The bottom section of the Transfer to Host Menu displays messages and function key labels. While the Transfer to Host Menu will not change, messages and function key labels in this section continue changing to guide you through the process of transferring your file from the Series 100 to the HP 3000.

Filling in the Transfer to Host Menu

Before transferring your file, information on the local file (the source) and the host file (destination) must be completed. The following steps outline how to fill in this information.

Source File Information

When the Transfer to Host Menu first appears on the screen, the following message is displayed in the bottom section of the menu:

Please enter local source file name (or RETURN):

DSN/LINK asks you to enter the name of the Series 100 file you wish to transfer to the HP 3000.

a. Type the file name, preceded by the appropriate disc drive designator. The disc drive designator is a single letter (A, B, C, ... etc.) followed by a colon. This letter tells DSN/LINK which disc drive contains the file you want to transfer. (If no drive identifier is included, CP/M assumes the identifier of the currently selected mass storage device.)

   For example, if you wanted to transfer the file LETTER.TXT located on the "B" disc, you would type the following and press [↵]:

   B:LETTER.TXT

b. DSN/LINK attempts to find the specified file on your disc. If it locates the file, the "Local source file name:" field is filled in on screen the way you entered it. The "Number of characters:" field fills automatically with the number of "characters" found in the file. (Characters include letters, numbers, and blank spaces.)

   If DSN/LINK cannot locate your file, an error message is displayed as follows:

   ERROR: Local file XXXX does not exist

To clear the error message and continue using the Transfer to Host Menu, press START OVER. The menu prompts:

Please enter local source file name (or RETURN):

Before filling in the source information again, however, be sure to check the following:

1. Is the file name spelled exactly as you intended? Uppercase characters are read the same as lowercase characters by DSN/LINK; however, check that the correct keyboard character (such as an ''L'' rather than a ''1'') has been used.

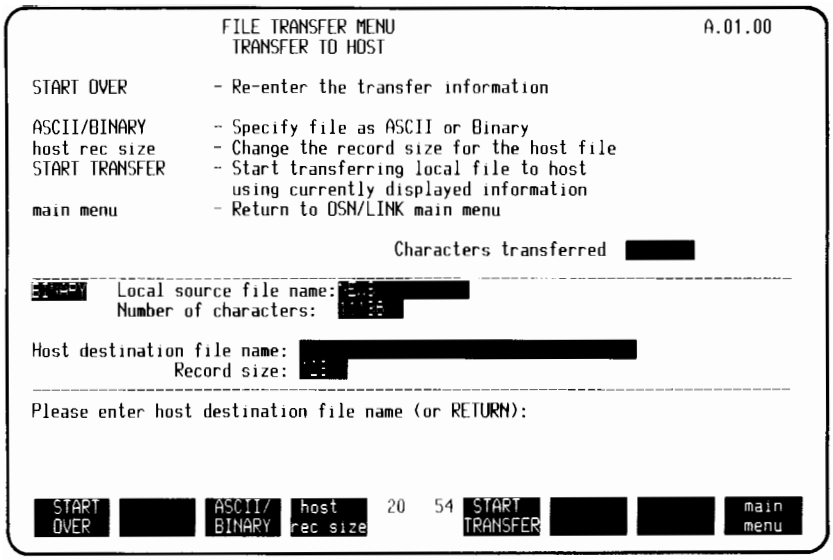
2. Did you specify the correct disc drive designator? DSN/LINK will not be able to locate your file if you specified the wrong disc drive. (It may be necessary to return to the Main Menu briefly to view the directories; see Chapter 3 for instructions.)

3. Did you specify the correct ''file type'' along with the file name? When DSN/LINK prompts you to enter the ''Local source file name:'', the file type must be included with the file name (as shown in the example ''B:LETTER.TXT'').

Destination File Information

After the source file information is filled in, the following message is displayed in the bottom section of the menu:

Please enter host destination file name (or RETURN):



DSN/LINK asks you to enter the name that will be given to the file after it is transferred to the HP 3000.

1. Type the file name and press [↵]. (The name you supply at this point should be a valid HP 3000 file name. Refer to the *HP 3000 MPE Commands Reference Manual* for more information.) The file name you typed now appears in the "Host destination file name:" field.

   If the name you type already exists as a file on the HP 3000, the following message is displayed on the screen:

   WARNING: Host file exists. It will be overwritten.

   If you do not wish to replace the old host file with the one which you wish to transfer, press START OVER to clear the message. If, however, you wish to replace the old host file, simply press START TRANSFER.

NOTE

In most cases, the destination file name you specify is the name of a file to be stored on an HP 3000 system disc. You may, however, specify an alternative called a "file equate." The HP 3000 recognizes a "file equate" as an instruction. For example, if "LP" is defined as the HP 3000 line printer, the destination file name "*LP" sends the Series 100 file to the HP 3000 line printer.

2. After you type the host destination file name, DSN/LINK fills in the "Host destination file name:" field on the screen. The "Record size:" field defaults to 80 bytes for ASCII files and 128 bytes for binary files if the host file does not exist; otherwise, it gives the actual record size of the file.

   For most file transfers, you do not need to change the values in the "Record size:" field. This field needs to be changed only if you want a different record size or if you encounter an error while trying to transfer the file. (To change the record size, refer to the following section.)

3. After you have entered the host destination file information, the message "**Please select a function**" appears in the bottom section of the Transfer to Host Menu.

Changing Information in the Transfer to Host Menu

Now that the Transfer to Host Menu is filled in, you are ready to start transferring the file. Before doing so, however, you may want to verify the information entered in the menu. Should you wish to correct errors or make changes, follow the steps outlined in the following two sections, "Using the START OVER Function Key" and "Changing the Record Size."

Using the START OVER Function Key

The START OVER function key is extremely useful if you make a typing error while filling in the Transfer to Host Menu. This function key allows you to re-enter information into the Transfer to Host fields.

1. When you press the START OVER function key, the following message appears in the bottom section of the menu:

   Please enter local source file name (or RETURN):

   Type the file name you wish to use and press [↵]. (If you do not wish to change this field, simply press [↵].) The new file name appears in the "Local source file name:" field. (The "Number of characters:" field is automatically filled in.)

2. The following message is then displayed in the bottom section of the Transfer to Host Menu:

   Please enter host destination file name (or RETURN):

   Type in the file name you wish to use and press [↵]. (If you do not wish to change this field, simply press [↵].) The new file name appears in the "Host destination file name:" field.

For example, suppose that you had named your host destination file PAYROOL instead of PAYROLL. To make the correction:

- Press the START OVER function key.
- DSN/LINK requests the "local source file name." Since you do not wish to change this entry, press [↵].
- DSN/LINK requests the "host destination file name." Type the new name (PAYROLL), and press [↵].

The information in the Transfer to Host Menu is now accurate, and the following message is displayed:

Please select a function.

Changing the Record Size

If the record length for your ASCII file is longer than the default record size, the records will be truncated (cut off) during ''transfer to host.'' A warning message will be displayed as follows:

WARNING: xx lines truncated.

Therefore, you may wish to change the record size specified in the Transfer to Host Menu, as follows:

1. Press the ''host rec size'' function key. (The source and destination file information should be already be entered.)

2. The following message is displayed in the bottom section of the Transfer to Host Menu:

   Please enter host file record size (or RETURN):

3. Type the number you wish to use for the new record size and press [↵]. (This number should be from 1 to 512.)

   For example, the ''standard'' line length is 80 characters or less, which is easily handled with the defaults specified for ASCII and binary file transfers. However, should you wish to print a line length which is longer (such as a file printed horizontally on the page of up to 130 characters), you must change the record size or lines will be truncated.

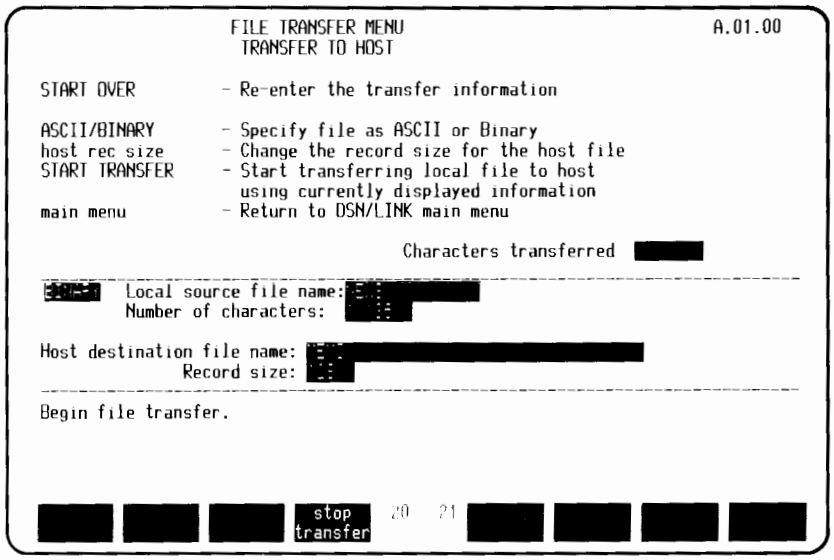
   The ''Record size:'' field displays the number you entered, and the following message is displayed:

   Please enter local source file name (or press RETURN):

Transferring the File

After you fill in the Transfer to Host Menu and have made any changes or corrections, you are ready to transfer the file from your Series 100 to the HP 3000.

Press the START TRANSFER function key. The following message is displayed in the bottom section of the menu, and the function keys change as follows:



After 5 to 20 seconds, DSN/LINK transfers the file. The field in the first section of the menu labeled "Characters transferred:" changes to indicate the number of characters transferred, and the following message is displayed:

File transfer in progress.

For binary file transfers the numbers in the "Characters transferred:" field and the "Number of characters:" field will match. For ASCII file transfers, however, there may be a difference in these two numbers of less than 128 characters (bytes). This is not an error. (Should an error occur, an error message will be displayed on the screen.)

When the entire file is transferred, the following message is displayed on the screen:

Local to host file transfer complete.

NOTE

The host file transfer program (LINK100) automatically reclaims all unused records after the transfer, which leads to improved host disc utilization.

The function keys for the Transfer to Host Menu return to the following. Press "main menu" to exit the Transfer to Host Menu and return to the DSN/LINK Main Menu.

START OVER	ASCII BINARY	host rec size	START TRANSFER	main menu

Stopping the File Transfer

While the file transfer is in progress, the only function key label displayed on the screen is:

stop transfer

1. To stop the file transfer in progress, press STOP TRANSFER. The function key labels change to the following:

CONTINUE TRANSFER	CONFIRM STOP

2. At this point, you may press the CONTINUE TRANSFER or the CONFIRM STOP function key.

   a. If you press the CONTINUE TRANSFER function key, DSN/LINK resumes the file transfer, starting where it left off.

   b. If you press the CONFIRM STOP function key, the function key labels change so that TIME OUT/EXIT is the only function key displayed, and the following message appears on the screen:

      "**Waiting for host response**"

3. After several seconds, the HP 3000 signals that the transfer operation is aborted. The message "**Operation aborted**" appears on the screen, and the function key labels change to the following:

START OVER	ASCII BINARY	host rec size	START TRANSFER	main menu

   a. Press the START OVER function key if you wish to re-enter the source and destination file information in the Transfer to Host Menu.

   b. Press "main menu" if you want to exit the Transfer to Host Menu and return to the DSN/LINK Main Menu.

NOTE

If several minutes elapse without a response from the HP 3000, press the TIME OUT/EXIT function key. "Transfer to host" terminates, and the DSN/LINK Main Menu appears on the screen. Press [←] to verify that you are still logged on to the HP 3000.

(Continued)

If the system prompt (:) does not appear when [↵] is pressed, or if you have pressed the TIME OUT/EXIT key more than one time, data communications with the HP 3000 may be interrupted, or there may be some other error condition. You must abort DSN/LINK manually, as follows:

(1) Press the BREAK key (located near the function keys).

(2) Press the ESC key, then type a colon (:) and press [↵]. Note that the colon will not be displayed on the screen as you type it; however, it will appear after [↵] is pressed. (These steps will return the Series 100 to full duplex mode, so that characters entered on the keyboard may be displayed on the screen.)

(3) Type "abort" and press [↵]. The following message appears on the screen:

PROGRAM ABORTED PER USER REQUEST.

Performance Considerations

The following table provides measured performance characteristics for transfers from the Series 100 to the HP 3000. This data applies equally to ASCII and binary file transfers. However, these times are only approximate and may vary according to the processing load on the host computer.

Selected Baud Rate	Effective Baud Rate	Approximate transfer time (based on 10,000 characters)
300	260	6:24 Min
1200	950	1:35
2400	1722	:58
9600	3660	:58

When transferring a file at 9600 baud to an HP 3000, the load on the HP 3000 heavily influences the speed of the transfer. A special command (&CHARDELAY) is available to allow a small delay between each character sent to the HP 3000.

Even a moderate load on an HP 3000 Series 30, 33, 40 or 44 requires some delay to be introduced when sending to the HP 3000 at 9600 baud. For this reason, there is a default delay of 3 milliseconds per character when transferring to the host at 9600 baud. This delay has the effect of reducing the effective transfer rate to that of 2400 baud.

If you are transferring to an HP 3000 Series 64 or a lightly loaded Series 44, you can take away the character delay with the command "&CHARDELAY 0". (Refer to Chapter 7 for information on entering commands.)

Since there are no similar conditions in sending data from the HP 3000 to the Series 100, transfers from the host are significantly faster than transfers to the host at 9600 baud.

NOTE

When transferring to host at 9600 baud, HP 3000 Models 30 or 33 may occasionally pause for 20 seconds when they cannot read a block of data fast enough, and the transfer must resynchronize. The length of this pause may be reduced by using the &TIMEOUT command. (A timeout value of 5 seconds is recommended.) Refer to Appendix B for further information.

Chapter 5

TRANSFERRING FILES FROM THE HP 3000 TO THE SERIES 100

Transferring files from the HP 3000 to the Series 100 is easy with DSN/LINK. Editor files, source program files and other files created on the HP 3000 may be copied quickly and easily from the HP 3000 to the Series 100 for editing or storage.

This chapter discusses how to access and complete the Transfer from Host Menu, correct errors and change information in the menu, and transfer or halt transfer of a file from the HP 3000 to the Series 100.

Accessing the Transfer from Host Menu

To transfer a file from the HP 3000 to the Series 100, you must first access the Transfer from Host Menu by pressing the "transfer from host" function key while the Main Menu is displayed on the screen.

When you press the "transfer from host" function key, one of two messages will appear in the bottom section of the menu:

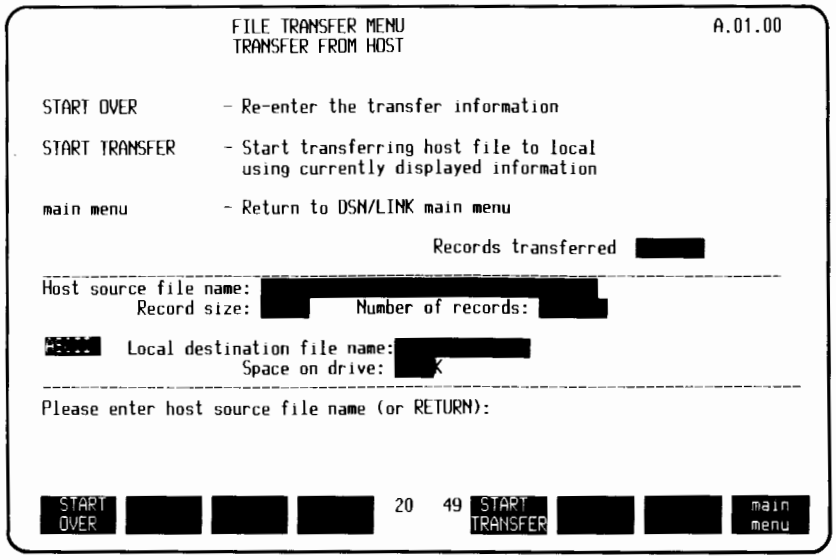
1. "**Cannot start HP 3000 transfer program. Series 100/DSN/LINK requires that the program "LINK100.PUB.SYS" be installed on your HP 3000 to transfer files. Please refer to the DSN/LINK manual, Chapter 2, for details.**"

This message indicates two possible error conditions:

a. You may not be logged on to the HP 3000. You must exit the Transfer to Host Menu and verify that you are logged on by pressing [↵]. A system prompt (:) should appear in the DSN/LINK Main Menu. If it does not, follow the steps outlined in Chapter 3 to log on.

b. The host file transfer program may not be installed on the HP 3000. You must exit DSN/LINK and install the host file transfer program, as outlined in Chapter 2 in this manual.

2. The message "**Waiting for host response**" is briefly displayed on the screen. Seconds later, the Transfer from Host Menu appears on the screen, as shown below:



a. The top section of the screen contains definitions of the function keys used during the "transfer from host" operation. These function keys are listed below, and their use described later in this chapter.

START OVER	Allows you to re-enter the transfer information in the Transfer to Host Menu. Press this key if you make a mistake while typing in the transfer information.

START TRANSFER	Starts transferring the HP 3000 file to the Series 100 using information currently displayed in the Transfer from Host Menu.
main menu	Allows you to return the DSN/LINK Main Menu to the screen.

In addition, the "Records transferred:" field is located in the top section of the Transfer from Host Menu. This field is displayed in inverse video and contains a running count of records transferred from the HP 3000 to the Series 100 when "transfer from host" is in process.

b. The center section of the screen contains a group of fields which tell DSN/LINK the characteristics of the source file on the HP 3000 and the destination file on the Series 100. The fields, which are displayed in inverse video, are described as follows:

Host source file name:	This field contains the name of the file on the HP 3000 that is to be transferred to the Series 100.
Record size:	This field contains a number specifying the size of the records in the HP 3000 source file.
Number of records:	This field contains a number specifying the number of records in the HP 3000 source file.
Local destination file name:	This field contains the name given to the file after it is transferred to the Series 100.
Space on drive:	This field contains the amount of space available on the destination disc drive on the Series 100, and gives the user an indication of whether the host file will fit on the local disc drive.

NOTE

Because of the differences in the host and local file formats, DSN/LINK cannot automatically determine how much local space a host file will require.

c. The bottom section of the Transfer from Host Menu displays messages and function key labels. While the Transfer from Host Menu will not change, messages and function key labels in this section continue changing, to guide you through the process of transferring your file from the HP 3000 to the Series 100.

Filling in the Transfer from Host Menu

Before transferring the file, you must tell DSN/LINK information on the host file (the source) and the local file (destination). The following sections outline how to fill in this information in the Transfer from Host Menu.

Source File Information

When the Transfer From Host Menu first appears on the screen, the following message is displayed in the bottom section of the menu:

Please enter host source file name (or RETURN):

DSN/LINK asks you to enter the name of the HP 3000 file you wish to transfer to the Series 100.

1. Type the file name and press [↵].

NOTE

In most cases, the HP 3000 file name you specify is the name of a file stored on an HP 3000 disc. However, you may specify a ''file equate'' in place of the disc file name. For example, if ''RDR'' is defined as the HP 3000 card reader, the source file name ''*RDR'' would send the input of the HP 3000 card reader to your Series 100 file.

---

2. DSN/LINK attempts to find the specified file on the HP 3000. If it locates the file, the ''Record size:'' and ''Number of records:'' fields are filled in automatically on the screen. (Both fields are intended for informational purposes only; you cannot change the values printed in these fields.)

   If DSN/LINK cannot locate your file on the HP 3000, an error message is displayed, as follows:

   ERROR: Host file XXXX does not exist.

   To clear the error message and continue using the Transfer from Host Menu, press START OVER. Before filling in the source information again, however, check the following:

   a. Is the file name spelled exactly as you intended? Uppercase characters are the same as lowercase characters to DSN/LINK. However, check to be sure that the correct keyboard characters (such as an ''L'' rather than a ''1'') have been used.

b. Does the file exist in your account? To check,

(1) Press the ''main menu'' function key to return to the DSN/LINK Main Menu.

(2) Press [←] to obtain the colon prompt (:) from the HP 3000.

(3) Type in the command '':LISTF'' and press [←]. The HP 3000 lists the names of the files in your account on the screen.

(4) Press the ''transfer from host'' function key to return to the Transfer from Host Menu.

Destination File Information

After the source file information is filled in, the following message is displayed in the bottom section of the Transfer from Host Menu:

Please enter local destination file name (or RETURN):

DSN/LINK asks you to enter the name you wish to give to the file after it is transferred to the Series 100.

1. Type the file name, preceded by the appropriate disc drive designator.

   The file name you supply at this point should be a valid Series 100 file name. The only special characters which are not allowed in the file name are:

   < > . , ; : = ? * [ ]

   All other printing characters are permitted. (Refer to the *Series 100 Owner's Manual* for more information on file names.)

The disc drive designator is a single letter (A, B, C, ... etc.) followed by a colon (:). This letter tells DSN/LINK which disc drive you want the file transferred to. (If no drive identifier is included, CP/M assumes the identifier of the currently selected disc drive.)

For example, if you wanted to transfer (copy) the HP 3000 file to a Series 100 file called EXAMPLE.TXT on the ''B'' drive, you would type:

B:EXAMPLE.TXT

If the name you type already exists as a file on the Series 100, the following message is displayed on the screen:

WARNING: Local file exists. It will be overwritten.

If you do not wish to replace the current local file with the one which you wish to transfer from the HP 3000, press START OVER to clear the message and re-enter a local file (destination) name. If, however, you wish to replace the current local file, simply press START TRANSFER.

2. After you have typed in the local destination file name, DSN/LINK fills in the ''Local destination file name:'' field on the screen. The message ''**Please select a function**'' is displayed. You are now ready to transfer the file.

Changing Information in the Transfer from Host Menu

Now that the Transfer from Host Menu is filled in, you are ready to start transferring the file. Before doing so, however, you may want to check the information you entered in the menu. If you wish to make any changes, use the START OVER function key outlined as follows.

The START OVER function key is extremely useful if any typing errors are made while filling in the Transfer from Host Menu. This function key allows you to re-enter information into the Transfer from Host Menu fields.

1. When you press the START OVER function key, the following message appears in the bottom section of the menu:

   Please enter host source file name (or RETURN):

   Type the file name you wish to use and press [↵]. (If you do not wish to change this field, simply press [↵].) The new file name appears in the "Host source file name:" field.

2. The following message is then displayed in the bottom section of the Transfer from Host Menu:

   Please enter local destination file name (or RETURN):

   Type in the file name you wish to use and press [↵]. (If you do not wish to change this field, simply press [↵].) The new file name appears in the "Local destination file name:" field.

For example, suppose that you had named your local destination file REPOT instead of REPORT. To make the correction:

- Press the START OVER function key.
- DSN/LINK requests the "host source file name". Since you do not wish to change this entry, press [↵].
- DSN/LINK requests the "local destination file name". Type the new name (REPORT), and press [↵].

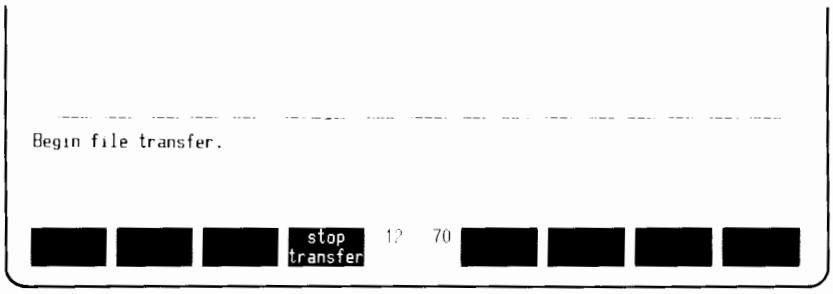
The information in the Transfer to Host Menu is now accurate, and the following message is displayed:

Please select a function.

Transferring the File

After you have filled in the Transfer from Host Menu and made any changes or corrections, you are ready to transfer the file from the HP 3000 to the Series 100.

Press the START TRANSFER function key. The following message appears in the bottom section of the menu, and the function keys change as follows:



After several seconds of set-up time, DSN/LINK begins the file transfer, and the following message is displayed:

File transfer in progress.

The field in the center section of the menu labeled ''Records transferred:'' keeps changing, indicating how many records have been transferred. During the transfer operation, you may compare the ''Records transferred:'' field in the top section with the ''Number of records:'' field in the center section of the Transfer from Host Menu to determine when the transfer is completed.

NOTE

When moving ASCII files, many short records are collected into a single block and moved at once. This causes the "Records transferred" count to move forward in large increments, rather than one count at a time.

When the entire file is transferred to the Series 100, the following message is displayed on the screen:

Host to local file transfer complete.

The function keys return to the following on the Transfer from Host Menu:

START OVER	START TRANSFER	main menu

Stopping the File Transfer

While the file transfer is in progress, the only function key label displayed on the screen is:

stop transfer

1. To stop the file transfer in progress, press STOP TRANSFER. The function key labels change to the following:

CONTINUE TRANSFER	CONFIRM STOP

2. At this point, you may press the CONTINUE TRANSFER or the CONFIRM STOP function key.

   a. If you press the CONTINUE TRANSFER function key, DSN/LINK resumes the file transfer, starting where it left off.

   b. If you press the CONFIRM STOP function key, the function key labels change so that TIME OUT/EXIT is the only function key displayed, and the following message appears on the screen:

"Waiting for host response"

3. After several seconds, the HP 3000 signals that the transfer operation is aborted. The message "**Operation aborted**" appears on the screen, and the function key labels change to the following:

START OVER	START TRANSFER	main menu

   a. Press the START OVER function key if you wish to re-enter the source and destination file information in the Transfer from Host Menu.

   b. Press "main menu" if you want to exit the Transfer from Host Menu and return to the DSN/LINK Main Menu.

NOTE

If several minutes elapse without a response from the HP 3000, press the TIME OUT/EXIT function key. "Transfer from host" terminates, and the DSN/LINK Main Menu appears on the screen. Press [↵] to verify that you are still logged on to the HP 3000.

If the system prompt (:) does not appear when [↵] is pressed, or if you have pressed the TIME OUT/EXIT key more than one time, data communications with the HP 3000 may be interrupted, or there may be some other error condition. You must abort DSN/LINK manually, as follows:

(1) Press the BREAK key (located near the function keys).

(2) Press the ESC key, then type a colon (:) and press [↵]. Note that the colon will not be displayed on the screen as you type it; however, it will appear after [↵] is pressed. (These steps will return the Series 100 to full duplex mode, so that characters entered on the keyboard may be displayed on the screen.)

(3) Type "abort" and press [↵]. The following message appears on the screen:

PROGRAM ABORTED PER USER REQUEST.

Performance Considerations

The following table provides measured performance characteristics for transfers from the HP 3000 to the Series 100. This data applies equally to ASCII and Binary file transfers. However, these times are only approximate and may vary according to the processing load on the host computer.

Selected Baud Rate	Effective Baud Rate	Approximate Transfer Time (based on 10,000 characters)
300	260	6:24 Min
1200	950	1:35
2400	1722	:58
4800	2630	:38
9600	3660	:27

Transfers from the HP 3000 to the Series 100 are significantly faster than transfers to the host at 4800 and 9600 baud.

Chapter 6

LOGGING WITH A SERIES 100

This chapter discusses the Series 100/DSN/LINK logging feature and its uses. Instructions are also provided to access the logging function keys and select logging devices (either a local printer, a local disc file, or both).

General Information on Logging

"Logging" is simply recording data which is transmitted to the Series 100 by the host computer. This data is recorded (or "logged") character by character to either a local printer or Series 100 disc file (or both devices at once).

Logging has several important uses:

- First, logging can be used to record complex sequences of host computer commands for future reference.
- Second, logging can be used to get a quick copy of data generated by the HP 3000.
- Finally, logging can be used to record simple file transfers from a "non-HP 3000" host computer. (Refer to Chapter 8, "Transferring Files with Other Host Computers," for more information.)

There are a couple of things to remember when using the logging feature of DSN/LINK.

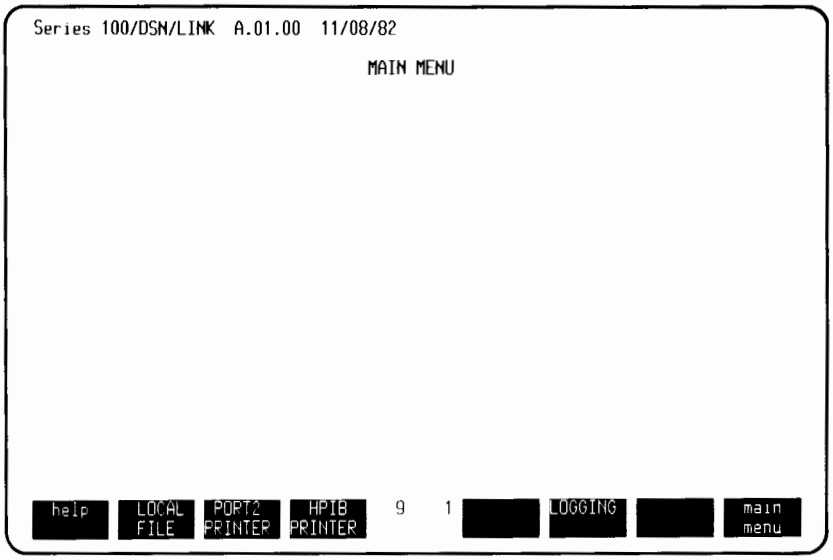
1. The device selections made in DSN/LINK are totally independent of device selections made using the ''Printer Mode'' function keys. Therefore, the PRINTER CONTROL and PRINTER MODE function keys available when using the Series 100 as a terminal are not available while DSN/LINK is running.

2. The selections made in the ''General List Device'' section of the Configuration Menu are independent of the logging devices selected in DSN/LINK.

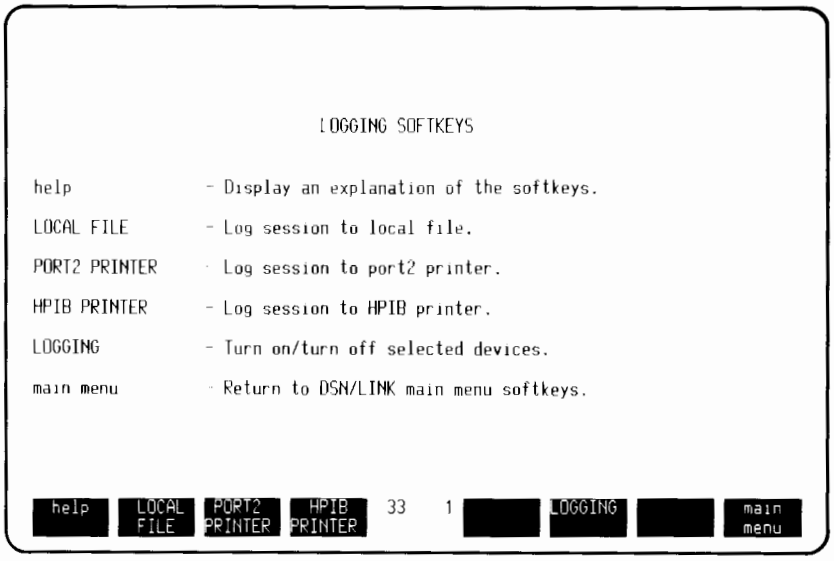
Before you load DSN/LINK to use the logging feature, verify that your printer is properly installed. If you are using a printer connected to Port 2 of the Series 100, check that the Port 2 section of the Configuration Menu is properly set up. (For further assistance in installing your printer, refer to the *Installation Guide* for your Series 100.)

Accessing the Logging Function Key

To set up logging devices to record interactions with the HP 3000, you must first access the logging function keys. To do so, press the "logging options" function key while the DSN/LINK Main Menu is displayed. The function keys change as follows:



Notice that the DSN/LINK Main Menu is still active. Press the "help" key to display explanations of the logging function keys, as follows:



These function keys are further described below:

help	Displays an explanation of the logging function keys on the screen.
LOCAL FILE	Selects a Series 100 disc file as a logging destination.
PORT2 PRINTER	Selects the printer connected to Port 2 of the Series 100 as a logging device.
HPIB PRINTER	Selects the printer attached to the Series 100 by an HP-IB cable as a logging device.
INTERNAL PRINTER (if applicable)	Selects the internal printer built into the top of your Series 100 as a logging device. (The label for function key [f5] is blank if you do not have an internal printer.)

LOGGING	Allows you to enable or disable the logging function. Logging is enabled when there is an asterisk in the function key and disabled when there is no asterisk in the function key label.
main menu	Returns the DSN/LINK Main Menu function keys to the screen.

Selecting the Logging Devices

Once the logging function keys are accessed, you are ready to select the logging devices. You may select a local printer, a local file, or both. The following sections outline the steps required to log to these devices.

Logging to a Local File

To record data to a local file, perform the following steps:

1. Press the LOCAL FILE function key and the following message appears on the screen:

   Please enter local log file name (or RETURN):

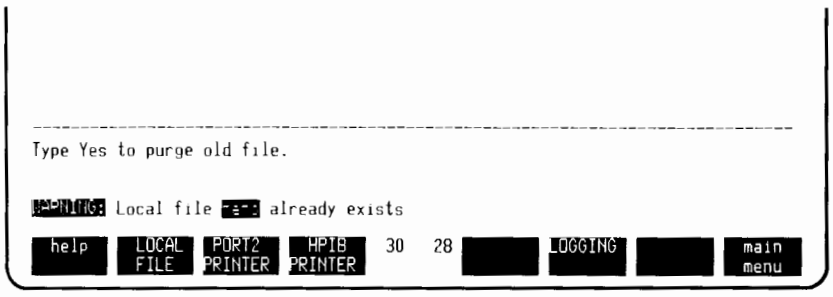
   DSN/LINK asks you to enter the name of a local file where you want to record activity with the host computer.

2. Type in the file name, preceded by the appropriate disc drive identifier. (The file name you supply at this point should be a valid Series 100 file name. Refer to the *Series 100 Owner's Manual* for more information.)

   For example, if you wanted to log the data to a Series 100 file called EXAMPLE.TXT on the "B" disc, type:

   B:EXAMPLE.TXT

If the file name you select already exists on the indicated drive, the following warning and instruction are displayed in the bottom section of the screen:



a. If you want to replace the old version of the file name specified, type "YES" (or "Y") and press [↵].

b. If you do not want to purge the old version of your file, type "NO" (or "N") and press [↵]. You are then prompted to re-enter a file name.

Once you have entered the file name, DSN/LINK creates a new file by that name on your disc. An asterisk appears in both the LOCAL FILE function key label and in the LOGGING function key label. Your local file is now selected as a logging destination, and all interactions with the host will be recorded to the local file.

(If you do not wish to have all of the session recorded, refer to the section on "Using the LOGGING Function Key" for instructions on enabling/disabling logging.)

3. When you finish logging to the local file, press the LOCAL FILE function key again. The asterisks disappear from the function key labels and the local logging file is closed. DSN/LINK automatically updates the disc directory with the file name you specified for the local logging file.

Viewing the Local Logging File

The contents of your local logging file cannot be viewed while DSN/LINK is running. If you wish to view the file, you may use one of the following methods:

1. Transfer the file to the HP 3000 and use the HP 3000 Editor program to view the file. (Refer to Chapter 4 for transferring files to the HP 3000, and the *HP 3000 Reference Manual* for the Editor program.)

   (or)

2. Exit from DSN/LINK and use CP/M to view the file contents, as follows:

   a. Press the "main menu" function key to display the DSN/LINK Main Menu on the screen.

   b. Press the EXIT DSN/LINK function key to exit from DSN/LINK.

   c. Press the EXIT TO CP/M function key to access the CP/M prompt (A>). The prompt indicates that CP/M is waiting for you to enter a command.

   d. Type the following command and press [↵]:

      TYPE (local filename)

      The contents of your logging file are now displayed on the Series 100 screen.

To continue logging, you must return to the Main Menu and access the logging function keys.

Logging to a Local Printer

The Series 100 identifies printers by the way in which they are attached to the system. There are three options:

INTERNAL PRINTER	A printer that is built into the Series 100.
PORT 2 PRINTER	A printer that is attached to the Series 100 by an RS-232 cable (usually connected to Port #2).
HPIB PRINTER	A printer that is attached to the Series 100 by an HP-IB cable.

If you are unsure of the type of attachment for your external printer, trace the cable from the printer to the Port 2 or HP-IB connection on the back of the Series 100. (Refer to your *Installation Guide* for further information.)

To record data to a local printer, perform the following steps:

1. Press the function key with the label corresponding to the type of printer you wish to use. If your printer is not properly connected, an error message is displayed.

   If your printer is properly connected, an asterisk appears in the function key label and in the LOGGING function key label. Your printer is now selected as a logging device. Any data entered on the screen will be recorded to the local printer.

   (If you do not wish to have all of the session recorded, refer to the section on ''Using the LOGGING Function Key'' for instructions on enabling/disabling logging.)

2. When logging to the printer is complete, press the function key again for the printer you selected. The asterisks disappear from both the printer and LOGGING function key labels. Your printer is no longer available for logging.

Logging to a Local File and Local Printer Simultaneously

The logging feature of DSN/LINK allows you to log your interactions with the HP 3000 to both a local file and a local printer simultaneously. You then receive the printed output as well as the file stored on your local disc (which you may use at a later time).

To log to these two devices simultaneously, perform the following steps:

1. Press the LOCAL FILE function key. The asterisk will appear in this and the LOGGING function key.

2. Press the function key for the printer you wish to use. An asterisk will appear in this function key label as well; the other function key labels remain the same. (A slight flickering may occur, however, when the second device is selected).

3. When logging is completed, press the function keys again. The asterisks disappear from all the labels previously selected.

NOTE

You may not log to two printers at the same time, since both printers would use the same input/output channels within the Series 100.

Using the LOGGING Function Key

When a device is first selected for logging, an asterisk appears in the function key label corresponding to the selected device and also appears in the LOGGING function key label.

The LOGGING function key is essentially a "toggle" switch, used to turn on or turn off the logging function. The asterisk appears in the LOGGING function key label when the function key is pressed and logging is turned on, and disappears when the function key label is pressed the second time and logging is turned off.

You may temporarily suspend logging at any time by pressing the LOGGING function key. When you do this, the selected logging device(s) remain active, and logging can be resumed by pressing the LOGGING function key again.

The ability to suspend logging is most important when logging to a local file. When logging is suspended, the local file is closed and the directory is updated. The particular file remains selected, however, and you may continue to log to the same file by pressing the LOGGING function key again.

Additional Information on Logging

The logging capabilities of DSN/LINK are quite similar to using the LOG BOTTOM function key available under the PRINTER CONTROL feature when the Series 100 is used as a terminal. (LOG BOTTOM may be reached by pressing the AIDS key, then pressing the PRINTER CONTROL function key on the Series 100. For more information, refer to the *Series 100 Owner's Manual.)*

However, there are two important distinctions:

1. The LOG BOTTOM feature only allows logging to a local printer. The logging feature in DSN/LINK allows you to log to a local file as well as to a local printer.

2. The LOG BOTTOM feature allows you to log both the interaction with your host computer and the interaction with CP/M. The logging feature in DSN/LINK allows only the interaction with your host computer to be logged. (This restriction exists because DSN/LINK is running under CP/M.)

Chapter 7

CREATING AND EXECUTING COMMAND FILES

This chapter discusses using local command files with Series 100/DSN/LINK, as follows:

- describes the characteristics and functions of a command file in DSN/LINK
- provides instructions for creating a command file (on either the Series 100 or the HP 3000)
- shows how to use "command" softkeys to execute either the command file or a command directly

What Is a Command File?

A command file is a CP/M data file containing character strings of pre-defined computer commands (which are discussed in the following sections). These character strings may be interpreted in two different ways:

1. as a host computer command and sent to the host computer; or

2. as a local command and executed locally

The interpretation of the character string is dependent on the character ''&''. When DSN/LINK encounters the ''&'' character as the first character in a string, it knows that the string is a local command.

A majority of the character strings in your command files will be the first type (they will be host computer commands or commands to run a host computer program).

The character strings in a command file must be separated by a <carriage return> (<CR>) and/or a <line feed> (<LF>). A line containing just the <carriage return><line feed> chraracters is created by putting a ''blank'' line in your command file.

In addition to the ability to execute an existing command file, you may enter one of the pre-defined Series 100 commands directly or invoke a command file via a user-defined softkey. The keyboard is still live, so that host commands may be entered directly.

Series 100 Commands

A complete listing of pre-defined commands for the Series 100 is provided in Appendix B.

For example, commands for the Series 100/DSN/LINK allow you to:

- get batch access to DSN/LINK capabilities
- do simple modifications to the data communications configuration
- define an enhanced, softkey-driven interface to other host programs

HP 3000 Commands

On the HP 3000, commands to the MPE (Multi-Programming Executive) Operating System allow you to initiate, control, and terminate the processing of HP 3000 programs and to request various other system operations. For example, HP 3000 commands allow you to:

- initiate an interactive session (:HELLO command) or batch job (:JOB command)
- create, save, and delete files (:BUILD, :SAVE, and :PURGE, respectively); specify and list their characteristics (:FILE and :LISTF); dump them offline and subsequently restore them to the HP 3000 system (:STORE and :RESTORE)
- communicate with other users (:TELL) and with the System Operator (:TELLOP)
- obtain assistance (:HELP)

Many other HP 3000 MPE commands are available. Refer to Section II of the *HP 3000 MPE Commands Reference Manual* (Part No. 30000-90009) for further information.

How to Create a Command File

Command files may be created either on the Series 100 or on the HP 3000. If they are created on the HP 3000, they need to be transferred to the Series 100 using the Transfer from Host Menu in DSN/LINK.

Creating a Command File on the Series 100

An example using Series 100/Word to create a command file is provided below:

1. Load Series 100/Word software into your Series 100.

2. Enter the Edit Mode of Series 100/Word.

3. Type the commands you want in the command file. Separate commands by pressing [↵] after each command. (This will put a "<" after each line.)

4. Enter the Command Mode of Series 100/Word.

5. Press the DISC FUNCTION function key, then press the SAVE FILE function key. Series 100/Word will prompt:

   WRITE FILENAME>

6. Type in the disc drive designator and the file name. For example, if you wanted to name your file "COMMAND.ED" and save the file on the "B" disc, type the following and press [↵]:

   B:COMMAND.ED

   The disc drive designator is a single letter (A, B, C, ... etc.) followed by a colon. It is used to tell Series 100/Word which disc you want your file stored on. Refer to your *Series 100 Owner's Manual* for more information on file names.

7. Series 100/Word saves the contents of the screen to a file on disc.

Creating a Command File on the HP 3000

If you do not wish to use Series 100/Word to create a command file, you may use the Series 100 as a terminal and create a command file on the HP 3000.

To do so, use the HP 3000 Editor program to create your text file containing the commands you wish to use. (Refer to the *HP 3000 Editor Reference Manual* for more information on creating and saving text files on the HP 3000.)

After you save your command file on the HP 3000, transfer the file to the Series 100 using the Transfer from Host Menu. (See Chapter 5, ''Transferring Files from the HP 3000 to the Series 100,'' for more information.)

Command File Limitations

When you create a command file, you need to be aware of some limitations.

1. The HP 3000 :HELLO command should be preceded by a line containing just the <carriage return><line feed> characters.

   This is necessary because the HP 3000 MPE Operating System expects a <carriage return> character before the :HELLO command. (A line containing just the <carriage return><line feed> characters can be created by putting a ''blank'' line in your command file.)

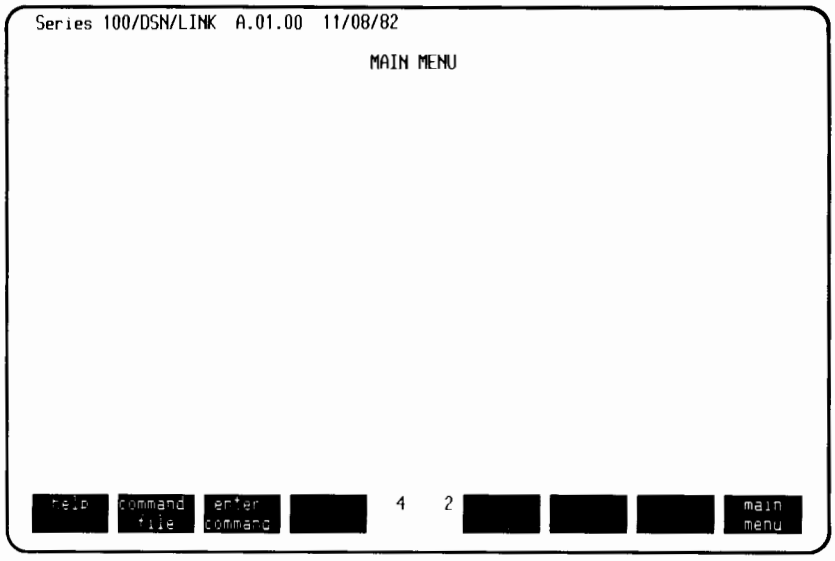
2. Using the :BYE command will cause DSN/LINK to get ''stuck'' in an abnormal state. This occurs because DSN/LINK expects a response from the HP 3000 after each command, and the HP 3000 does not send a response after the :BYE command.

   Therefore, use the HP 3000 :BYE command in a Series 100 command file only in the following format:

   ```
   &TERMINATOR OFF
   BYE
   &TERMINATOR '^Q'
   ```

Using the Command Softkeys

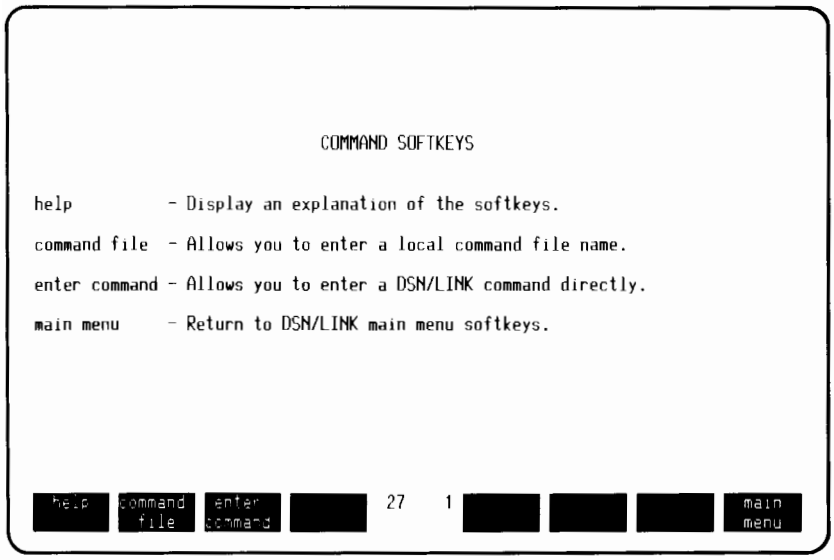
Once you create a command file and store it on your Series 100 disc, you are ready to access the "command" softkeys. To do so, press the "command" function key while the DSN/LINK Main Menu is displayed on the screen. The function keys change as follows:



Notice that you are still in the DSN/LINK Main Menu.

The "help" Key

After you have accessed the "command" softkeys, press the "help" function key for an explanation of the softkeys. The following information is displayed on the screen, and is further described below:



help	Displays an explanation of the softkeys.
command file	Prompts you to enter the name of the local command file. This file may contain special commands that are interpreted locally, or lines of data that are sent to the host as if they came from the keyboard.
enter command	Prompts you to enter one of the special DSN/LINK commands (listed in Appendix B).
main menu	Returns to DSN/LINK Main Menu softkeys.

In addition to these softkeys, you can provide your own definitions for the softkeys. When these keys are pressed, a command file is invoked or a single line is sent to the host. These softkeys are redefined by a set of special commands described in Appendix B.

The "command file" Key

When you press the "command file" function key, the following message is displayed in the bottom section of the screen:

Please enter a local command file name (or RETURN):

Type the command file name, preceded by the appropriate disc drive designator, and press [↵].

The command file starts to execute. DSN/LINK reads the lines of your command file sequentially and sends the commands to the HP 3000 (or other host computer), or processes the commands locally. If the command file lines are being sent to the host computer, DSN/LINK waits for a prompt from the host computer before sending the next line.

After the command file finishes executing, the following message appears on the screen:

End of command file.

Since you are still in the Main Menu, press any of the function keys to access another DSN/LINK function.

The "enter command" Key

Only those commands which begin with the "&" character are processed locally. These commands may be entered directly by pressing the "enter command" function key. The following message appears in the bottom section of the screen:

Please enter a command directly:

Type in the command and press [↵]. The following message is then displayed on the screen:

Command accepted.

Stopping the Command File

While the command file is being executed, there is only one function key label displayed on the screen:

STOP
COMMAND

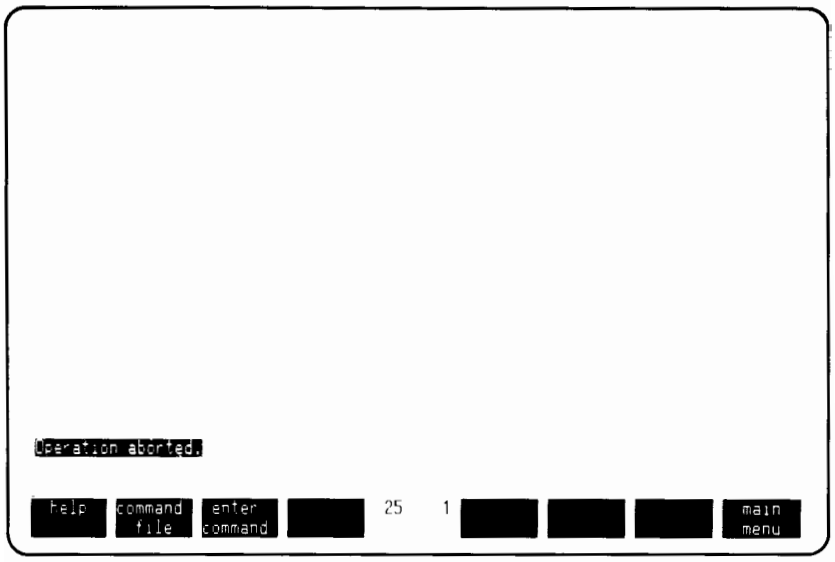
Pressing the STOP COMMAND function key causes the command file to stop executing. (However, the command which is currently in process completes execution first.) It also causes the function key labels to change to the following:

CONTINUE	CONFIRM STOP

At this point, you may press either the CONTINUE or CONFIRM STOP function key.

a. If you press the CONTINUE function key, DSN/LINK resumes executing the command file.

b. If you press the CONFIRM STOP function key, the function key labels return to the command softkeys (shown below) and the following message is displayed on the screen:



You may re-enter a command or command file name, or return to the DSN/LINK Main Menu by pressing the desired function key.

Chapter 8

TRANSFERRING FILES WITH OTHER HOST COMPUTERS

As discussed in previous chapters, the file transfer capabilities of Series 100/DSN/LINK are designed primarily for use with the HP 3000 as the host computer system. However, files may be transferred successfully with "non-HP 3000" computers.

This chapter discusses the steps you need to take to:

- prepare your Series 100 and the host computer for data communications
- transfer files from the host computer using the logging function
- transfer files to the host computer using command files
- create a special host file transfer program

Preparing Your Series 100

There are a few steps you need to take to prepare your Series 100 for data communications, which are listed below:

1. Before you use a new application program (such as Series 100/DSN/LINK), it must be installed from your Application Disc to a Work Disc. Refer to the *Series 100 Owner's Manual* for

instructions on using the Install mode. (This process copies the application program and makes it accessible on your Work Disc by a single keystroke from the Welcome Menu.)

2. Format an extra disc before running DSN/LINK. The extra disc will be used to store your command files and data files. (Refer to the *Series 100 Owner's Manual* for instructions on formatting discs.)

3. Set up the Terminal Configuration menu. (Refer to instructions in the *Installation Guide* for your Series 100 Computer.) Verify that the Baud Rate—the speed at which data is transmitted to and from the host computer—is set to match the speed at which your host computer is set. (Your system manager can provide this information.)

Preparations for the Host Computer

Before using Series 100/DSN/LINK, make arrangements with your system manager to have access to the host computer.

1. You will be assigned a user name, account name, and possibly a password. (A password is a security code which identifies you to the host computer.) This information will be required each time you access (''log on'' to) the host computer.

2. Your system manager must arrange to have a host system port available at your workstation. (This port is usually a connector which allows the computer to transmit or receive information.) Confirm that the cabling is connected from either port on your Series 100 Computer to the port on the host computer. (Refer to your *Installation Guide* for details.)

3. Check to be sure your Series 100 will communicate with the host as a terminal. (Refer to the *Series 100 Owner's Manual* for information on using Remote Mode.)

NOTE

If the Series 100 will not function as a terminal to the host computer, you will be unable to use DSN/LINK.

Methods of File Transfer

Series 100/DSN/LINK may be used to transfer files with most host computers. There are two ways in which a file may be transferred with "non-HP 3000" computers.

NOTE

The Transfer to Host and Transfer from Host Menus are not used in transferring files with a non-HP 3000 host computer.

The first method uses logging and command file capabilities of DSN/LINK. (You transfer files FROM the host using the logging feature, and transfer files TO to the host using command file capabilities.) These methods of transferring files with "non-HP 3000" computers require that you follow step-by-step procedures to transfer a file.

In the second approach, you must create a special file transfer program for the host computer. This method is discussed more fully in the section "Transferring Files with a Special Host File Transfer Program." (In addition, the file transfer protocol for the Series 100 is provided in Appendix D.)

The method you choose depends on the availability of programming resources at your installation as well as your technical ability. The first method requires no special programming on the host computer, but the user interface for transferring files is somewhat complex. The second method requires special programming for the host computer. Both methods are discussed in the following sections.

Transferring Files *from* the Host Computer Using the Logging Feature

A file can be transferred from the host computer to your Series 100 using the logging feature of DSN/LINK, as follows:

1. Follow the procedure in Chapter 3 (''Running DSN/LINK'') to ''log on'' to your host computer system and display the DSN/LINK Main Menu on the Series 100 screen.

2. Press the ''logging options'' function key. Follow the procedure in Chapter 6 (''Setting Up Logging Devices'') to set up a local file as a logging device. Make sure the LOGGING function key is turned on. (This is denoted by an asterisk (*) which appears in the function key label after it is pressed.)

3. Type the command to your host computer which will list a file to the Series 100 screen, and press [←].

NOTE

Because LOGGING is enabled, the file will be automatically recorded to the Series 100 local file as well as displayed on the screen.

---

4. When the file finishes listing to the screen, press the LOCAL FILE function key to turn off logging to the local file. (Note that the LOGGING function also turns off when the LOCAL FILE function key is disabled.)

The file transfer from your host computer to the Series 100 is now complete, with the contents of the host computer file contained in a disc file on the Series 100.

After the transfer is complete, you may want to review the Series 100 disc file. The logging feature records everything on the Series 100 screen to your local disc, so there may be unwanted leading and trailing characters now in the local file. To delete any extra characters, you may use either the CP/M Editor, Series 100/Word, or Wordstar/100 program.

Transferring Files *to* the Host Computer Using Command Files

A file may be transferred to the host computer from your Series 100 using the command file feature of DSN/LINK. There are two different ways to accomplish the transfer using command files:

- The first makes use of an editor program on your host computer system;
- The second makes use of a special host file transfer program you create on the Series 100 which runs on the host computer system.

Transfers Using a Host Editor

You may use a host editor to transfer a file from the Series 100 to your host computer as follows:

1. Follow the procedure in Chapter 3 (''Running DSN/LINK'') to ''log on'' to your host computer system and display the DSN/LINK Main Menu on the Series 100 screen.

2. With the Main Menu displayed on the screen, type the command to run an editor program on your host computer and press [↵].

3. Enter the insertion mode for your host editor program. (The insertion mode should cause data typed at the Series 100 keyboard to be recorded as text.) Check with your system manager for appropriate reference manuals to help you use the host editor program.

4. Press the ''command'' function key displayed on your screen to access the command softkeys on the DSN/LINK Main Menu.

5. Press the ''command file'' function key. The Series 100 prompts you for the name of the local file you wish to transfer. Enter that local file name and press [↵].

   The local file is then transferred, line by line, to your host computer (as though it were a command file). When each line is received by your host computer, it is recorded by the host editor.

NOTE

DSN/LINK expects the host computer to send a terminator character (usually ''DC1'') to the Series 100 after each line is received. The terminator character must be received before the next line can be sent. You may redefine the terminator by using a ''&TERMINATOR'' command in the command file. (Refer to Appendix B for more information.)

---

6. When the entire file is read and transferred, type the command which saves the host editor file, then exit from the host editor program.

The file transfer from the Series 100 to your host computer is now complete, and the contents of your Series 100 disc file are contained in the host computer editor file.

NOTE

To simplify the task of transferring files to the host computer using DSN/LINK, you may prepare a command file which includes the following:

a. the necessary host commands to start the editor program and enter insert mode;

b. a command to send the local file up to the host; and

c. the necessary host commands to KEEP the file and exit the editor program at the end of the transfer.

Transferring Files with a Special Host File Transfer Program

If you do not have access to an editor program on your host computer system, you may want to use the following method to transfer a file from the Series 100 to your host computer:

1. Create and store a file transfer program for your host computer to log incoming characters and acknowledge their receipt. The following BASIC progarm may serve as a model:

```
1000 DEFINE FILE #1="LOG"
1010 INPUTLINE "",A$
1020 IF LEFT (A$,1)="&" THEN GOTO 1060
1030 WRITE#1,A$
1040 PRINT CHAR(17);    'send DC1 to Series 100
1050 GOTO 1010
1060 PRINT "Good bye"
1070 CLOSE#1
1080 STOP
```

NOTE

The sample BASIC program listed above automatically closes the file on your host computer system and exits when the "&" character is received.

---

2. Follow the procedure in Chapter 3 ("Running DSN/LINK") to "log on" to your host computer system and display the DSN/LINK Main Menu on the Series 100 screen.

3. With the Main Menu displayed on the screen, type the command to run your special host program and press [↵].

4. Press the "command" function key displayed on your screen to access the command softkeys on the DSN/LINK Main Menu.

5. Press the "command file" function key. The Series 100 prompts you for the name of the file you wish to transfer. Enter that local file name and press [↵].

   The local file is transferred, line by line, to your host computer (as though it were a command file). When each line is received by the host computer, it is automatically recorded into a host disc file.

6. When the entire file has been read and transferred, type the command necessary to exit from your special host program and press [↵].

The file transfer from the Series 100 to your host computer is now complete. The contents of your Series 100 disc file are transferred to the host file specified by your special host file transfer program.

Appendix A

TROUBLESHOOTING GUIDE

This appendix provides descriptions of error and warning messages that may appear while you are using Series 100/DSN/LINK. These messages can help determine if you have made an error or if there has been a malfunction in your system.

Error and Warning Messages

An error or warning message may appear on the screen while you are using DSN/LINK. The message does not mean that you have destroyed the DSN/LINK program or your files, but rather is a status message if something cannot be processed or would be destroyed. In most cases, the message will tell you what you need to do in order to continue using DSN/LINK.

BINARY OR ASCII EXPECTED	The record type specified in a &DSCOPY command is incorrect.
BLOCK SIZE MUST BE IN RANGE 1 to 515	The block size specified in a &BLOCKSIZE command is not supported. (Block size cannot be zero or over 515 bytes.)

CANNOT START HP 3000 TRANSFER PROGRAM	Check that you logged on to the HP 3000. To verify, press [↵]. The system prompt (:) should be displayed if you are communicating at the HP 3000's operating system level. You should not be running in any particular program on the HP 3000 at this time. In addition, Series 100/DSN/LINK requires that the host file transfer program ''LINK100.PUB.SYS'' be installed on your HP 3000 in order to transfer files.
CLOSE OF LOCAL FILE XXX FAILED	Unable to close a local file. Check that there is adequate disc space and directory entries. Also check that the correct disc is in the disc drive.
COMMUNICATION PROBLEM LINE IS TOO NOISY	There is a problem with the data communication line. You must start over. This message may also appear when attempting to transfer to an HP 3000 which has a heavy processing load. You may need to introduce additional timeout with the &TIMEOUT command.
DISC DRIVE XXX NOT AVAILABLE	Check that a disc is in the disc drive. Also check that the drive is connected.

DSNLINK.DAT NOT FOUND ON DEFAULT DRIVE	You must re-install DSNLINK.DAT from the Application Disc.
END OF FILE ON XXX	The file you named is empty. Check that this is the correct file.
FILE EQUATE INCONSISTENT WITH FILE ATTRIBUTE	This message may appear in the Transfer to Host Menu. Re-enter the file equate.
''FULL'' OR ''HALF'' EXPECTED	In the command ''&DUPLEX'', you must specify either ''FULL'' or ''HALF'' duplex.
HOST ARITHMETIC ERROR	First, start over and retry the communication; if the error message is again displayed, notify factory support by filling in the reader comment card at the back of this manual, documenting the situation as it occurred, and mailing the card as soon as possible.
HOST FILE EXISTS. IT WILL BE OVERWRITTEN	This message is displayed when you select a host file name that already exists. The file is not purged until you press the START function key.
HOST FILE UNDEFINED	This message is displayed when you attempt to start a file transfer without providing the host file name.

HOST FILE UPLOAD ROUTINE NOT AVAILABLE	This is a message in the Upload program that indicates the HP 3000 program "FCOPY.PUB.SYS" is not available. Check that you are communicating with the operating system level of HP 3000.
HOST FILE XXX DOES NOT EXIST	Check that the host file exists. (On the HP 3000 use the :LISTF command.)
HOST FILE XXX HAS ILLEGAL PASSWORD	File is protected by a unique password (lockword). If this is your file, check with the system manager. If the file was created by another user, check with them for the password for this file.
HOST FILE IS INACCESSIBLE	DSN/LINK has been unable to access a host file. Check that the security system on your host computer does not prevent you from gaining access to the file.
HOST IS NOT RESPONDING, RESTART PROGRAM WITH BAUD RATE < 2400	For installation of the host file transfer program, set the Baud Rate to 2400 or lower. (See Chapter 2.)
HOST PASCAL ERROR	First, start over and retry the communication; if the error message is again displayed, notify factory support by filling in the reader comment card at the back of this manual, documenting the situation as it occurred, and mailing the card as soon as possible.

HPIB PRINTER ERROR	Some error was encountered while accessing the HPIB printer. Check that the printer is turned on, cables connected, and switches properly set.
HOST SYSTEM ERROR	First, start over and retry; if the error message is again displayed, notify your system manager.
INSUFFICIENT SPACE ON HOST SYSTEM	There is not enough space on the host disc drive. List your files on the host system and purge any that you do not need. (Check with your system manager for assistance, or refer to the *HP 3000 MPE Commands Reference Manual.*)
ILLEGAL PACKET	First, start over and retry your transmission; if the error message is again displayed, notify factory support by filling in the reader comment card at the back of this manual, documenting the situation as it occurred, and mailing the card as soon as possible.
INTERNAL PRINTER ERROR	Some error was encountered while accessing the internal printer. Check that the printer is turned on, cables connected, and switches properly set.

INTRINSIC ERROR	First, start over and retry your communication; if the error message is again displayed, notify your system manager.
INVALID COMMAND	Check that the command file does not have any invalid special commands. (A special command is a command beginning with ''&''.)
INVALID DRIVE NAME XXX	Check that the disc drive you have designated is valid. The disc drive designator is a letter (A, B, C, ... etc.).
INVALID HOST FILE NAME XXX	Check that the host file name you have entered is valid. The file name must be entered in the form: filename/password.groupname.accountname
INVALID LOCAL FILE NAME XXX	Check that the local file name you have entered is valid. The file name must be entered in the form: drive:filename.filetype
INVALID REPLY XXX. MUST BE YES/NO	In response to a question asked by DSN/LINK, you must answer with ''YES,'' ''NO,'' ''Y,'' or ''N.''
INVALID PARAMETER	Check that the syntax of the command file is correct.

LOCAL DISC XXX IS READ ONLY	Check that the correct disc is in the disc drive. Also check that the write protect tag is on for an 8″ disc, off for a 5¼″ disc, and in and down for a 3½″ disc.
LOCAL FILE EXISTS. IT WILL BE OVERWRITTEN	This message is displayed when writing to a file that already exists. The file is not purged until you press the START function key.
LOCAL FILE IS UNDEFINED	This message is displayed when you attempt to start a file transfer without providing a local file name.
LOCAL FILE XXX ALREADY EXISTS	Message appears while in logging, followed by the message ''Type YES to purge old file.''
LOCAL FILE XXX ALREADY IN USE	This message is displayed when you attempt to transfer an active logging file. Disable logging before trying to transfer the file.
LOCAL FILE XXX DOES NOT EXIST	Go into the Utility Menu and use ''directry'' to check that the local file exists.
LOCAL FILE XXX IS READ ONLY	This message occurs when you try to write to a local file that has been given ''read only'' status. You may have to reset the Series 100.

LOCAL PROGRAM ERROR	This message indicates a problem in DSN/LINK. It should not occur during normal use of DSN/LINK. Call system support.
MISSING QUOTE	Check the command displayed.
NO MORE SPACE ON DRIVE X	The disc in drive XXX is full.
''ON'' OR ''OFF'' EXPECTED	Check the command displayed.
OPEN OF LOCAL FILE XXX FAILED	The CP/M Operating System cannot open the file on your disc. (Your directory may be full.)
PARAMETER IS REQUIRED	Check the command displayed.
PARAMETER MUST BE A VARIABLE	Check the command displayed.
PARAMETER MUST BE A CHARACTER STRING	Check the command displayed.
PARAMETER MUST BE NUMERIC	Check the command displayed.
PORT2 PRINTER ERROR	Some error was encountered while accessing the printer on Port 2. Check that the printer is turned on, cables connected, and switches properly set.
PURGE OF LOCAL FILE XXX FAILED	DSN/LINK has been unable unable to purge a local file. Check that the correct disc is in the disc drive.

READ ERROR ON XXX	The CP/M Operating System cannot read the file on your disc.
READ/WRITE ERROR ON HOST FILE XXX	Try again; if the error message is repeated, inform the system manager.
RECORD SIZE MUST BE BETWEEN 1 AND 512	You have specified a number too large in the ''Record size:'' field. DSN/LINK accepts only numbers from 1 to 512.
''REMOTE'' OR ''LOCAL'' EXPECTED	Check the command displayed.
''TO'' EXPECTED	Check the command displayed.
UNABLE TO REOPEN LOGGING FILE	DSN/LINK cannot append data to a previously used logging file. Check that there is space available on your disc.
UNABLE TO SAVE HOST FILE XXX	DSN/LINK has been unable to save a file on your host computer. Check that the security system on your host computer does not prevent you from saving a file.
UNEXPECTED SYMBOL	Check the command displayed.

UNFORMATTED DISC IN DRIVE X	Your disc must be formatted with the Series 100 FORMAT utility before it can be used with DSN/LINK. (See the *Series 100 Owner's Manual* for more information on disc formatting.)
USER KEY MUST BE IN RANGE 1 TO 8	The range must be defined from 1 to 8 in your command.
VALUE IS TOO LONG XXX	You have typed too many characters in response to a question asked by DSN/LINK.
VALUE MUST BE GREATER THAN ZERO	Check for ''&TIMEOUT'' command.
VARIABLE MUST BE IN RANGE 1 TO 10	Check the command displayed.
XXX HAS RECORD SIZE GREATER THAN 4000	You should not attempt to transfer a host file with record sizes greater than 4000 characters.
XXX IS AN INVALID NUMBER	Numbers typed in response to DSN/LINK questions should not contain ''signs'' (+ or −) or decimal points. All numbers should be unsigned integers.
XXX LINES TRUNCATED	Transfer to host has been completed, but XXX lines have been cut off. It may indicate that an ASCII file record size is too small; retry with a larger record size. Or, start over and transfer the file as BINARY.

DSN/Monitor Error and Warning Messages

These error and warning messages are generated by DSN/Monitor. They are sent across the data communications line to the DSN/LINK workstation where they are displayed. Many of the errors correspond to DSN/LINK errors. The word "REMOTE" is added to indicate the message comes from DSN/Monitor.

INVALID PASSWORD	In response to the request for a password, you must enter the word that has been defined in the password file. DSN/Monitor will not allow any access until the correct password is given.
INVALID REMOTE COMMAND	In response to the "." prompt, DSN/Monitor received invalid input. Check the command you just entered. If you wish to send a message, you must begin the message with a period (.).
INVALID REMOTE DRIVE NAME *XXX*	Check that the disc drive you have designated is valid. The disc drive is a letter (A, B, C, ... etc.).
INVALID REMOTE FILENAME *XXX*	Check that the file name you have entered is valid. The file name must be entered in the form: drive:filename.filetype
MONITOR.DAT NOT FOUND ON DEFAULT DRIVE	You must re-install Monitor.DAT from the Application Disc.

NO MORE SPACE ON REMOTE DRIVE X	The disc in Monitor drive X is full.
REMOTE DISC DRIVE X IS READ ONLY	Contact someone on the Monitor workstation to check that the Monitor disc is not write-protected.
REMOTE DISC DRIVE X NOT AVAILABLE	Check that you have used a drive letter that actually exists on the Monitor system. Contact someone at the Monitor workstation to check that the Monitor drive is not empty.
REMOTE FILE XXX DOES NOT EXIST	Check that the file exists on the Monitor workstation. Use the "dir" command from the DSN/LINK Main Menu.
REMOTE FILE XXX IS READ ONLY	Have someone on the Monitor workstation check that the correct disc is in the disc drive and that the disc is write-enabled.
REMOTE PROGRAM ERROR	This message indicates a problem with DSN/Monitor and does not occur during routine use. Call system support.
UNFORMATTED DISC IN REMOTE DRIVE X	Have someone on the Monitor workstation format the disc or replace it with a formatted disc.

Appendix B

COMMAND FILE FEATURES

This appendix discusses the command language capability of Series 100/DSN/LINK, and includes a list of pre-defined host commands for the Series 100. Sample command files are also included in this chapter for the following host computers:

- HP 3000 (illustrating the various components of command files)
- HP 1000
- VAX (with UNIX operating system)
- The SOURCE (a data base service)
- Amdahl 470 (with TOS operating system), which is similar to an IBM 370 host system

Command Language

The DSN/LINK command language is flexible enough to allow use of control characters and symbolic parameters.

Symbolic parameters are simply parameters in a command file that may be replaced by a variable in the form &Pn, where n is an integer from 1 to 10. The symbol ''&Pn'' may be replaced with the value you wish to assign (such as a file name).

Symbolic parameters may be assigned by the &INPUT or &ASSIGN statements (described in the following section). The values of the parameters may be numeric or a character string (with an 80-byte maximum on character string length). Unassigned parameters will be treated as an empty string or a numeric zero.

Character strings, such as a file name, may be enclosed in single or double quotes if they contain ambiguous characters such as comma, space, or the ''&'' character. Control characters may be included in strings by first inserting a caret (i.e., '^C').

The symbol 'text' can be either:

- &Pn parameters, or
- a sequence of character strings, with or without quotation marks incorporated. (The various elements of the sequence are separated by commas.)

Series 100 Commands

Commands provided by Series 100/DSN/LINK are listed below, along with a brief description:

ASSIGN &Pn,text

Assign the given variable to the value 'text'.

&BLOCKSIZE n

Redefine the size of the data blocks transmitted. May be useful in data overrun situations. Default is 515 bytes.

&CHAIN filename

Close current file and start reading from the new command file.

&CHARDELAY n

Delay n milliseconds between each character when sending to the host. (Useful when host processing is heavily loaded.) Default is zero for less than 2400 baud and 3 milliseconds for 9600 baud.

&DISPLAY ON/OFF

Enable/disable displaying host computer activity to the screen.

&DSCOPY sourceid TO destid {; {BINARY} {, recsize}}

Sourceid and destid are local and host file names. The direction of the transfer is indicated by adding ",REMOTE" or ",LOCAL" after one of the file names. For example:

&DSCOPY pip.com TO temp,REMOTE;BINARY

You may also use the same syntax from the CP/M command prompt (A>) to transfer one or more files automatically either from a SUBMIT file or in a DSN/LINK command file, as shown in the example below:

A> DSNLINK pip.com to temp,remote;binary

&DUPLEX HALF/FULL

Half-duplex will echo keyboard data directly to screen. This is useful when entering commands directly to a half duplex machine such as most IBM machines.

&EXIT text

EXIT DSN/LINK. The text, if present, will be used as the termination message.

&FASTKEY n1,label,text

Give softkey n1 the given label and associate it with the given text. There is a limit of 80 bytes for the key definition.

&HEX ON/OFF

Translate data blocks into a 7-bit Hex format that is immune to transmission medium with special restrictions. To have the HP 3000 use Hex, include the command shown below:

```
&HOSTCOPY 'RUN LINK100.PUB.SYS; INFO="HEX" '
```

&HOSTCOPY host command

Redefine command that initiates host transfer program. Needed to invoke the host program before initiating a file transfer on non-HP 3000 systems, or when the host program is in a group and account other than PUB.SYS.

&HP 3000 ON/OFF

Disable the reliance on the DC1 character in the block checking protocol. Blocks will be sent whenever they are ready. (This feature should be useful in connection with the HEX command in working with X.25 protocol.)

&INPUT prompt,&Pn

Allow the user to give a value for a parameter.

&KEY n1,label,filename

Give softkey n1 the given label and associate it with the given command file name. This command file is invoked when the softkey is pressed.

&LOGFILE filename/OFF

Designate a file for logging. OFF means stop logging.

&MSG text

Display message to local screen only.

&NOLOG n1, n2, n3...

Don't log these characters. Default is to not log DC1 and zero. Control characters are preceded with a caret ('^C').

&OFFKEY

Turn off all user defined keys.

&PAUSE nn

Delay a set time before issuing the next command. Useful for autodial modems and in waiting for midnight to dial the host computer. The value given is a time duration (in seconds), not time of day.

&SEND text

Send text to host. Like ordinary command file line except may include embedded variables.

&SENDFILE filename

Send the contents of the given file to the host, one line at a time. The given file is not examined for ''&'' commands. This command is useful for dumping a data file into a host editor.

&TAB n1

Define number of characters for tab expansion. Default is 8. Many CP/M applications use tabs to save space. If no parameter is given, pass the tabs through.

&TERMINATOR n1/OFF

Redefine the host terminator character (default is DC1). Many non-HP 3000 systems prefer line feed or ASCII 10. If value is set to OFF, send data without waiting for any character.

&TIMEOUT n

Redefine the retransmission timeout period. (Default is 20 seconds.)

&! comment

Insert a comment into command file.

Sample Command Files

A command file may have one or more of the following components:

1. help - defines help messages appropriate for the host computer you are using

2. transfer - sets up softkeys for transferring files with host computer

3. send - moves the file by sending it into a host editor program

4. receive - moves the files from the host computer to the Series 100 and dumps the file to the screen

In order to successfully transfer files using Series 100/DSN/LINK, it is recommended that a command file for each of these components be prepared. The following pages provide examples of the help, transfer, send, and receive command files.

Sample HELP Command File

```
&! Filename is ''xhelp''
&! Help file for command file example.
&! User should put the appropriate help message for their
&! machines below.
&msg
&msg
&msg
&msg
&msg
&msg ''      Help messages for file transfer between Series 100''
&msg ''      and machine X.''
&msg
&msg
&msg
&msg
&msg
```

Sample TRANSFER Command File

```
&! Filename is ''xtrans''
&! Sample command files that illustrate customized
&! file transfer for DSN/LINK and an arbitrary host.
&!
&! Print transfer menu.
&msg ''^[H^[J'',''                File transfer with machine X''
&msg
&msg
&! Define softkeys for a new help function, transfer to and from
&! host, and customized exit.
&key 1,'' better     help'',xhelp
&key 5,''transfer    to X'',xsend
&key 6,''transfer from X'',xrec
&fastkey 8,''    EXIT'',''&exit 'End of transfer with machine X' ''
```

Sample SEND Command File

```
&! Filename is ''xsend''
&! Sample command file for transfer to machine X (in this case,
&! the HP 3000). Move the file by sending it to the host
&! editor. This routine could be adapted to other hosts by
&! redefining or turning off the terminator and running the
&! equivalent of the HP 3000 Editor program.
&!
&! Set up default value for parameters
&assign &p1,'' ''
&assign &p2,''$NEWPASS''
&!
&! Print transfer menu message
&msg ''^[H^[J''        ''Transfer file from Series 100 to machine X''
&msg
&msg
&! Collect user parameters.
&input ''Please enter a local filename: '',&p1
&input ''Please enter a host filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' up to ' '',&p2,'' '^[&d@''
&msg
&msg
```

```
&! Run the host editor program.
editor
a1
&!
&! Send the contents of the local file to the host editor.
&sendfile &p1
//
&!
&! Save the contents of the local file to the host file.
&send ''k '',&p2,'',UNN''
&!
&! In case the host file exists, respond with a yes.
Y
&!
&! Terminate host editor.
exit
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&! Print end message.
&msg
&msg ''^ [&dB End of transfer^[&d@''
```

Sample RECEIVE Command File

```
&! Filename is ''xrec''
&! Sample command file to move a file from machine X (in this
&! case, an HP 3000) to the Series 100. Use the logging mode
&! to get the host to dump the file to the screen.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Print transfer menu message.
&msg ''^ [H^[J''        Transfer file from machine X to Series 100''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a host filename: '',&p1
&input ''Please enter a local filename: '',&p2
&!
```

```
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' down to ' '',&p2,'' '^[&d@''
&msg
&msg
&!
&! Run the host editor.
editor
&send ''t  '',&p1
&!
&! Enable logging
&logfile &p2
&!
&! Dump the file to the screen.
list all     (NOTE: add {,unn} to display without line numbers)
&! Disable logging. File transfer complete.
&logfile off
&!
&! Terminate host editor.
exit
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Print end message.
&msg
&msg
& msg ''^[dBEnd of transfer^[&d@''
```

The following pages provide examples of command files to transfer files to the following host computers:

- HP 1000
- VAX (with UNIX operating system)
- The SOURCE (a data base service)
- Amdahl 470 (with TSO operating system), which is similar to an IBM 370 host.

Sample HP 1000 Command Files

```
&! Filename is ''xtrans.000''
&! Sample command files that illustrate customized
&! file transfer for DSN/LINK with the HP1000.
&!
&! Print transfer menu.
&msg ''^[H^[J'',''                File transfer with HP1000''
&msg
&msg
&!
&! Define softkeys for a new help function, transfer to and from
&! host, and customized exit.
&key 1,'' better  help'',xhelp
&key 5,''transferto 1000'',xsend.000
&key 6,''transferfrom1000'',xrec.000
&fastkey 8,'' EXIT'', ''&exit 'End of transfer with HP1000' ''
&!
&! Define a delay between each character to make sure HP1000
&! is able to accept all the characters from Series 100. The
&! delay should be longer if the host system is slow.
&! Set the delay between each character to 10 milliseconds.
&chardelay 10
```

```
&! Filename is ''xsend.000''
&! Sample command file for transfer to HP1000.
&! Move the file by sending it into the store program on HP1000.
&!
&! A pause statement is inserted before each HP1000 command to
&! ensure the Series 100 can accept all the characters from
&! the HP 1000.
&!
&! Set up default value for parameters.
&assign &p1,''''
&assign &p2,''LOGFILE''
&!
&! Set the delay between each command to one (1) second.
&assign &p3,1
&!
&! Print transfer menu message.
&msg ''^[H^[J        Transfer file from Series 100 to HP1000''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a local filename: '',&p1
&input ''Please enter a host filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' up to ' '',&p2,'' '^[&d@''
&msg
&msg
&!
&! Purge the host file if it exists.
&pause &p3
&send ''PU,'',&p2
&!
Run the host store program.
&pause &p3
&send ''ST,1,'',&p2
&!
```

```
&! Send the contents of the local file to the host.
&pause &p3
&sendfile &p1
&!
&! Save the contents of the local file to the host file.
&pause &p3
&send ''^D''
&!
&! Go back to command level.
&pause &p3
(blank line here)
&!
&!
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&assign &p3,'' ''
&!
&! Print end message.
&msg
&msg
&msg ''^[&dBEnd of transfer^[&d@''
```

```
&! Filename is ''xrec.000''
&! Sample command file to move a file from the HP1000 to the
&! Series 100. Use the logging mode and get the host to dump
&! the file to the screen.
&!
&! A pause is inserted before each command to ensure
&! the HP1000 can accept all the data from Series 100. If the
&! host system is slow, the pause should be longer.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Set the delay between each command to one (1) second.
&assign &p3,1
&!
```

```
&! Print transfer menu message.
&msg ''^[H^[J        Transfer file from HP1000 to Series 100''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a host filename: '',&p1
&input ''Please enter a local filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' down to ' '',&p2,'' '^[&d@''
&msg
&msg
&!
&! Enable logging.
&logfile &p2
&!
&! Dump the file to the screen.
&pause &p3
&send ''DU,'',&p1,'' OG,AS''
&! Disable logging, File transfer complete.
&pause &p3
&logfile off
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&assign &p3,'' ''
&!
&! Print end message.
&msg
&msg
&msg ''^[&dBEnd of transfer^[&d@''
```

Sample VAX Command Files

```
&! Filename is ''xtrans.vax''
&! Sample command files that illustrate customized file transfer
&! for DSN/LINK and VAX with UNIX operating system.
&!
&! Print transfer menu.
&msg ''^[H^[J'',''              File transfer with VAX''
&msg
&msg
&! Turn off terminator for VAX.
&terminator off
&!
&! Define softkeys for a new help function, transfer to and
&! from host, and customized exit.
&chain xsoftkey.vax
```

```
&! Filename is ''softkey.vax''
&! Define the softkey for VAX transfer.
&!
&key 1,''better  help'',xhelp
&key 5,''transfer to VAX'',xsend.vax
&key 6,''transferfrom VAX'',xrec.vax
&fastkey 8,''  EXIT'',''&exit 'End of transfer with VAX' ''
```

```
&! Filename is ''xsend.vax''
&! Sample command file for transfer to VAX.
&! Move the file by sending it to the host editor.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,''LOGFILE''
&!
&! Print transfer menu message.
&msg ''^[H^[J''       Transfer file from Series 100 to VAX''
&msg
&msg
&!
```

```
&! Collect user parameters.
&input ''Please enter a local filename: '',&p1
&input ''Please enter a host filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' up to ' '',&p2,'' ' ^[&d@''
&msg
&msg
&!
&! Purge the host file if it exists.
&send ''rm '',&p2
&!
&! Run the host editor program.
&send ''ex '',&p2
a
&!
&! Send the contents of the local file to the host editor.
&sendfile &p1
.
&!
&! Save the contents of the local file to the host file.
wq
&!
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Print end message.
&msg
&msg
&msg ''^[&dBEnd of transfer ^[&d@''
```

```
&! Filename is ''xrec.VAX''
&! Sample command file to move a file from VAX to the
&! Series 100. Use the logging mode to get the host to
&! dump the file to the screen.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Print transfer menu message.
&msg ''^[H^[J        Transfer file from VAX to Series 100''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a host filename: '',&p1
&input ''Please enter a local filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' down to ' '',&p2,'' '^[&d@''
&msg
&msg
&!
&! Enable logging.
&logfile &p2
&!
&! Dump the file to the screen.
&send ''cat '',&p1
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Define the END OF TRANSFER key for the user to end the
&! file transfer.
&! Define a softkey for the user to end the file transfer
&key 1,'' '','' ''
&key 2,'' '','' ''
&key 3,'' '','' ''
&key 4,'' END OF TRANSFER'',xendfrom.vax
&key 5,'' '','' ''
&key 6,'' '','' ''
&key 7,'' '','' ''
&key 8,'' '','' ''
```

```
&! Filename is ''xsendfrom.vax''
&! End the transfer from host with VAX when the user presses
&! ''END OF TRANSFER''.
&!
&! Disable logging, Transfer is finished.
&logfile off
&!
&! Reset all the softkeys.
&offkey
&!
&! Print end message.
&msg
&msg
&msg ''^[&dBEnd of transfer^[&d@''
&!
&! Define transfer menu softkeys.
&chain xsoftkey.vax
```

Sample SOURCE Command Files

```
&! Filename is ''logon.src''
&! Sample command file which allows a user to logon to the
&! SOURCE and defines the softkey for send, receive mail and
&! logoff.
&!
&! The terminator is redefined for an individual command or a set
&! of commands. Also, a pause is put into the program to ensure
&! the SOURCE gets all the data from the Series 100. If the host
&! system is slow, the pause should be set longer.
&!
&! User first dials up the SOURCE number and executes this
&! command file.
&!
&! Send a carriage return to get the prompt TERMINAL=.
&terminator ^J
&send ^M
&!
&! Send another carriage return to bypass TERMINAL=.
&terminator @
&send ^M
&!
&! Connect to SOURCE.
&terminator >
C 30138
&!
&! Log on to SOURCE..
&terminator ^J
&! id <account number> <password>
&!
&! Wait for 20 seconds for logon time
&pause 20
&!
&! Exit to command level.
&terminator >
4
&!
&! Check for incoming messages.
MAILCK
&! Define softkeys for send, receive mail and logoff.
&chain softkey.src
```

```
&! Filename is ''softkey.src''
&! Softkey definition for SOURCE.
&!
&key 1,'' better   help'',xhelp
&key 5,'' send    mail'',sendmail.src
&key 6,''receive   mail'',recvmail.src
&key 8,''  exit   SOURCE'',exit.src
```

```
&! Filename is ''sendmail.src''
&!
&! Command file to send mail to the SOURCE.
&!
&! Clear all user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&assign &p3,'' ''
&!
&! Assign a character delay of 100 milliseconds to ensure the
&! SOURCE gets all the data from Series 100. If the host system
&! is slow, the character delay should be longer.
&assign &p4,100
&!
&! Collect information from the user.
&input ''Please enter the account name of recipient: '',&p1
&input ''Please enter the subject of the letter: '',&p2
&input ''Please enter the filename of the letter: '',&p3
&!
&! Run send mail command.
&terminator :
MAIL SEND
&send &p1
&send &p2
&! Now send contents of letter with a delay between each
&! character to prevent data overrun.
&chardelay &p4
&terminator ^J
&sendfile &p3
&!
&! Reset character delay to none.
&chardelay 0
&!
&! Send the mail.
&terminator ?
```

```
.S
&!
&! Terminate send mail command.
&terminator □
Q
&!
&! Clear all user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&assign &p3,'' ''
&assign &p4,'' ''
```

```
&! Filename is ''recvmail.src''
&!
&! Sample command file to receive mail from the SOURCE to
&! local file.
&!
&! The user has to press END OF RECEIVE key after the mail is
&! received.
&!
&! Disable stopping every 24 lines on SOURCE.
&terminator >
NOCRT
&!
&! Clear user parameters.
&assign &p1,'' ''
&!
&! Collect user parameters.
&input ''Please enter the name of file to receive mail: '',&p1
&!
&! Enable logging.
&logfile &p1
&!
&! Read in a mail.
&terminator -
MAIL READ
&!
&! Pause for two seconds to ensure the last command gets
&! through.
&pause 2
&!
&! Receive mail.
&terminator :
```

```
&send ''^H''
&!
&! Clear user parameters.
&assign &p1,''''
&!
&! Define the softkeys for END OF RECEIVE. The user must press
&! this key when the receive is done.
&!
&key 1,'' '','' ''
&key 2,'' '','' ''
&key 3,'' '','' ''
&key 4,''END OF RECEIVE'',endrecv.src
&key 5,'' '','' ''
&key 6,'' '','' ''
&key 7,'' '','' ''
&key 8,'' '','' ''
```

```
&! Filename is ''endrecv.src''
&!
&! Sample command file to end receive mail from SOURCE.
&!
&! Disable logging.
&logfile off
&!
&! Terminate mail command.
&terminator >
Q
&!
&! Reset all softkeys to transfer softkeys.
&offkey
&chain softkey.src
```

Sample AMDAHL/IBM Command Files

```
&! Filename is ''xtrans.ibm''
&! Sample command files that illustrate customized file transfer
&! for DSN/LINK and AMDAHL 470 with TSO operating system.
&! NOTE: This program only works with baud rate ©1200.
&!
&! Print transfer menu.
&msg ''^[H^[J'',''      File transfer with AMDAHL 470''
&msg
&msg
&!
&! Change terminator to line feed.
&terminator ^J
&!
&! Change terminal to half duplex.
&duplex half
&!
&! Define softkeys for a new help function, transfer to and from
&! host and customized exit.
&chain xsoftkey.ibm
```

```
&! Filename is ''xsoftkey.ibm''
&! Define the softkey for AMDAHL 470 transfer.
&!
&key 1, ''better  help'',xhelp
&key 5,''transfer to AMDAHL'',xsend,ibm
&key 6,''transferfrom AMDAHL'',xrec.ibm
&fastkey 8,''  EXIT'',''&exit 'End of transfer with AMDAHL 470' ''
```

```
&! Filename is ''xsend.ibm''
&! Sample command file for transfer to AMDAHL 470.
&! Move the file by sending it to the host editor.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,''LOGFILE''
&!
&! Assign delay value after each command.
&! This value should be increased if the system is slow.
&assign &p3,10
&!
&! Print transfer menu message.
&msg ''^[H^[J     Transfer file from Series 100 to AMDAHL 470''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a local filename: '',&p1
&input ''Please enter a host filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' up to ' '',&p2,'' '^[&d@''
&msg
&msg
&!
&! Exclude the host terminator as part of the file.
&nolog ^S,^Q
&!
&! Purge the host file if it exists.
&terminator ^S
&send ''del '',&p2
&!
&! Run the host editor program.
&pause &p3
&send ''edit '',&p2
&pause &p3
data
&!
&! Send the contents of the local file to the host editor.
&pause &p3
&terminator ^J
&sendfile &p1
&!
&! End edit.
```

```
&pause &p3
&send ^H
&!
&! Save the contents of the local file to the host file.
&pause &p3
save
&!
&! Terminate editor.
&pause &p3
end
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&assign &p3,'' ''
&!
&! Print end message.
&msg
&msg
&msg ''^[&dBEnd of transfer^[&d@''
```

```
&! Filename is ''xrec.ibm''
&! Sample command file to move a file from AMDAHL 470 to the
&! Series 100 by using the logging mode and get the host to
&! dump the file to the screen.
&!
&! Set up default value for parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Print transfer menu message
&msg ''^[H^[J      Transfer file from AMDAHL 470 to Series 100''
&msg
&msg
&!
&! Collect user parameters.
&input ''Please enter a host filename: '',&p1
&input ''Please enter a local filename: '',&p2
&!
&! Print start transfer message.
&msg ''^[&dBTransfer ' '',&p1,'' ' down to ' '',&p2,'' '^[&d@''
&msg
&msg
```

```
&! Dump the file to the screen.
&send ''list '',&p1
&!
&! Clear user parameters.
&assign &p1,'' ''
&assign &p2,'' ''
&!
&! Define the END OF TRANSFER key so that when the
&! transfer is finished, simply press that key.
&key 1,'' '','' ''
&key 2,'' '','' ''
&key 3,'' '','' ''
&key 4, ''END OF TRANSFER'',xendfrom.ibm
&key 5,'' '','' ''
&key 6,'' '','' ''
&key 7,'' '','' ''
&key 8,'' '','' ''
```

```
&! Filename is ''xendfrom.ibm''
&! End the transfer from AMDAHL 470 when ''END OF
&! TRANSFER'' is pressed.
&!
&! Disable logging, Transfer is finished.
&logfile off
&!
&! Reset all the softkeys.
&offkey
&!
&! Print end message.
&msg
&msg
&msg ''^[&dbEnd of transfer^[&d@''
&!
&! Define transfer menu softkeys.
&chain xsoftkey.ibm
```

DSN/Monitor Commands

The following commands are used in the DSN/LINK Main Menu to direct DSN/MONITOR. These commands are initiated from the Link workstation, resulting in activity on the Link workstation (such as listing a directory), while the Monitor workstation simply displays the command given.

BYE	(used only when a password is established) ends access to the Monitor workstation and returns DSN/Monitor to the state of waiting for the password. The connection between the two workstations is retained; file transfer and commands from the Link workstation are not permitted until a correct password is entered.
DIR <drive>	lists the files on the specified Monitor workstation disc drive to the Link workstation. (NOTE: This defaults to the "a:" drive unless other indicated.)
HELP	displays the contents of the HELP.MON file on the screen. Allows tailored help messages. (This command is equivalent to"type help.mon" from the CP/M prompt (A> on the Link workstation.)
HEX <on/off>	encodes blocks of data into a hexadecimal format in case the transmission media does not have a transparent mode. This feature is useful if the user's modem cannot leave transparent mode. (NOTE: The &HEX command must also be used on the Link workstation in the Command Menu before either of the DSN/LINK Transfer Menus are used.)

MSG <text>	displays the message typed on the Link workstation on the Monitor workstation. This command is equivalent to starting a line with a period (.) as described in the chapter on Transferring Files Between Two Series 100's.
NEWS	displays the contents of the NEWS.MON file on the Link workstation. (This file may be changed on the Monitor workstation to tailor news messages.) This command is equivalent to "type news.mon" from the CP/M prompt (A> on the Link workstation).
RUN <command string>	allows a user on the Link workstation to terminate DSN/Monitor; the Monitor workstation may now be controlled from the Link workstation to run simple CP/M programs. (NOTE: Only CP/M programs may be used with this command which do not use Key Code Mode—that is, which do not use softkeys in their program.)
TYPE <filename>	displays the contents of the specified Monitor file to the Link workstation display screen.

Appendix C

TRANSFERRING APPLICATION FILES

This appendix discusses the file formats used by the software products supported on the Series 100. It is important for you to understand these formats in order to successfully transfer files from your Series 100 to the HP 3000.

The file transfer capabilities of DSN/LINK were designed to transfer binary files as well as ASCII files.

ASCII files transferred with DSN/LINK consist of strings of seven-bit ASCII characters separated by <CR><LF>, just <CR>, or just <LF>.

The following control characters are treated with exception when found in an ASCII file:

Character	Decimal Value	Use
TAB	9	Condenses spaces in WordStar/100
LF	10	End of line
CR	13	End of line in Word
SO	14	End of line in Word
CTRLZ	26	End of file
RS	30	Unused soft hyphen in WordStar
US	31	Word tab and WordStar hyphen

Binary file transfers may contain any kind of data (including program files ''.COM''). The data is broken into fixed-sized records when stored on the host computer. Binary file transfers may be used to make an exact copy of a local Word or WordStar file for archive purposes or for later use on a Series 100.

The following sections list the unique characteristics of file formats produced by various software packages on the Series 100, and any special preparations or precautions that need to be taken.

Series 100/Word Files

To make an exact copy of a Series 100/Word file for archive purposes, transfer it as a binary file.

Under ASCII transfer, files created with Series 100/Word will receive special treatment, since these files are unique in several ways:

1. Series 100/Word files are ''paragraph'' oriented, whereas most other files are ''line'' or ''record'' oriented. When you type text using Series 100/Word, the text is stored as a continuous paragraph. The text is separated into lines only when it is displayed on the screen.

   Series 100/Word files use the <CR> character as a paragraph separator and not as a line or record separator. (When you examine a Series 100/Word file on the Series 100 screen, the symbol ''<'' will appear wherever the <CR> character occurs.) A special control code is inserted into the text at the end of each physical line when the text is displayed on the screen. (This control code is <SO>, an ASCII 14.)

2. Special control codes are inserted into text when indentations are made in Series 100/Word with the INDENT TO TAB function key. Whenever the INDENT TO TAB key is pressed, three special characters are inserted in the text:

   a. <US>, an ASCII 31;
   b. A character count (which indicates how many spaces to indent); and
   c. <US>, an ASCII 31.

3. Series 100/Word indicates that a particular character is enhanced by setting the eighth bit of the character. Display enhancements will be lost when transferring an ASCII file to a host computer (since DSN/LINK only transfers seven-bit ASCII strings).

Two important restrictions exist in using Series 100/Word files with DSN/LINK:

1. Under ASCII transfer, the embedded display enhancements will be stripped off because they are represented in a way incompatible with the HP 3000.

2. Once a file has been converted to a standard ASCII format, it can still be used by Series 100/Word, but the paragraph and indentation information will be lost.

WordStar/100 Files

Two types of files may be created in WordStar/100—document and non-document files. Document files may be transferred as either ASCII or binary; however, it is recommended that both types of WordStar/100 files be transferred as binary files for archive purposes.

Series 100/VisiCalc Files

Files created with Series 100/VisiCalc can be transferred to a host computer and back again with no special preparation. This is true because Series 100/VisiCalc files do not contain any special control codes. The structure of a Series 100/VisiCalc file needs to be examined, though, in order to construct files that are readable by Series 100/VisiCalc.

Series 100/VisiCalc provides two separate file formats for storing a worksheet. The first format is known as Data Interchange Format (DIF) and is described in the *Series 100/VisiCalc Reference Manual.* The second format saves the worksheet as though it were a series of keyboard inputs.

For each cell defined in the worksheet, Series 100/VisiCalc stores the keyboard command that would be necessary to define that cell. For example, if the cell A3 were the label ''XYZ,'' Series 100/VisiCalc would save the line ''>A3:''XYZ'' '' in the file. The ''>'' means ''go to'' a cell. (Refer to the ''Go To'' command in the *Series 100/VisiCalc Reference Manual* for more information.) The colon indicates the end of the coordinate. ''XYZ'' is the label for the cell.

The format of the Series 100/VisiCalc data is important to know if you want to create a program which takes raw data and produces a file that can be used with Series 100/VisiCalc. For example, if you created such a program on the Series 100 you could:

1. Create and execute a command file to extract data from an HP 3000 IMAGE data base, transferring it to a file in the Series 100.

2. Run your local program to create a file readable by Series 100/VisiCalc using the data.

3. Use the file with Series 100/VisiCalc.

Series 100/BASIC Program Files

It is recommended that Series 100/BASIC program files be transferred as binary files.

Series 100/Graphics Files

Series 100/Graphics files may be created as either DATA files or MENU files. It is recommended that both file types be transferred as a binary file.

1. Series 100/Graphics DATA files may be transferred to and from a host computer as either a binary or an ASCII file with no difficulty, since data is stored as ASCII strings (including the numeric data).

2. Series 100/Graphics MENU files (files that end with .PIE, .BAR, or .LIN) should be transferred as a binary file. However, if you transfer MENU files as an ASCII file, you must make special preparations due to the following:

   - MENU files have a null characer (ASCII 0) as the first character of the file. (Series 100/Graphics uses the null character to verify that it is a MENU file.)

   - The null character is lost, however, when the Series 100/Graphics MENU file is transferred to a host computer as an ASCII file. Thus, the MENU file will not be recognized as a Series 100/Graphics file when it is transferred back to the Series 100.

   To overcome this difficulty when transferring as an ASCII file, you must write a program to append a null character to the beginning of a Series 100/Graphics MENU file.

Appendix D

FILE TRANSFER PROTOCOL

This appendix describes the error-checking protocol used by DSN/LINK in the Series 100 to provide improved asynchronous data communications. It allows data to be sent between the Series 100 and a host computer, with checksums and re-transmission if an error occurs.

In data communications, the protocol defines rules for the electrical, physical, and functional characteristics of the communication link. The protocol contains control procedures required to ensure an orderly exchange of information across the link interfaces and to and from the user's application programs.

Communication with the Host

The data transfer protocol makes full allowance for the characteristics of the host operating system, and attempts to allow optional modes of operation to work with other types of host computers. Blocks of up to 515 bytes of data can be sent. If the host computer cannot read this much data at one time, the data block can be broken into smaller sub-blocks (where each sub-block has a checksum and sequence number).

Although the data transfers are logically full duplex, no data is sent to the host without receiving the "host ready" character (DC1). When the host has nothing to send, it will go into a READ state. If either the host or the Series 100 wants to verify that the other side is still there, it sends a packet of type "DUMMY" and waits for a response.

Because the host must know in advance the number of binary bytes to receive, short messages will be automatically padded with nulls by the local program (up to 515 bytes) to complete the read. During the initialization phase, the sub-block size is set small to avoid excess padding; during file transfer, the sub-block size can be set large for speed.

NOTE

Hosts that do not support binary read can use the HEX option, where all code is translated into hex to avoid conflicts with parity and control codes.

Transfer Options

In order to ensure that the protocol will work with a wide range of host computers, several communication options are allowed.

All data may be sent in hex if the host operating system or the communication line cannot handle arbitrary 8-bit codes.

Because of difficulties in dynamically establishing a configuration, most configuration parameters (such as hex mode and host protocol type) must be established in advance. The block size and timeout values can be changed dynamically.

When sending a packet to the host, most control codes are non-control ASCII characters so as not to interfere with host handshaking conventions. Ack and Nak are replaced by S and F. The start block character is still a control character (STX or binary 2) to reduce the possibility that an unsolicited message will set off a block receive.

Initialization

The Series 100 data communications code itself requires no host initialization sequence. It assumes that the configuration parameters are properly defined before data blocks are sent. Once the host program is initiated and the local code is set up, the local application will wait for an ''init.'' packet from the host to be sure that the connection has been established.

File Transmission Protocol

Send Protocol

When either the host or the Series 100 has a block to send, it increments its block sequence number (adds 1) and waits for its turn to send a block. The block sequence number resets to 1 when it reaches 65535. (Rules for when a block can be sent are described in ''Controlling Direction of Transfer.'') The block is sent with appropriate header and trailer information.

In hex mode, each byte of data is translated into two hex characters.

If sending to the host in binary mode, short messages are padded to the expected length to be sure that an host binary read will complete. (The expected length is either the defalt of 80 bytes or the last definition of block size.)

If a negative acknowledgement or a timeout occurs, resend the current block with the same block sequence number.

Receive Protocol

When the Series 100 is ready to receive a block of data, it starts scanning for the start block character. After this, it scans for the header and as many data bytes as it expects from the header.

- If the block has the same block sequence number of the previously received block, it is a duplicate and is discarded.
- If the block sequence number is not the previous or the expected number, the receiver reports failure and resets the block count to zero.
- If a block with a bad CRC is received or if the read times out, a negative acknowledgement is sent after a DC1 is received from the host.

Controlling Direction of Transfer

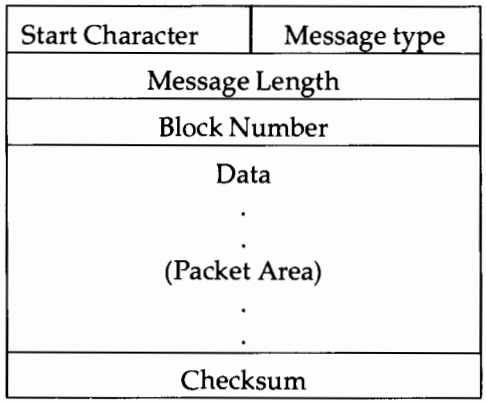
The following model supposes a ''receive'' and a ''send'' mode. Proper coordination must be maintained so that the host does not receive data when it is not ready. When nothing else is active, the host is in receive state with a binary read, and the Series 100 can send a message if desired. At any time, the host can send a DUMMY packet to determine if the Series 100 is still there.

In general, the host can send a message to the Series 100 any time. If the host sends data at the same time as the Series 100 is sending, then the Series 100 will send acknowledgement to the block received from the host before sending its own block. The Series 100 can make a variable length binary read and the host cannot. When the Series 100 is waiting for data from the host, it can watch for either a DC1 or a start block character.

An additional rule must be added to ensure that the Series 100 always has an opportunity to send a message to the host. When the Series 100 sends a positive acknowledgement to a block from the host, it may send a character that is interpreted as ''block received, request send.'' (This character is a ''T''.) Upon receiving this character, the host will switch to RECEIVE state and accept the Series 100 block.

Data Structures

The message block will have the following format:



The components of the message block are described below:

1. The first byte is a special start character to distinguish message blocks from unsolicited messages, such as an operator warning. The start character is STX or binary 2.

2. The second byte is a message type. (Message types are listed in the section below.) Message type "DATA" means this is a block of data to pass on to the application. Other message types deal with low-level configuration and synchronization.

3. A 16-bit message length comes after the start character and the message type. This length includes only the size of the data area and may be an even or odd value.

4. A block number is next. This value is incremented after each successful block transmission and is used for sequencing control. To facilitate synchronization, a block number of zero will always be accepted and will reset the block counter. The starting block number will be taken from the first valid block received.

5. A data packet is next. Packet types are described more fully in "Use of Packets."

6. At the end of the packet is a 16-bit checksum, calculated by adding together all of the bytes from the message type through the data block.

Message Types

The supported message types include the following:

#	Name	Data Area
0	BLOCK_SIZE	Redefine size of sub-block
1	DATA	Last or the only sub-block of a data block
2	(Reserved)	
3	DUMMY	Useful for synchronization purposes
4	(Reserved)	
5	PARTIAL	Sub-block, more to come
6	TIMEOUT	Redefine timeout length

The format of the data area for each of the block types is given below.

Block_size: First two bytes of the data area give the new sub-block size in bytes. The high order byte comes first.

Data: The data block contains one of the packet types described in "Packet Types for DSN/LINK Transfer." The first byte gives the packet type, and the data which follows is defined by the packet type.

Dummy: An empty data block.

Partial: The given packet is not yet complete. The final sub-block of the set will give the message type.

Timeout: The first two bytes of the data block give a new timeout value, in seconds. The high order byte comes first. This timeout value tells how long the host should wait before resending a block or before cancelling a read.

Packet Types for DSN/LINK Transfer

In addition to the error-checking protocol described above, DSN/LINK and its host program LINK100 exchange the packets described below to control the exchange of data. The packet formats are described as PASCAL records types, with the following assumptions:

1. When 16-bit or 32-bit integers are sent, the high order byte is sent first, then the lower order bytes. This is opposite from the convention used internally to the Series 100, but what is usually found in larger systems.

2. These packets are sent within the area defined as ''data'' in the above protocol. The first byte is a packet type, followed by the fields defined for a given packet type.

3. For flag variables, a value of 0 means False and 1 means True. All flags are full 16-bit integers to reduce dependencies on record-packing quirks of various PASCAL compilers.

The variable types are described below:

```
string16 = record
     slen:integer;
     str:array [1..80] of char;
     end;

int32 = record
     high:integer; (internally the word order is reversed)
     low:integer;
     end;

char512 = array[1..512] of char;

char7 = array[1..7] of char;

mtype = (pinit,plistf,palistf,pstart,pastart,pdata,peod,
          pabort,pexit,paeod);
```

The packet types are described below:

```
pinit_type = record (for establishing version information)
    vers_slen:integer;
    vers_str:char7;
    end;

plistf_type = record (to determine if a host file exists)
    rec_size:integer;
    binary:integer;
    to_host_flag:integer;
    host_file:string16;
    end;

palistf_type = record (reply to plistf)
    rec_size:integer;
    num recs:int32;
    binary:integer;
    device_flag:integer;
    err_code:integer;
    err_string:string16;
    end;

pstart_type = record (initiates a file transfer)
    rec_size:integer;
    byte_cnt:int32;
    binary:integer;
    to_host_flag:integer;
    host_file:string16;
    end;

pastart_type = record (reply to start transfer request)
    err_code:integer;
    err_string:string16;
    end;
```

```
pdata_type = record (send block of data)
    buffer_len:integer;
    buffer:char512;
    end;

pabort_type = record (request early termination of transfer)
    err_code:integer;
    err_string:string16;
    end;

packet_type = packet record (variant record of packet types)
    case packet_type:mtype of

    pinit:
        (init:pinit_type);

    plistf:
        (listf:plistf_type);

    palistf:
        (alistf:palistf_type);

    pstart:
        (start:pstart_type);

    pastart:
        (astart:pastart_type);

    pdata:
        (data:pdata_type);

    pabort:
        (abort:pabort_type);

    paeod:
        (aeod:pabort_type);

    peod,pexit:
        ( );
        end
```

Use of Packets

For the host, the Series 100 program is already running and automatically issues the RUN command to start the host program. The first thing the host program does is send an "init." packet to supply the local program with a version number and to verify that a connection is established.

Once initialization packets are exchanged, the host program waits for a request from the local program. At this point the host may receive either the Listf, Start or Exit packet:

- The Listf packet allows the local program to determine host file status before committing to the transfer.
- The Start packet tells the host program that an actual transfer is about to begin.
- The Exit packet means that the host program should terminate.

After a Start packet is sent and a successful Astart packet is returned, data blocks are sent until the entire file has been transferred. An Eod packet is sent after all of the data to indicate normal end of transfer. During the transfer, either side may send an abort packet to halt the transfer.

Detailed Descriptions of Packets

The following information provides detailed description of packets.

Init: Verify host connection

Packet_type:	Value of 0.
Vers_len:	Gives the true length of the version string. Usually 7.
Ver_str:	Version number of responding host program. Recommended format is A.xx.yy, where xx is a major revision and yy is a minor revision. This string will appear in the upper right corner of the transfer menus.

Listf: Used to get status on a host file

Packet_type:	Value of 1.
Rec_size:	Suggested record size. Meaningful only when transferring to host and then only provided as a default.
Binary:	Suggested Binary/ASCII choice. Meaningful only when transferring to a host and then useful only as a default. A value of 1 (or True) means a binary file, a value of 0 (or False) means an ASCII file.
To_host_flag:	Indicates intended transfer direction. Lets host test for ''read only'' status and informs host if a nonexistent file is considered an error.
Host_file:	String containing host file name. No syntax checking is done by the local program.

Alistf: Reply with file status

Packet_type:	Value of 2.
Rec_size:	Defined if host file exists. Otherwise, contains the value passed in the Listf packet.
Num_recs:	Defined if host file exists.
Binary:	Defined if host file exists. A value of 1 means the file is binary; a value of 0 means the file is ASCII.
Device_flag:	Defined if host file exists. A value of 1 means the file is a device such as a printer. Used to suppress the ''Host file exists'' warning message when transferring to host.
Err_code:	A value of 0 means no error. An error code of 10 means a host destination file already exists. Other error codes cause the error string to be printed and are interpreted as failure.
Err_string:	Error string printed in Listf fails.

Start: Begin a transfer, define host file attributes

Packet_type:	Value of 3.
Rec_size:	Defined in ''to host'' transfer. Gives the record size for the new host file.
Byte_cnt:	Defined in ''to host'' transfer. Because we cannot know how many ASCII records are contained in a local file, the total size (in bytes) of the local file is provided. The host program will make an appropriate estimate for host file size.
Binary:	Defined in ''to host'' tarnsfer. A value of 1 means a binary file, a value of 0 means ASCII.
To_host_flag:	Gives direction of transfer. A value of 1 means transfer from the Series 100 to the host. A value of 0 means transfer from the host to the Series 100.
Host_file:	Name of host file.

Astart: Reject Start parameters, if necessary

Packet_type:	Value of 4.
Err_code:	Any non-zero value is taken as failure. The error string is printed and the transfer is aborted.
Err_string:	String printed if ''Start'' request fails.

Data: Contains a block of data

Packet_type:	Value of 5.
Buffer_len:	Length of valid data in buffer, in bytes.
Buffer:	Character array containing transfer data. If the data is binary, records are stored one after the other with no separators. The record size tells how to deblock the data. If the data is ASCII, each record is separated by a Carriage Return and a Line Feed. The local program will ensure that no ASCII record is longer than the given Record size and that all records end in Carriage Return and Line Feed. For maximum efficiency, partial records may be packed into the buffer to ensure a full block of data. If so, the next data block will contain the rest of the partial record. It is the host program's responsibility to perform this deblocking when the host is receiving. This extra packing is optional when the host is sending data.

Eod: Normal end of file transfer

Packet_type:	Value of 6.

Abort: Abandon file transfer

Packet_type:	Value of 7.
Err_code:	Any value will do; the error string is always printed.
Err_string:	Error string explaining the cause of the termination.

Aeod: Acknowledge end of data

Packet_type:	Value of 8.
Err_code:	Zero means successful close.
Err_string:	String explaining why file could not close.

Exit: Terminal host program

Packet_type:	Value of 9.

Appendix E

HOST INITIATION OF FILE TRANSFER

There may be occasion when the host may wish to initiate file transfer either to or from the Series 100. This appendix provides a sample HP BASIC program for such activity.

There are two conditions on the Series 100 which must be met before these programs can run successfully:

1. DSN/LINK must be in the default drive.

2. The CP/M Operating System must be loaded.

Sample Program for Host Initiation of File Transfer from the Host to the Series 100

```
10 REM This program allows the host to initiate a transfer from
       host
20 DIM A$[80]
30 DIM B$[80]
40 REM Collect source and destination filename
50 INPUT ''Please enter a host source filename:'',A$
60 INPUT ''Please enter a local destination filename: '',B$
70 E$=CHR$(27)
80 REM Map datacomm to bit bucket
90 PRINT E$;''&i32s26D''
```

```
100 REM Unmap keyboard
110 PRINT E$;''&i7S''
120 REM Map CP/M to display
130 PRINT E$;''&i8s23D''
140 REM Map datacomm to CP/M
150 PRINT E$;''&i32s24D''
160 REM Initiate transfer from host and remap keyboard to CP/M
170 PRINT ''dsnlink '';A$;'',remote to '';B$;E$;''&i7s24D''
180 REM Unmap datacomm
190 PRINT E$;''&i32S''
200 END
```

Sample Program for Host Initiation of File Transfer to the Host from the Series 100

```
 10 REM This program allows the host to initiate a transfer to
        host
 20 DIM A$[80]
 30 DIM B$[80]
 40 REM Collect source and destination filename
 50 INPUT ''Please enter a local source filename: '',A$
 60 INPUT ''Please enter a host destination filename: '',B$
 70 E$=CHR$(27)
 80 REM Map datacomm to bit bucket
 90 PRINT E$;''&i32s26D''
100 REM Unmap keyboard
110 PRINT E$;''&i7S''
120 REM Map CP/M to display
130 PRINT E$;''&i8s23D''
140 REM Map datacomm to CP/M
150 PRINT E$;''&i32s24D''
160 REM Initiate transfer to host and remap keyboard to CP/M
170 PRINT ''dsnlink '';A$;'' to '';B$;'',remote''E$;''&i7s24D''
180 REM Unmap datacomm
190 PRINT E$;''&i32S''
200 END
```

Appendix F

TRANSFERRING FILES BETWEEN TWO SERIES 100'S

File transfers between a Series 100 Computer and a host computer were discussed in previous chapters. However, you may also establish data communications and transfer files between two Series 100 Computers using Series 100/DSN/Monitor.

This appendix discusses Series 100/DSN/Monitor, and provides instructions on how to:

- establish a connection between two Series 100's (with a modem or cable connection)
- prepare your Series 100 computers for data communications
- ask for help, view a directory, read a news bulletin, and display files from the other Series 100 computer
- transfer files between two Series 100 computers
- send and receive messages
- return the workstation to local control

NOTE

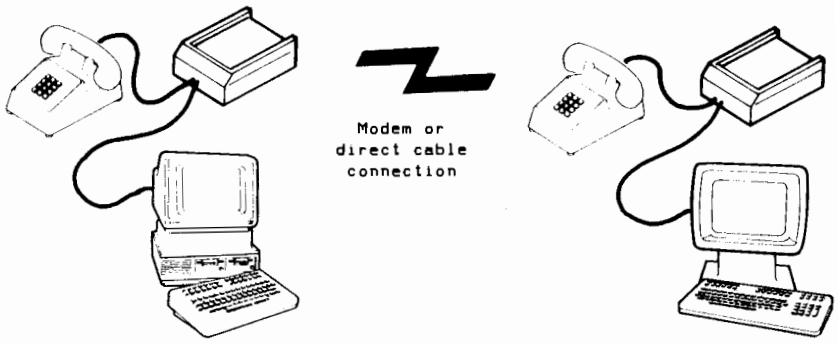
Before using DSN/Monitor, you should be familiar with the chapters discussing DSN/LINK in this manual.

What Is Series 100/DSN/Monitor?

Series 100/DSN/Monitor (also called DSN/Monitor) is a data communications program which works in conjunction with Series 100/DSN/LINK.

In this appendix, the Series 100 running DSN/LINK is called the "Link" workstation. The Series 100 running DSN/Monitor is called the "Monitor" workstation. Although only the Link workstation may control file transfer and issue commands to the Monitor workstation, both workstations may send and receive messages and record the interaction.

The functions of the Link and Monitor workstations are shown in the following diagram:



Link Workstation	Monitor Workstation
- runs DSN/LINK	- runs DSN/Monitor
- provides a password (if requested)	- may set a password
- initiates file transfer	- responds to file transfer
- issues special commands to:	- responds to commands
ask for help	
view a Monitor directory	
display a Monitor file	
- reads a news bulletin	- establishes a NEWS file
- sends and receives messages	- sends and receives messages
- may record all interaction	- may record some interaction

Hardware Requirements

The following hardware is required:

1. Two Series 100 computers (any combination of either HP 120's or HP 125's)

2. Your choice of connection for the data communication, discussed later in this appendix:

   - Either telephone modems, or
   - Direct cable connection

Software Requirements

In order to use DSN/Monitor, the following software is required:

1. Series 100/DSN/LINK

2. Series 100/DSN/Monitor (a second Application Disc shipped with your Series 100/DSN/LINK Application Disc), which includes:

HELP.MON	a text file that describes DSN/Monitor commands
MONITOR.COM	the DSN/Monitor program
MONITOR.DAT	the data communications code that is downloaded to the Series 100 running DSN/LINK
MONITOR.LNK	a command file, supplied by DSN/Monitor and used by DSN/LINK, to establish the transmission characteristics on the Link workstation
NEWS.MON	a text file that holds your messages to the Monitor workstation

Preparing Your Workstations

There are a few steps that need to be taken to prepare your two Series 100 computers for data communications. The steps common to preparing both workstations include:

1. Verify that the connection is made between both workstations. (The types of connections are discussed below.)

2. Verify that Configuration Menus are changed on both workstations (as discussed later in this section).

3. Place both workstations in LOCAL OP SYS mode.

4. Verify that both DSN/LINK and DSN/Monitor are installed on a Work Disc for each workstation.

NOTE

Before you use a new application program (such as DSN/Monitor), it must be installed from your Application Disc to a Work Disc. Refer to the *Series 100 Owner's Manual* for instructions on using the Install Mode. (This process copies the Application Program and makes it accessible on your Work Disc by a single keystroke from the Welcome Menu.)

Once these preparations are made at both workstations, you may wish to set up a password for the Monitor workstation, as described in the following section.

Setting Up a Password

To protect files from access by unauthorized users, you may choose to establish a password file on the Monitor workstation. To define a password for DSN/Monitor:

1. Create a text file using an editor program (such as WordStar) that contains only one line of text. This line contains the password you wish to establish (up to a maximum of 80 characters).

2. Name the file as follows:

PASSWORD.MON

When the file named PASSWORD.MON is present on the Work Disc on the Monitor workstation, the following messages appear:

- on the Monitor workstation: Password Activated

- on the Link workstation: Enter password.

You must enter a password on the Link workstation that exactly matches the contents of the file PASSWORD.MON on the Monitor workstation.

If the exact password is not entered, the following message is displayed on the Link workstation:

ERROR: Invalid password
Enter password.

(The Monitor workstation displays the error message only.) You may not proceed until the correct password is entered. To find out what the password is, you must call the user on the Monitor workstation. If you are unable to obtain the password, you must exit DSN/LINK.

NOTE

If you do not enter a password on the Link workstation and simply press one of the file transfer softkeys, the message "Waiting for host response" appears and the softkeys change to TIME OUT/EXIT (f4). The message continues to be displayed until you press TIME OUT/EXIT, which returns you to the DSN/Link Main Menu softkeys. The message, "Enter password" is again displayed on the DSN/LINK Main Menu.

Establishing the Connection

This section describes two methods of setting up connections between two Series 100 computers—either using modems or direct cabling.

As a general rule, a direct cable connection is used for connections of approximately 100 feet or less. For distances greater than this, you must use a modem connection. Both types of connections are discussed below.

Modem Connections

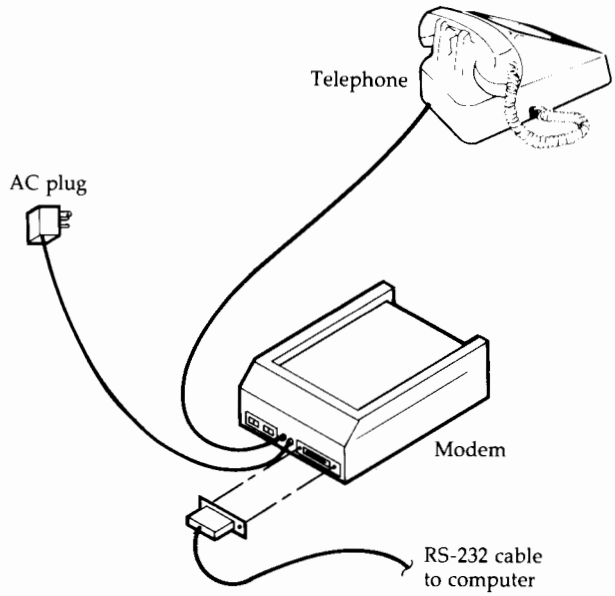
There are a variety of modems currently available for use with Series 100 computers.

Some modems may be operated in an unattended mode in which they answer the telephone automatically. (These are sometimes referred to as auto-answer or "smart" modems.)

NOTE

Put the auto-answer modem in the transparent mode when connecting two Series 100's. This prevents it from accidentally switching control back to the modem when it encounters a particular control sequence in a binary file.

A typical modem connection is illustrated below:



You must also provide a telephone to complete the connection. For instructions on modem installation and operation, check the reference manual provided with your modem.

NOTE

If you frequently switch between connecting to a host computer and connecting to another Series 100 computer, you may occasionally see a sequence of error messages. This sequence is called a "double echo."

Double echo arises when the auto-answer modem or a host computer (such as the HP 3000) receives a signal it cannot understand, and sends messages to DSN/Monitor. DSN/Monitor in turn responds to the error message from the modem. They continue to exchange error messages until you turn off the modem and restart it.

Direct Cable Connection

There are a variety of cables available to connect your two Series 100's directly.

For distances up to nine feet, you may use a serial printer cable (HP product number 13242G). On the HP 120, this cable may be connected into either port 1 or port 2. On the HP 125, it may be connected only to port 2. For other distances, check with your system manager or HP representative for the cable length you may require.

Connect the cable from the Link workstation to the Monitor workstation. (Use port 1 or port 2 depending on the type of connector used.)

Checking the Terminal Configuration

To ensure that data communications will occur between two Series 100's, you must first check the Configuration Menus on each workstation. (Accessing the Configuration Menu is described in both the *Installation Guide* and the *Series 100 Owner's Manual.*)

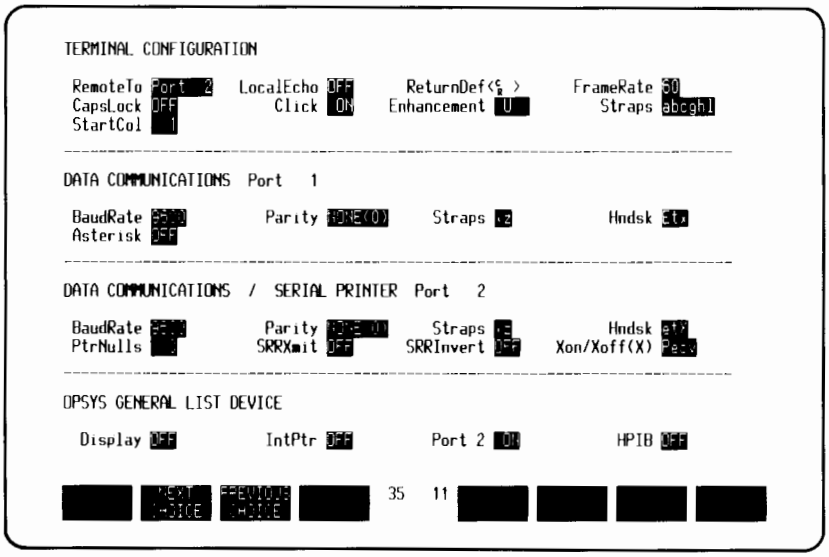
Refer to the Configuration Menu below to set the following fields for each workstation:

- "RemoteTo" must match the port to which you are connecting the appropriate cable.
- "BaudRate" must be set at the same rate for both workstations (maximum is 9600 baud).
- " Parity" should be set to 'NONE(0)'.
- "Hndsk" must be set to 'etX' (*not* 'Etx') in the field that corresponds to the appropriate port.

NOTE

While you are transmitting files, the "Hndsk" field is not used. It is useful only at the command level and serves to provide a pause for long responses to TYPE and DIR commands, discussed later.

- The "Xon/Xoff(X)" field on the Link workstation is usually set to 'Recv'. (This field on the Monitor workstation is not used, since the "Xmit" function is set by DSN/Monitor.)



Testing the Connection

Test the connection to verify that data communications will transmit in both directions, as follows:

1. Put both the Link and Monitor workstations in Remote Mode. (Press EXIT TO CP/M and press REMOTE MODE so that an asterisk (*) appears in the softkey label.)

2. Type a few random characters on either keyboard.

3. Verify that the characters typed are displayed on the other display screen. This confirms that the connection has been made.

NOTE

For testing purposes only, you may wish to change the Configuration Menu so that the "Local Echo" field is ON for both workstations. This ensures that any characters typed will appear on both display screens for verification. After testing, turn the "Local Echo" field OFF; otherwise, duplicate characters will be displayed when the workstations are returned to the LOCAL OP SYS Mode to run DSN/LINK and DSN/Monitor.

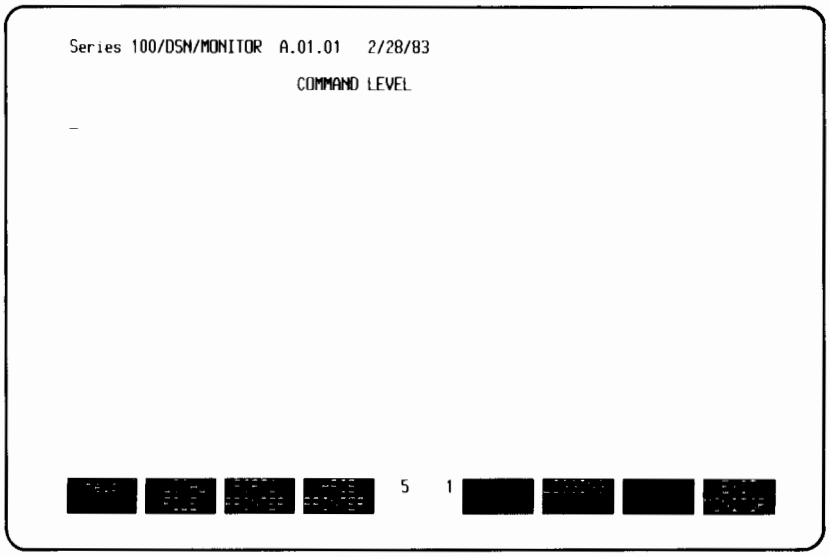
Running DSN/Monitor with DSN/Link

DSN/LINK must be running on the Link workstation, and DSN/Monitor must be running on the Monitor workstation until all data communications are complete. All commands are now initiated from the Link workstation.

On the Monitor Workstation

After the physical connection is made, you must run DSN/Monitor to enable the Monitor workstation to act as host computer to the Link workstation.

When you press DSN/MONITOR in the Welcome Menu on the Monitor workstation, the following menu is displayed:



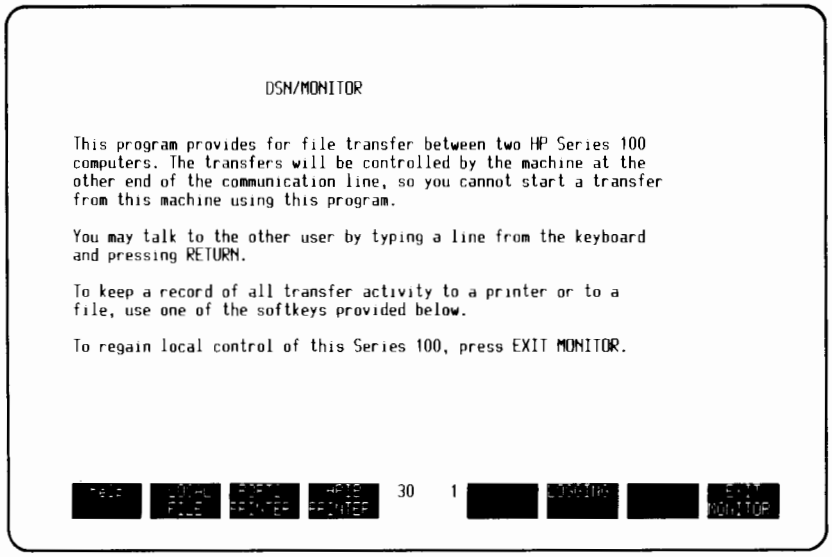
The DSN/Monitor function keys are displayed at the bottom of the Command Level menu. These function keys allow you to:

help	display an explanation of DSN/Monitor on the Monitor workstation
LOCAL FILE	selects a Monitor disc file as a destination to record interaction
PORT2 PRINTER	selects the printer connected to Port 2 of the Monitor workstation to record interaction
HPIB PRINTER	selects the printer connected to the Monitor workstation by an HPIB cable to record interaction
INTERNAL PRINTER (if applicable)	selects the internal printer (built into the top of the Monitor workstation) to record interaction. (The label for function key f5 is blank if the Monitor workstation does not have an internal printer.)
LOGGING	allows you to enable or disable the logging function to either a local file or printer
EXIT MONITOR	allows you to regain local control of the workstation

If a password has been set up, the message "Password Activated" appears on the Command Level menu on the Monitor workstation. You are now ready for data communications with the Link workstation.

Accessing Monitor "help" Information on the Monitor Workstation

Series 100/DSN/Monitor includes an explanation of DSN/Monitor, which can be viewed by pressing the "help" function key on the Monitor workstation. When you press "help" in the Command Level Menu, the following message appears:



Notice that the function key labels at the bottom of the screen remain the same. When you finish viewing the "help" data, you may wish to erase the text on the screen as follows:

1. Position the cursor at the top of the "help" data (at the line displaying "DSN/MONITOR").

2. Press the CLEAR DSPLY key located in the upper right corner of the keyboard. The data on the screen from the cursor position and following will be cleared.

On the Link Workstation

After you connect the Link workstation, you must run DSN/LINK to establish data communications with the Monitor workstation.

When the DSN/LINK Main Menu appears, press RETURN. The Monitor workstation will send a period (.) as a prompt to verify that the connection is made. At this time, you must configure the Link workstation for Series 100-to-Series 100 file transfer, as described below:

1. Press the "command" softkey in the DSN/LINK Main Menu.

2. When the command menu softkeys appear, press "command file". The following message appears in the bottom section of the screen:

   Please enter a local command file (or RETURN):

3. Type "MONITOR.LNK" and press the Return key, and the following message appears:

   configured for Series 100 <-> Series 100 transfer

   End of command file.

NOTE

If you plan to communicate regularly with another Series 100 workstation using DSN/Monitor, you may wish to rename the MONITOR.LNK file to COMMAND.LNK. By doing so, your Link workstation will automatically be configured for Series 100 to Series 100 file transfer when you run DSN/LINK.

---

4. Press "main menu" to return to the DSN/LINK Main Menu.

5. If a password has been set up, the message "Enter password." now appears on the DSN/LINK Main Menu; otherwise, a prompt appears as a period (.) from the Monitor workstation.

If you run DSN/LINK on the Link workstation when the Monitor workstation is connected but not running DSN/Monitor, you may still configure your Link workstation for Series 100 to Series 100 file transfer. However, if you attempt to transfer a file, the following message is displayed on the DSN/LINK Main Menu:

"Waiting for host response"

This message continues to be displayed until you press TIME OUT/EXIT, at which time the message below is displayed:

"Halting host program"

You must press the TIME OUT/EXIT key again, at which time the DSN/LINK Main Menu softkeys return to the screen. In order to transfer files or use commands with the Monitor workstation, you must request that the Monitor workstation run DSN/Monitor.

You are now ready to transfer files or use commands with the Monitor workstation.

Transferring Files Between Two Series 100's

Any type of file (including .COM files) may be transferred using DSN/LINK and DSN/Monitor. The procedures to transfer files between the Link workstation and the Monitor workstation are discussed in the following sections.

NOTE

It is important to remember that, for file transfer, the Monitor workstation acts as the "host" computer.

Transferring Files TO Your Monitor Workstation

To transfer files *to* the Monitor workstation, you must first access the DSN/LINK Main Menu in the Link workstation. (See Chapter 4, Transferring Files from the Series 100 to the HP 3000, for complete information.)

1. From the DSN/LINK Main Menu, press the "transfer to host" function key. When the Transfer to Host Menu appears, fill in the information required.

NOTE

The file type defaults to BINARY for file transfers using DSN/Monitor. The data you transfer to the Monitor workstation will appear in the same format as the original after file transfer. Therefore, it is strongly recommended that you do not change this default.

---

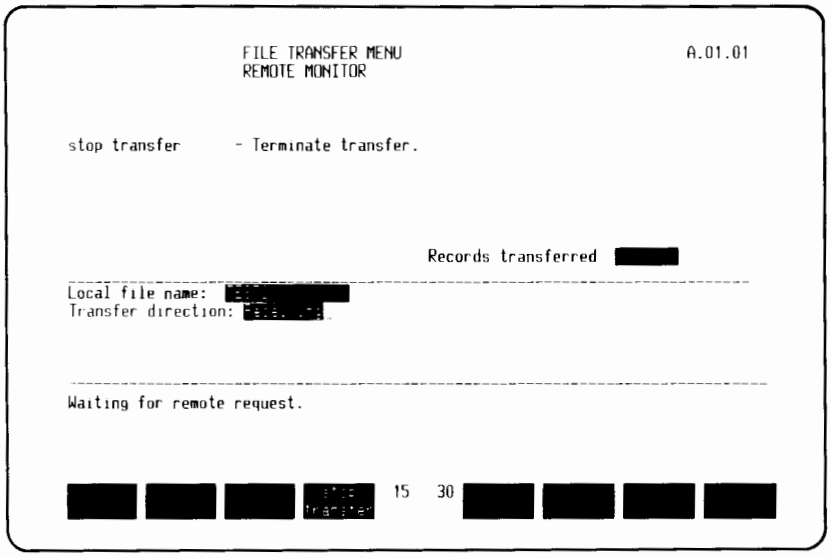
2. Press START TRANSFER. The local file is transferred, line by line, to the Monitor computer. When each line is received by the Monitor workstation, it is automatically stored into a disc file on the Monitor workstation.

3. When the entire file is transferred, the following message is displayed on the screen on the Link workstation:

Local to host file transfer completed.

You may now transfer another file, or return to the DSN/LINK Main Menu (by pressing "main menu").

On the Monitor workstation, DSN/Monitor responds as follows. When the Link workstation selects the Transfer to Host Menu, the Monitor workstation changes from the Command Level Menu to the File Transfer Menu shown below. This Monitor Menu fills as the Transfer to Host Menu is completed on the Link workstation. Notice that the "Transfer direction" field in the File Transfer Menu on the Monitor workstation indicates "Receiving".



The Monitor workstation may be unattended during file transfer, since no action is required. However, the user on the Monitor station may observe the File Transfer Menu and report the number of characters successfully transferred. In addition, the following message is displayed during file transfer:

File transfer in progress

When file transfer is completed, the following message appears on the Monitor workstation File Transfer Menu:

End of local to remote file transfer

Transferring Files FROM Your Monitor Workstation

To transfer files *FROM* the Monitor workstation, you must first access the DSN/LINK Main Menu in the Link workstation. (See Chapter 5, Transferring Files from the HP 3000 to the Series 100, for complete information.)

1. From the DSN/LINK Main Menu, press the "transfer from host" function key. When the Transfer from Host Menu appears, fill in the required fields.

NOTE

The file type defaults to BINARY for file transfers using DSN/ Monitor. The data you transfer from the Monitor workstation will appear in the same format as the original after file transfer.

---

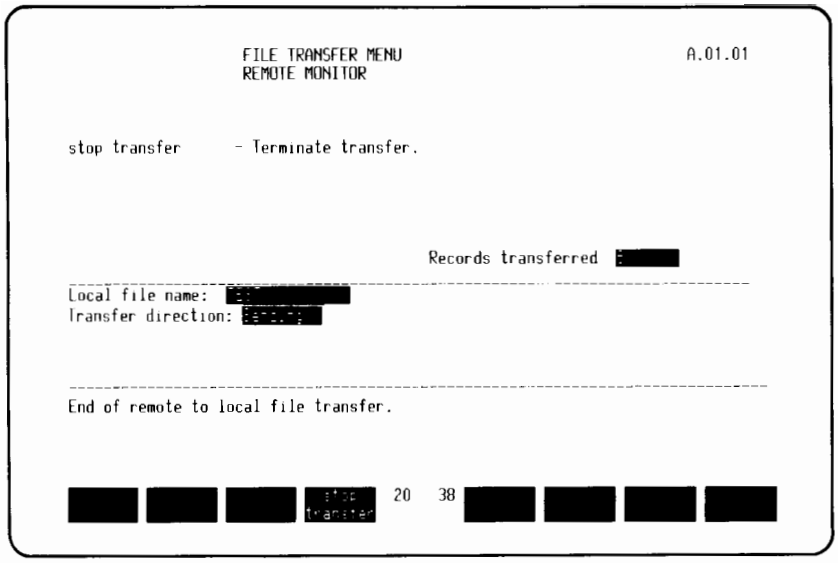
2. Press START TRANSFER on the Link workstation. The host file is transferred, line by line, from the Monitor workstation. When each line is received by the Link workstation, it is automatically stored into a disc file.

3. When the entire file is transferred, the following message is displayed on the screen on the Link workstation:

Host to local file transfer complete.

You may now transfer another file, or return to the DSN/LINK Main Menu by pressing "main menu".

On the Monitor workstation, DSN/Monitor responds as follows. When the Link workstation selects the Transfer from Host Menu, the Monitor workstation changes from the Command Level Menu to the File Transfer Menu shown below. This Monitor Menu fills as the Transfer from Host Menu is completed on the Link workstation. Notice that the "Transfer direction" field in the File Transfer Menu on the Monitor workstation indicates "Sending".



The Monitor workstation may be unattended during file transfer, since no action is required. However, the user on the Monitor station may observe the File Transfer Menu and report the number of records successfully transferred. In addition, the following message is displayed during file transfer:

File transfer in progress

When file transfer is completed, the following message appears on the Monitor workstation File Transfer Menu:

End of local to remote file transfer

Stopping File Transfer

While file transfer is in progress, either the Link workstation or the Monitor workstation may stop file transfer.

On the Link Workstation

To stop file transfer on the Link workstation, refer to the file transfer chapters earlier in this reference manual. When the Link workstation presses STOP TRANSFER, the following message is displayed in the File Transfer Menu on the Monitor workstation:

Operation aborted.

On the Monitor Workstation

While the file transfer is in progress (either to or from the Monitor workstation), the only function key label which appears in the File Transfer Menu on the Monitor workstation is "stop transfer". To stop the file transfer in progress, press this key. The function key labels change to the following:

CONTINUE	CONFIRM STOP

At this point, you may press either key as follows:

1. If you press the CONTINUE function key, DSN/LINK resumes the file transfer, starting where it left off.

2. If you press the CONFIRM STOP function key, the function key labels change so that TIME OUT/EXIT is the only key displayed, and the following message appears on the screen:

   Waiting for remote response

   After several seconds, the Command Level Menu is displayed on Monitor workstation screen.

When file transfer is stopped by the Monitor workstation, the following message appears on the Link workstation transfer to/from host menu:

ERROR: Operation aborted, remote request.

The only function key displayed at this time on the Link workstation is EXIT DSN/LINK.

Using Commands with DSN/Monitor

Since DSN/Monitor plays the role of host computer to DSN/LINK, it has a simple command capability built in. You may use Monitor commands from the Link workstation to:

- ask for help about DSN/Monitor
- view a directory of Monitor files
- display a Monitor file
- read a Monitor news bulletin
- terminate DSN/Monitor and run a simple CP/M program
- send and receive messages

These commands may be issued only when no file transfer is in progress between the two Series 100's.

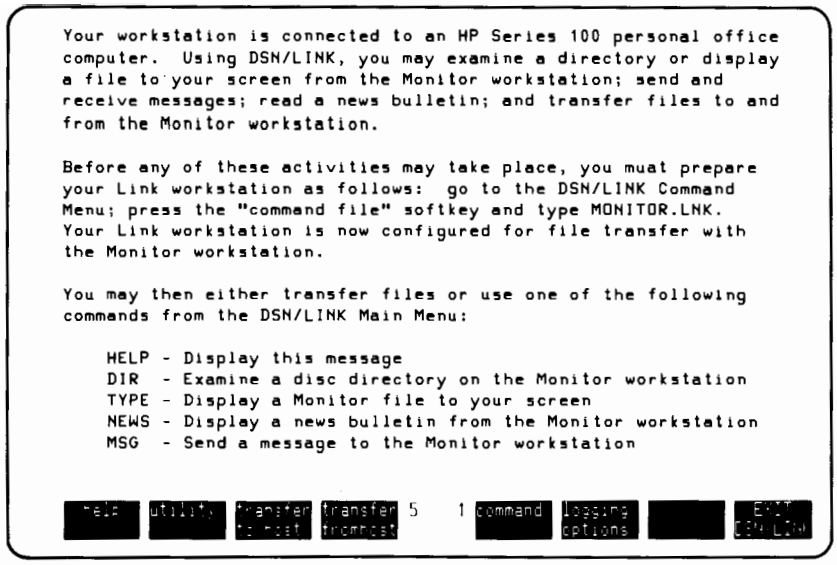
While in the DSN/LINK Main Menu, press the Return key. A prompt from DSN/Monitor (a period .) will display on the screen.

Asking for Monitor Help Information on the Link Workstation

If you desire information about using DSN/Monitor after the connection is made, type the following command in the DSN/LINK Main Menu:

help

The following text is sent from the Monitor workstation and is displayed on the Link workstation screen:



This help message may be modified on the Monitor workstation simply by editing the "HELP.MON" text file.

Viewing a Monitor Directory

If you wish to view a directory of a disc on the Monitor workstation, simply type the following command in the DSN/LINK Main Menu:

dir <drive>

NOTE

The disc drive defaults to the "a:" drive unless another disc drive on the Monitor workstation is specified.

DSN/Monitor will respond with the following type of information, displayed on the Link workstation screen:

```
Directory of remote drive X:

X: xxxxx xxx   xxK      xxxxxx xxx   xK    xxxxx xxx   xK
X: xxxxxxx      xK      xxxxxx xxx   xK    xxxxxxx    xxK
X: xxxxx xxx    xK      xxxxxx xx   xxK    xxxxx xxx   xK
X: xxxxxxxxx   xxK

Total bytes used:    xxK

Remaining bytes:    xxxK
```

Displaying a Monitor File

If you wish to view a file on a disc located on the Monitor workstation, simply type the following command in the DSN/LINK Main Menu:

type <filename>

The text of the file on the Monitor workstation will be displayed on the Link workstation screen.

Reading a News Bulletin

If you wish to read a news file from the Monitor workstation, simply type the following command in the DSN/LINK Main Menu:

news

Any information contained in the NEWS.MON file on the Monitor workstation will be displayed to the Link workstation screen. This news bulletin may be changed or updated simply by editing the NEWS.MON text file on the Monitor workstation.

Running a Simple CP/M Program

If you wish to run a simple CP/M program on the Monitor workstation from the Link workstation, refer to the section on DSN/Monitor Commands in Appendix B. The "Run" command terminates DSN/Monitor and allows the Link workstation to control the Monitor workstation to run simple CP/M programs.

Sending and Receiving Messages

You may send and receive messages with both workstations, as described in the following paragraphs.

There are two ways to send messages to the Monitor workstation from the Link workstation. Message length is limited to 127 characters.

1. Use the MSG command, followed by your message. If you choose this method, you must type the MSG command each time you send a message. (This command will appear on the Monitor screen along with the message, as shown in the example below.)

```
MSG Marge, final sales figures are just in; I'm sending the file.
```

2. Alternately, you may send messages to the Monitor workstation from the Link workstation simply by preceding the message with another period (.) as in the example below. (Note that the Link workstation will already have a period prompt (.) on the screen; you must precede the message with a period also.)

```
.Thanks, Marge; I'll have copies distributed right away.
```

To send a message to the Link workstation from the Monitor workstation, simply type the message you wish to transmit:

```
Sam, the monthly report is updated; here it comes.
```

On the Monitor workstation, it is not necessary to begin the message with a period (.) or the "msg" command. The message is displayed on the Link workstation as typed on the Monitor workstation.

If you would like to record the "conversation", use the logging function.

Logging with DSN/Monitor

When you wish to have a record of "conversations" or commands executed between the Link and Monitor workstations, use the Logging function. However, there are certain differences between what is recorded on the Link workstation and what is recorded on the Monitor workstation.

Logging on the Link workstation includes all information transmitted to the Monitor workstation. This is discussed in Chapter 6, Logging with a Series 100.

When logging is selected on the Monitor workstation, only successfully executed commands (including messages) and file transfers are logged, as shown in the following example:

```
MSG Marge, final sales figures are just in; I'm sending the file.
@@@Receiving SALES.RPT
Sam, the monthly report is updated; here it comes.
@@@Sending MONTHLY.RPT
.Thanks, Marge; I'll have copies distributed right away.
Thanks, Sam; keep me posted on the feedback you get, okay?
.Will do, Marge; and thanks for your help putting this together
```

Error messages, system prompts, and responses to commands from the Link workstation (such as displaying the contents of a file to a "type" command from the Link workstation) are not logged by DSN/Monitor.

To log to a file or printer (or both) on the Monitor workstation:

1. Return to the Command Level menu.

2. Select the destination (file, printer or both) and the LOGGING function key. (An asterisk (*) appears in the function key labels when they are selected.) When you select LOCAL FILE, the following message appears on the Monitor workstation screen:

   Please enter local log file name (or RETURN):

3. When you no longer wish to record commands and messages, press the LOCAL FILE or PRINTER function key to turn off logging. (The LOGGING function key also turns off when the LOCAL FILE function key is disabled.)

Returning to Local Control

You may return your Series 100 workstations to local control either during file transfer or after you have completed data communications. There are two ways in which to return your Series 100 workstations to local control.

On the Monitor Workstation

The EXIT MONITOR function key appears on the Monitor Command Level Menu. You may return the Monitor workstation to local control at any time by pressing the EXIT MONITOR function key; when you press EXIT MONITOR, the screen clears and the following message is displayed on the Monitor workstation:

DSN/Monitor Terminated.

During file transfer, you may also return to local control by while in the File Transfer Menu, described earlier using the "stop transfer" function key.

On the Link Workstation

You may return to local control either during file transfer or while in the DSN/LINK Main Menu. (Refer to earlier sections for stopping file transfer.)

If a password is used to access the Monitor workstation, you may also terminate data communications with the Monitor workstation by typing the following command:

BYE

The DSN/LINK Main Menu displays the following message:

End of session.
Enter password.

If no password is used, just the message "End of session" is displayed. The Link workstation is still connected to the Monitor workstation; however, you may not transfer files until the password is again entered.

NOTE

If a password is defined, the "BYE" command must be sent at the end of a session from the Link workstation. Otherwise, any user on the LINK workstation may access or transfer files from the Monitor workstation without entering a password.

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