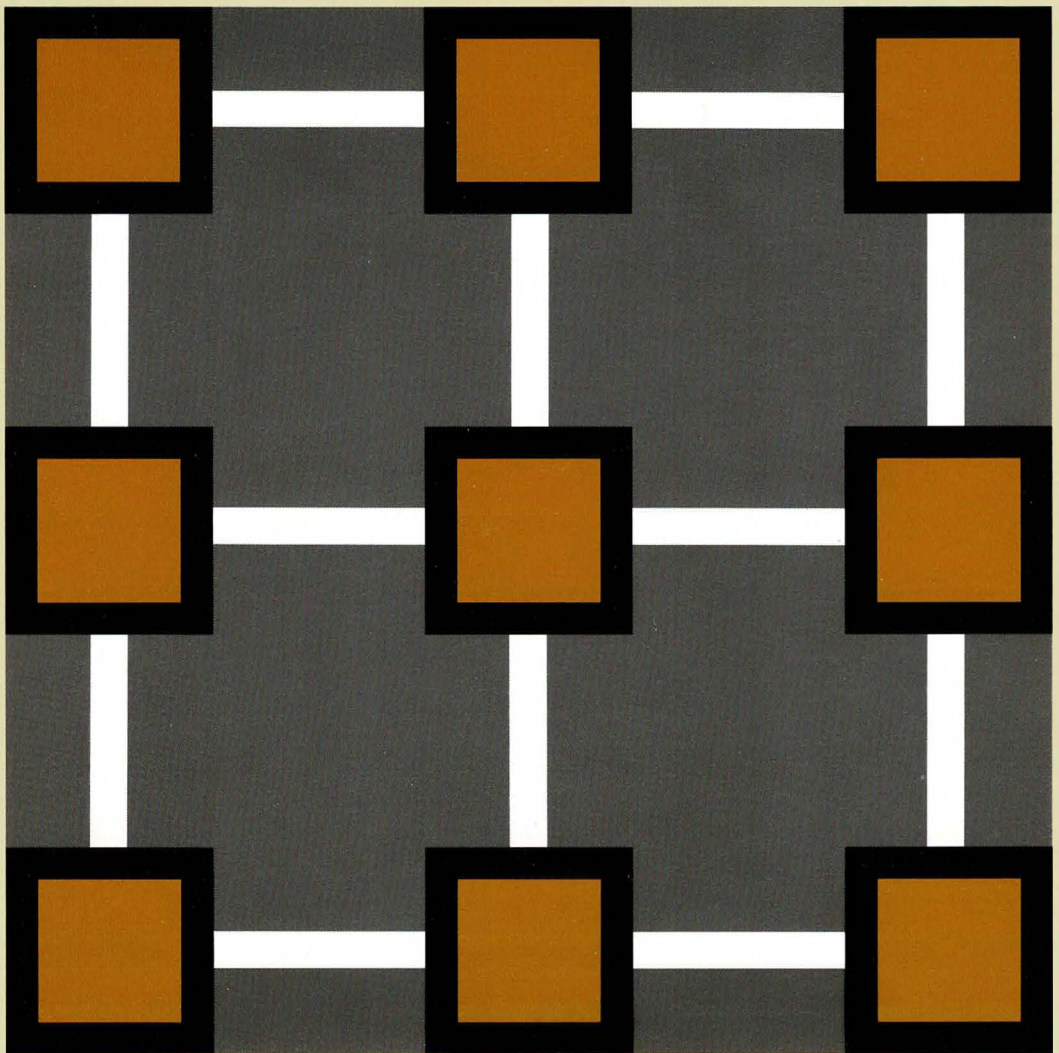


GRiD Server-User's Guide
For MS-DOS and PC-DOS Users





GRiD Server User's Guide for MS-DOS and PC-DOS Users

March 1987

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ABOUT THIS BOOK

GRiD Server™ is a powerful office resource sharing system that allows many users to share devices such as printers and disk drives, thereby eliminating the need for a printer and a disk drive for every computer system in the office. Up to 58 users can be connected to the GRiD Server system at the same time, over either phone lines or local cables.

This guide describes how you can use your GRiD™ computer with the Microsoft Disk Operating System (MS-DOS^(R)) or an IBM^(R) computer with the IBM Personal Computer Disk Operating System (PC-DOS^(R)) to gain access to the resources of the GRiD Server system. The GRiD Server provides a transparent interface between MS-DOS commands and remote disk drives and printers. It also allows you to access remote data files and printers from applications executing on your computer.

WHO SHOULD USE THIS MANUAL

This guide is intended for any user of MS-DOS or PC-DOS who uses a GRiD Server. It provides step-by-step instructions on how to sign on to the GRiD Server system and how to use the GRiD Server storage devices and printers under the MS-DOS and PC-DOS operating systems.

MS-DOS runs on GRiD computers and on some IBM compatible computers; version 2.11 or later is required to use the GRiD Server. PC-DOS runs on IBM personal computers; version 2.10 or later is required to use the GRiD Server.

To use the GRiD Server with an IBM personal computer via a local cable, you must have a GRiD Server-PCLink board (006702-00) installed in the IBM computer. To use the GRiD Server with a GRiDCase computer via a local cable, you must have the model 2230 GRiDCase/GRiDLink Expansion Unit attached to your GRiDCase. Alternately, to use the GRiD Server with a GRiDCase via a local cable, you can install the GRiD Server-PCLink board in a GRiDCase Expansion Chassis.

NOTE: GRiD-OS users should refer to the *GRiD Server User's Guide for GRiD-OS Users* (Order Number: 001701-44).

HOW TO USE THIS MANUAL

The information in this manual is organized as follows:

Chapter 1 describes how to sign on to a GRiD Server using either a local cable (GRiDLink) or a telephone connection (PhoneLink).

Chapter 2 describes the GRiD Server devices that are available after you sign on and explains how to use them.

Chapter 3 describes all of the commands available in the SERVER program.

Chapter 4 describes the error messages you can receive when using the GRiD Server and what to do in response.

Appendix A summarizes all special considerations applicable to accessing the GRiD Server from MS-DOS or PC-DOS.

Appendix B explains how to physically connect your computer to a local cable (GRiDLink) or a telephone line (PhoneLink). Information is included regarding the GRiD Server-PCLink board and connecting external modems.

Appendix C provides spaces for you to enter all the information you need regarding your particular GRiD Server installation.

SYSTEM ADMINISTRATOR

Throughout this book, the term System Administrator refers to the person in your organization who is responsible for maintaining the GRiD Server and assisting GRiD Server users. Find out who the System Administrator is for the GRiD Server system you plan to use, because you may need his or her assistance.

Ask your System Administrator to supply the information requested in Appendix C, which is referenced throughout this guide.

TYPOGRAPHICAL CONVENTIONS

As you read this guide, you should be aware of the following typographical conventions regarding keycaps and the representation of the syntax of MS-DOS commands.

Keycaps

Keycap labels are in upper case and bold. Thus, when you see the symbol **RETURN**, you should press the key labeled **RETURN**, rather than type the word **RETURN** letter by letter.

Command Syntax

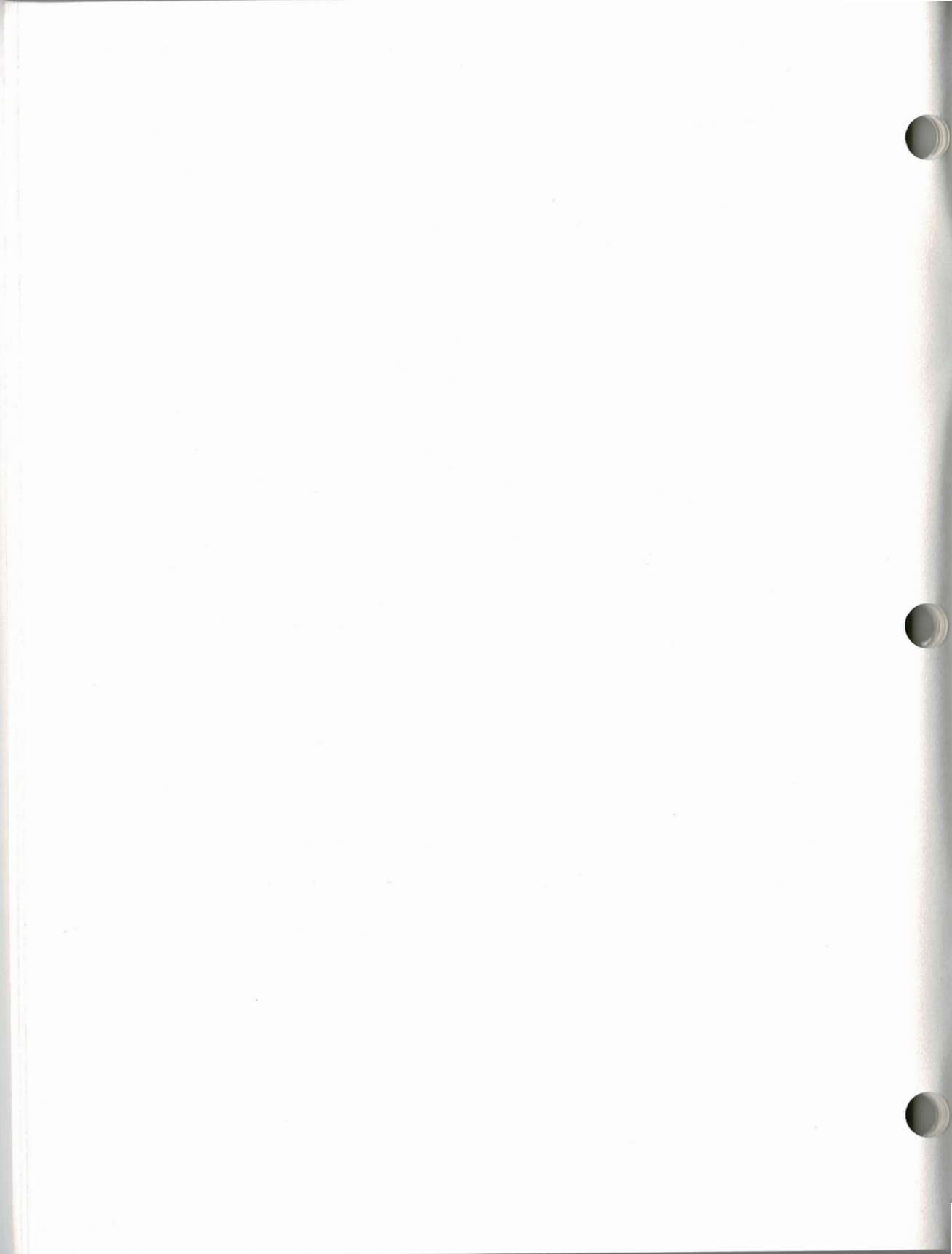
When the syntax of an MS-DOS command is specified in this manual, the following conventions are used.

- o The system prompt is shown before the command keyword as it appears on your computer screen.
- o A command parameter enclosed in square brackets ([]) is optional, i.e., under certain circumstances it is not necessary to enter a value for the parameter.

OTHER BOOKS YOU MAY NEED

The following books are either referenced in this guide or may be useful when using GRiD Server:

- o *MS-DOS Reference* manual, for basic MS-DOS information.
- o *GRiD-OS/MS-DOS Utility Programs User's Guide*, for information on moving files between GRiD-OS and MS-DOS/PC-DOS.
- o *GRiD Server-PCLink Hardware Installation Guide*, for instructions on installing the GRiD Server-PCLink board in your IBM computer.
- o *GRiD Server User's Guide for GRiD-OS Users*.



CHAPTER 1: HOW TO SIGN ON

This chapter describes how to sign on to GRiD Server under MS-DOS or PC-DOS. You can connect to GRiD Server via a telephone line or a local cable. Figure 1-1 shows the two connection methods. If you have a choice, use a cable instead of a telephone line because transmission over a cable is much faster. See Appendix B for specific connection hardware information.

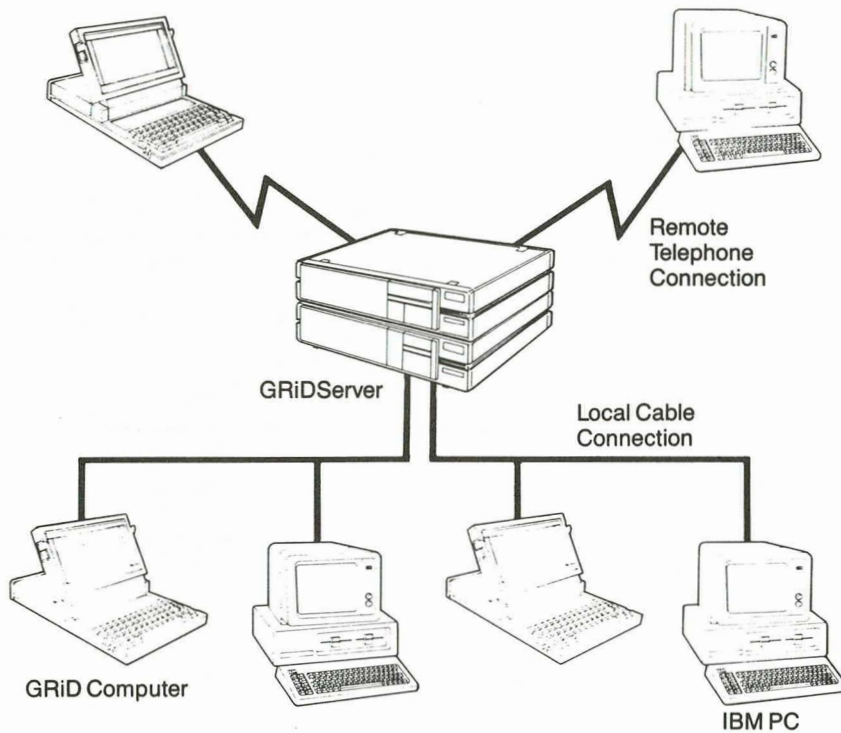


Figure 1-1. GRiD Server Telephone and Local Cable Connections

NOTE: If you use the InteGRiD operating environment in addition to MS-DOS or PC-DOS, do not sign on to a GRiD Server under both MS-DOS and InteGRiD using the same connection type (GRiDLink or PhoneLink).

SIGN-ON INFORMATION

Before signing on to GRiD Server for the first time, you need to get your sign-on ID and password from your System Administrator.

Your sign-on ID defines who you are to the GRiD Server.

Your password provides access security for your data. Do not give your password to others or write it down. If you want to change your password, you can do so with the UserSentry program under the GRiD-OS operating system. If you do not have access to GRiD-OS, ask your System Administrator to change your password for you.

To sign on you need:

- o Company : _____
- o Group : _____
- o User : _____
- o Password

If you are using a telephone line to connect to the GRiD Server, you need to get the GRiD Server phone number(s) from your System Administrator.

- o GRiD Server Phone Number: _____
-

SIGNING ON TO TWO GRiD SERVERS

You can be signed on to two GRiD Servers at the same time if you use a local cable to connect to one GRiD Server and a telephone line to connect to the other.

SIGNING ON VIA A LOCAL CABLE

The connection to GRiD Server via a local cable is called GRiDLink. Appendix B gives instructions on connecting a local cable to your computer. If you are using a GRiDCase computer, to connect to a local cable you need a Model 2230 GRiDCase/GRiDLink Expansion Unit or a GRiD Server-PCLink board installed in a GRiDCase Expansion Chassis. If you are using an IBM personal computer, you need a GRiD Server-PCLink board to connect to a local cable.

Files You Need to Sign On

Before you sign on to GRiD Server, make sure you have the following files in your current directory. If the files are not already present, you can place them in your current directory, your root directory, or any other directory specified in your MS-DOS PATH command (see your MS-DOS user's guide).

- o SERVER.EXE
- o GRIDLNK.EXE

Contact your System Administrator to obtain copies of these files. Make sure you have the correct version of each file for your computer; there is a version designed specifically for the GRiD IBM compatible computers or the IBM personal computer and a version designed specifically for the GRiD Compass™ computer.

NOTE: Do not execute GRIDLNK.EXE directly from the command line.

To Sign On Via a Local Cable

1. If you are signing on to a GRiD Server for the first time, perform the following steps; otherwise proceed to Step 2.
 - a. Type in the Server command at the system prompt as shown below, then press RETURN. (For more information about the Server command, see Chapter 3.)


```
A>server
```
 - b. When the Server Commands menu (Figure 1-2) appears with a highlighted box around the Sign-On command, press RETURN.

```

Sign-on
Sign-off
Edit Sign-on information
Display GRiD Server devices
Retrieve Sign-on information from a file
Write Sign-on information to a file
Display printer queue
Assign printer
Display message of the day
Exit

Commands: Select item and press RETURN
Version 87.2.12 of Server
Copyright (c) 1984, 1985, 1986, 1987 GRiD Systems Corporation
  
```

Figure 1-2. Server Commands Menu

- c. When the Sign-On form shown in Figure 1-3 appears, fill in all items on the form including the password, pressing UpArrow or DownArrow to move from item to item. For the Connection Type, press LeftArrow, if necessary, to select GRiDLNK to tell the computer you are using a local cable. Press RETURN when you have finished filling in the form.

GRiDLNK	PHONELNK
Connection type	GRiDLNK
Company	
Group	
User	
Password	
Sign-on: Fill in form and press RETURN	

Figure 1-3. Sign-On Form

NOTE: When you move the highlighted box to the Password item, you see the cursor inside. When you begin typing, the cursor disappears so that no one can see the password you type. To correct a typing error when filling in the password, press the BKSP key until the cursor reappears, then type the password again.

- d. If you are using the GRiD Server-PCLink board, the form shown in Figure 1-4 appears. This form allows you to change the interrupt request line the GRiD Server-PCLink board uses to communicate with your computer's microprocessor.

Normally, leave this form set at 3, the default. Specify an interrupt other than the default (3) only if you have other communications boards installed in your computer that use interrupt line 3. (Check the technical reference documentation for your other communications boards to determine the hardware interrupt line they use.)

The interrupt request switch block on the GRiD Server-PCLink board must be set to the same value as the Alternate Interrupt form. See Appendix B for details on setting the switch block and restrictions that apply when choosing an interrupt request line.

2	3 (Default)	4	5	7
Alternate interrupt				
3 (Default)				
Sign-on: Fill in form and press RETURN				

Figure 1-4. Alternate Interrupt Form

- e. When you have finished filling in the form, press RETURN. The flickering triangle in the lower left corner of the screen indicates that your computer is communicating with the GRiD Server.
 - f. If you want to save the sign-on information you have just entered to avoid entering it every time you sign on to GRiD Server, see the procedure in the section "Saving Sign-On Information", near the end of this chapter.
 - g. Proceed to step 3.
2. If you have previously signed on to GRiD Server as described in Step 1, and you saved your sign-on information in a file, you can sign on using one of the following two methods:
- a. Type in the Server command at the system prompt as shown below, with the name of the file that contains your sign-on information and optionally your password, and press RETURN.

```
A>server [sign-on file name [password]]
```

If you include your password on the command line, the server program automatically signs you on, displays the Message of the Day and the list of server devices, and exits back to MS-DOS.

If you don't enter your password with the SERVER command, the Sign-On form appears, where you must enter your password and press RETURN. The flickering triangle in the lower left corner of the screen indicates that your computer is communicating with the GRiD Server.

or

- b. Type in the Server command at the system prompt without specifying a sign-on file or password and press RETURN. When the Server Commands menu appears, press DownArrow to highlight the Retrieve Sign-on Information From a File command and press RETURN. The form shown in Figure 1-5 appears. Enter the name of the file that contains your sign-on information and press RETURN.

Press RETURN again to select the Sign-On command from the commands menu. When the Sign-On form appears, enter your password and press RETURN. The flickering triangle in the lower left corner of the screen indicates that your computer is communicating with the GRiD Server.

File name _____
Retrieve Sign-on information: Fill in form and press RETURN

Figure 1-5. Retrieve Sign-On Information Form

- After you have successfully signed on, a screen containing the Message of the Day (if available) and a list of GRiD Server devices appears (Figure 1-6). The System Administrator creates the Message of the Day and determines the names of the available devices.

Write down the drive letters and device names for later use within other applications. You can also use the DEVICES command under GRiDCase MS-DOS 3.2 and Compass MS-DOS 2.11 to list GRiD Server devices. The drive letters differ depending on which computer you are using and the peripherals that are attached. The GRiD Server devices are described in Chapter 2.

```

WELCOME TO GRiD SERVER
Wednesday, February 25, 1987
Automatic tape backup is scheduled for 2-3 am.

Devices on GRiD Server

Drive Letter   Device Name
-----
F              User Subjects
G              Software Subjects
H              Shared Subjects
I              Group Subjects
J              Company Subjects
K              Letter quality printer
L              Dot matrix printer

Sign-on completed
  
```

Figure 1-6. Message of the Day and GRiD Server Devices

- Press any key to return to the Server Commands menu.
- Press UpArrow to select the Exit command and press RETURN to return to the system prompt. You are now connected to the GRiD Server until you restart your computer or enter the Server command and select Sign-off on the Server Commands menu.

SIGNING ON VIA THE TELEPHONE

The connection via a telephone line is called PhoneLink. Instructions for connecting your computer to the phone system are given in Appendix B.

After dialing and before signing on to GRiD Server, you may want to have a telephone conversation on the same telephone line you are using to connect to GRiD Server. For example, you might need to give the operator billing information or ask for an extension. In this case you must use a Y-connector so that you can plug both your computer and a telephone into the telephone line. Set the Voice Before Data item on the second PhoneLink Sign-On form to Yes to allow for your conversation. When you are done speaking and want to switch to data mode, hang up the telephone and press RETURN.

Files You Need to Sign On

Before you sign on to GRiD Server, make sure you have the following files in your current directory. If the files are not already present, you can place them in your current directory, your root directory, or any other directory specified in your MS-DOS PATH command (see your MS-DOS user's guide).

- o SERVER.EXE
- o PHONELNK.EXE

Contact your System Administrator to obtain copies of these files. Make sure you have the correct version of each file for your computer; there is a version designed specifically for the GRiD IBM compatible computers or the IBM personal computer and a version designed specifically for the GRiD Compass computer.

NOTE: Do not execute PHONELNK.EXE directly from the command line.

PhoneLink with the GRiD Compass Computer

Before you can sign on to a GRiD Server via PhoneLink with a GRiD Compass computer, you must have the following statement in your system configuration file (CONFIG.SYS):

```
DEVICE = MODEM.SYS
```

In addition, you must have the file MODEM.SYS available in the root directory of your start-up device. To determine whether or not this statement is present, you can view the contents of the CONFIG.SYS file by entering the following command:

```
A>type config.sys
```

If the required statement is not present or there is no CONFIG.SYS file, you can use any text editor to edit an existing CONFIG.SYS file or create a new one. Alternately, you can use the COPY command to create a CONFIG.SYS file with the required statement by performing the following steps:

1. Enter the COPY command as follows and press RETURN:

```
A>copy con config.sys
```

This statement causes MS-DOS to place all the characters you enter from the keyboard in the CONFIG.SYS file.

2. Enter the following statement:

```
device = modem.sys
```

3. Press CODE-6 or CTRL-Z and press RETURN to end insertion of characters into the CONFIG.SYS file, save the file, and return to the system prompt.

You must restart your system for the new CONFIG.SYS file to be recognized.

Switch Settings for External Modems

GRiD supports the following external Hayes^(R) compatible modems: Hayes Smartmodem 1200TM and USRoboticsTM Courier 2400TM.

Set the switches as follows on these modems:

```
1, 5, 6, 7, 10  UP (or OFF)
2, 3, 4, 8, 9   DOWN (or ON)
```

NOTE: Older Hayes modems may not have switches 9 and 10. The group switch (far right) on the USRobotics Courier 2400 should be UP.

If you need to change any of the switch settings, power the modem off, adjust the switches, then power the modem on again.

To Sign On Via the Telephone

1. If you are signing on to a GRiD Server for the first time, perform the following steps; otherwise proceed to Step 2.
 - a. Type in the Server command at the system prompt as shown below, then press RETURN. (For more information about the Server command, see Chapter 3.)


```
A>server
```
 - b. When the Server Commands menu (Figure 1-7) appears with a highlighted box around the Sign-On command, press RETURN.

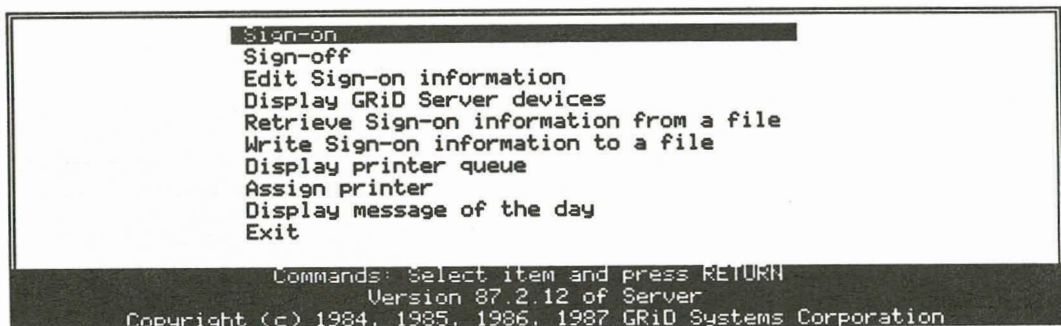


Figure 1-7. Server Commands Menu

- c. When the Sign-On form (Figure 1-8) appears, fill in all items on the form including the password, pressing UpArrow or DownArrow to move from item to item. For the Connection Type, press RightArrow to select PHONELNK to tell the computer you are using a telephone line.

GRiDLNK ■■■■■■■■■■	
Connection type ■■■■■■■■■■	
Company	
Group	
User	
Password	
Sign-on: Fill in form and press RETURN	

Figure 1-8. Sign-On Form

NOTE: When you move the highlighted box to the Password item, you see the cursor inside. When you begin typing, the cursor disappears so that no one can see the password you type. To correct a typing error when filling in the password, press the BKSP key until the cursor reappears, then type the password again.

- d. When you have finished filling in the form, press RETURN.
- e. When the second PhoneLink Sign-On form appears (Figure 1-9), fill in the required information described in the following sections. Press UpArrow or DownArrow to move from item to item in the form. Press LeftArrow or RightArrow to select from the choices for each item.

Phone number	■■■■■■■■■■
Modem type	GRiD internal
Dial type	Touch-Tone
Baud rate	1200
Voice before data	No
Speaker volume	On
Wait for answer	30
Disconnect after	10
Sign-on: Fill in form and press RETURN	

Figure 1-9. Second PhoneLink Sign-On Form

Phone Number

The Phone Number item has no initial setting. The correct setting is the telephone number of the GRiD Server to which you want to connect. The characters that are valid in a phone number are listed below along with their functions.

<u>Entry</u>	<u>Functions</u>
0-9, *, #	These characters perform the same functions as those on your telephone.
^, period, comma	These characters add a one second delay before your computer dials the number. With the GRiD Compass internal modem, ^ causes the modem to wait for a dial tone before dialing.
W	With external modems that support the Hayes extended command set, W causes the computer to wait for a dial tone before continuing dialing. This is useful when you have to dial 9 and wait for an outside line or when you're placing a call through a long-distance carrier service.
space, parentheses, hyphen	You can use any of these characters for readability. They do not affect dialing.

NOTE: All GRiD internal modems, except the Compass internal modem, automatically wait for a dial tone before dialing. With the GRiD Compass internal modem, you should precede the phone number with ^ to cause the modem to wait for a dial tone before dialing.

Examples:

242

The computer waits for a dial tone, then dials extension 242.

9.....(408)-555-1212

The computer waits for a dial tone, dials 9 for an outside line, waits five seconds, then dials the long-distance number.

9.....555-1212.....00000 (213)-555-1212

The computer waits for a dial tone, dials 9 for an outside line, waits five seconds, then dials 555-1212. The system then waits 11 seconds, dials an access code (00000 in this example), followed by a ten-digit long-distance number. This example typifies the procedure for placing a call from the computer through a long-distance carrier service.

Modem Type

The initial setting for the Modem Type item is GRiD internal. The choices are GRiD internal, Hayes compatible external, and External manual. Set this item to GRiD internal if you have a GRiD computer with a built-in modem. If you are using an external Hayes compatible modem or have an IBM personal computer with an internal Hayes compatible modem board, select Hayes compatible external. If you are using an external manual dial modem, select External manual.

GRiD supports the following external Hayes compatible modems: Hayes SmartModem 1200 and USRobotics Courier 2400.

Dial Type

The initial setting of Dial Type is Touch-ToneTM. The choices are Pulse and Touch-Tone. Select an item to indicate whether your telephone system uses Pulse (rotary) dialing or the Touch-Tone system.

Most modern digital telephone installations use the Touch-Tone system. For older, nondigital equipment, set the Dial Type item to Pulse.

Baud Rate

The initial setting for the Baud Rate item is 1200 bits per second. The choices are 300, 1200, and 2400 bits per second. The baud rate is the speed at which data is transmitted and received. Set this item to the baud rate at which your modem is set to transmit and receive data.

NOTE: The baud rate you set in this item must match the baud rate of the GRiD Server modem that you are dialing in to. Contact your System Administrator for the allowable baud rates you can use.

Voice Before Data

The initial setting for Voice Before Data is No. The choices are Yes and No. When you're in voice mode, you can talk to someone over the telephone. When you're in data mode, only data can be transmitted and received. You're always in voice mode while dialing. With the Voice Before Data item, you choose whether to enter data mode immediately after dialing, or to remain in voice mode.

Remaining in voice mode has several uses. When making a credit card call, you can dial the number and talk to an operator before entering data mode to start communications. Likewise, when you're calling from a hotel, you can give your room number to an operator if necessary.

If you're in voice mode, simply press RETURN to enter data mode.

NOTE: To talk to someone over the telephone in voice mode you must use a Y-connector so that you can plug both your computer and a telephone into the telephone line.

Speaker Volume

The initial setting for the Speaker Volume item is On. The choices are Off and On. When set to On, the speaker stays on while the telephone number is being dialed; it is turned off after you are connected. With the speaker on, you can hear whether the telephone number you reach is busy, ringing, disconnected, or a wrong number.

Wait For Answer

The initial setting of the Wait For Answer item is 30 seconds.

After changing from voice mode to data mode, your computer waits for the GRiD Server to answer and complete the PhoneLink connection. The Wait For Answer item determines how long your computer waits for the carrier signal from the GRiD Server. If there is no signal from the carrier by the end of the time period you specify, your computer disconnects the PhoneLink.

To change the setting of the Wait For Answer item, type an integer representing the maximum number of seconds you want your computer to wait before disconnecting.

Disconnect After

The initial setting for Disconnect After is 10 minutes.

The Disconnect After item determines how long PhoneLink remains connected when there is no data activity (i.e., data transfer between your computer and the GRiD Server). The choices are (1-250) minutes of inactivity, and Don't disconnect. If Disconnect After is set to a number of minutes and that number of minutes has passed with no activity, PhoneLink disconnects. If Disconnect After is set to Don't disconnect, PhoneLink never disconnects no matter how much time passes without activity (unless the phone connection is physically interrupted).

When it has disconnected, PhoneLink attempts to reconnect if you subsequently try to access a GRiD Server device. If you are using an MS-DOS application, you can access a GRiD Server device to open or read a new file, and PhoneLink will attempt to reconnect. However, if you are using an MS-DOS application and have already opened a file on a GRiD Server device, and PhoneLink disconnects because of lack of activity, PhoneLink may not be able to reconnect the next time you try to access the file. It is thus recommended that you set Disconnect After to Don't disconnect when you are using an application that accesses a file on a GRiD Server device and does not read the entire file into the memory of your computer.

To change the setting of the Disconnect After item, select (1-250) minutes of line inactivity and type an integer representing the maximum number of minutes you want Phonelink to wait before disconnecting, or select Don't disconnect.

Serial Port

This item only appears on the form if you are using a computer that has both COM1 and COM2 serial ports. The initial setting is COM1. Set this item to the serial port to which your external modem is connected.

- f. When you have finished filling in the form, press RETURN. After the system dials and connects, a flickering triangle appears in the lower left corner of the screen to indicate that your computer is communicating with the GRiD Server.
- g. If you want to save the sign-on information you have just entered to avoid entering it every time you sign on to GRiD Server, see the procedure in the section "Saving Sign-On Information", near the end of this chapter.
- h. Proceed to Step 3.

Write down the drive letters and device names for later use within other applications. You can also use the DEVICES command under GRiDCase MS-DOS 3.2 and Compass MS-DOS 2.11 to list GRiD Server devices. The drive letters differ depending on which computer you are using and the peripherals that are connected. The GRiD Server devices are described in Chapter 2.

```

WELCOME TO GRiD SERVER
Wednesday, February 25, 1987
Automatic tape backup is scheduled for 2-3 am.

-----
Devices on GRiD Server
-----
          Drive Letter   Device Name
          -----
          F               User Subjects
          G               Software Subjects
          H               Shared Subjects
          I               Group Subjects
          J               Company Subjects
          K               Letter quality printer
          L               Dot matrix printer

-----
Sign-on completed
    
```

Figure 1-11. Message of the Day and GRiD Server Devices

4. Press any key to return to the Server Commands menu.
5. Press UpArrow to select Exit and press RETURN to return to the system prompt. You are now connected to the GRiD Server until you reboot your computer, or enter the Server command and select Sign-off on the Server Commands menu.

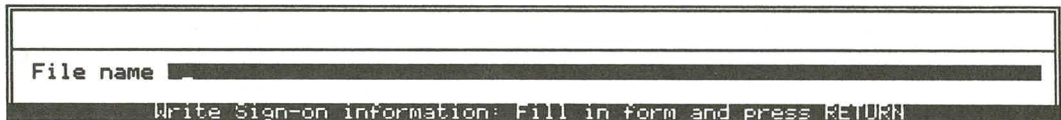
NOTE: If you are using a GRiDCase or GRiDLite computer with an internal modem and the phone line becomes detached from the computer, the computer may seem to have "crashed." To recover, plug the phone line back into the computer. The phone line provides power to the modem, which becomes temporarily inoperable if the phone line is disconnected.

SAVING SIGN-ON INFORMATION

After you have signed on, you can save your sign-on information to use the next time you need to sign on by following the steps below.

To Save Sign-On Information

1. Select Write Sign-On Information to a File on the Server Commands menu and press RETURN.
2. The form shown in Figure 1-12 appears. If you previously retrieved a sign-on file or specified a sign-on file when you gave the Server command, the name of that file is shown in the form. Press RETURN to save your sign-on information to the same file. To save your sign-on information to a different file, backspace over the name shown in the form, enter the name of the file in which you want to save your sign-on information, and press RETURN.



```
File name _____
Write Sign-on information: Fill in form and press RETURN
```

Figure 1-12. Write Sign-On Information to a File Form

3. The sign-on information that has been saved is displayed as shown in Figure 1-13. Note that PhoneLink sign-on information is saved whether or not you used PhoneLink to sign on.

```
Connection type = PHONELNK
Company = Marketing
Group = Western
User = Franklin
Modem type = GRiD Internal
Dial type = Touch-Tone
Baud rate = 1200
Voice before data = No
Speaker volume = On
Wait for answer = 30
Disconnect after = 10
Serial Port = COM1
Alternate interrupt = 3 (Default)
```

Figure 1-13. Display of Saved Sign-On Information

4. When the message "Write Sign-on information completed" is displayed, press any key to return to the Server Commands menu.
5. Select Exit and press RETURN if you wish to return to the system prompt.

SIGNING OFF

You are automatically signed off the GRiD Server when you power off your computer.

If you wish to sign off GRiD Server and continue to use your computer, perform the following steps:

To Sign Off

1. Select Sign-Off on the Server Commands menu and press RETURN.
2. If you are signed on to more than one GRiD Server, the form shown in Figure 1-14 appears. Select the GRiD Server from which you wish to sign off and press RETURN.

NOTE: If you sign on to two GRiD Servers, it is recommended that you sign off in reverse order. For example, if you sign on to the first GRiD Server using GRiDLink and the second GRiD Server using PhoneLink, you should sign off the second GRiD Server before you sign off the first. If you don't sign off in reverse order, the memory used for the first connection (as much as 60 Kilobytes) isn't released until after you sign off the second connection.

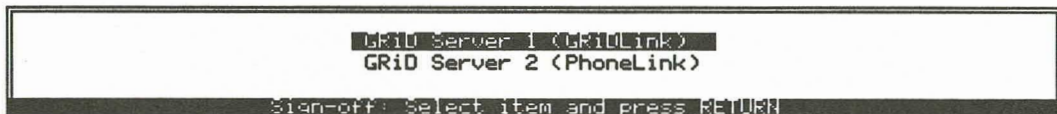


Figure 1-14. Sign-Off Menu

3. A message appears asking you to press RETURN to sign off the GRiD Server. When the message "Sign-Off Completed" is displayed, press any key to return to the Server Commands menu.
4. Select Exit and press RETURN to return to the system prompt.

CHAPTER 2: HOW TO USE GRiD SERVER DEVICES

This chapter describes GRiD Server devices, how they are organized, and how to use them.

GRiD SERVER DEVICES

Figure 2-1 shows a list of the devices that might be available to you after you have signed on to a GRiD Server. The purposes of the devices are described in the following sections.

Devices on GRiD Server		
Drive Letter	Device Name	Current Directory
F	User Subjects	\
G	Software Subjects	\
H	Shared Subjects	\
I	Group Subjects	\
J	Company Subjects	\
K	Letter quality printer	\
L	Dot matrix printer	\

Display server devices completed

Figure 2-1. GRiD Server Devices

Note that the drive letters differ depending on which computer you are using. The drive letters may change if the System Administrator modifies the GRiD Server configuration (e.g., changes the types of devices or the order in which they are listed). You can use the DEVICES command under GRiDCase MS-DOS 3.2 and Compass MS-DOS 2.11 to list the GRiD Server devices and drive letters.

You can use the GRiD Server devices at the command prompt or from within applications until you either enter the Server command and sign off the GRiD Server, or power down your computer.

Your System Administrator determines the number of GRiD Server devices, their names, and which users can read from and write to them.

NOTE: The devices shown in Figure 2-1 and discussed throughout this book may differ from the devices at your location in the following ways:

- o A system name other than "GRiD Server" may appear as the GRiD Server name.
- o The number of devices may differ; it may be as few as two and as many as fifteen.
- o The device names themselves (User Subjects, Group Subjects, etc.) may differ. For example, User Subjects may be called Private.

User Subjects

The System Administrator can create a User Subjects device for each user on the system, according to user sign-on identification information. You can use your User Subjects device for your private files. You are the only user who can read or write to the files stored in this device.

Group Subjects

The System Administrator can assign a Group Subjects device to a specific department or group within a company. Only the users within that department or group have access to the files in this device. Several sets of files can reside in Group Subjects on your GRiD Server, each accessible by users in a different group.

The group to which you belong is the same group that you specify in the Sign-On form. Only you and other users who specify the same group and company name in the Sign-On form can access the files stored in the Group Subjects device assigned to your group unless your System Administrator provides otherwise.

Usually, the Group Administrator for your group limits the users who can actually create or write to files in Group Subjects. Typically, you use this device to either browse files for information or to copy the files to a local device on your computer.

Company Subjects

The Company Subjects device holds files that can be accessed by anyone within the company or organization. Only you and users that specify the same company name in the Sign-On form can access the files in the Company Subjects device. Several sets of files can reside in the Company Subjects device on your GRiD Server, each accessible by users in a different company.

Usually, the Company Administrator for a company limits the users who can actually create or write to files in Company Subjects. Typically, you use this device to either browse files for information or to copy the files to a local device on your computer.

Shared Subjects

The Shared Subjects device is designed to serve as an electronic bulletin board, where all users, regardless of sign-on ID, can read and write files and otherwise share data.

Software Subjects

Software Subjects contains programs for use on your computer. You can use this device to obtain the latest releases of programs such as SERVER.EXE for your computer.

Usually, the System Administrator limits the users who can create or write to files in Software Subjects.

Printers

Printer devices contain files that are waiting to be printed. Refer to the section "Printing Files Using GRiD Server Printers" for a description of how to use these devices.

USING FILES ON A GRiD SERVER DEVICE

You can use MS-DOS commands to copy, delete, print, and display the files on GRiD Server devices just as you do the files on local devices. When you are signed on to the GRiD Server, you can use a GRiD Server device just as if it were a local device, by specifying the drive letter.

Files and programs can reside on any of the GRiD Server devices except the printer devices, which are used for printing only. Use the User Subjects device for your own files; use the other devices to share data with other users.

In the following example of a command using a GRiD Server device, the file SAMPLE.TXT is copied from the Shared Subjects device to floppy disk drive A.

```
A>copy h:sample.txt a:
```

Restrictions

Note the following restrictions regarding the use of GRiD Server devices under MS-DOS:

- o You cannot execute programs directly from a GRiD Server device. To use an application stored on a GRiD Server device, you must first copy the application to a local device on your computer. You can use data files stored on GRiD Server devices directly from most applications running on your computer.
- o You cannot use remote GRiD Server devices with the MS-DOS input/output redirection facility. If output redirection is necessary, first redirect to a local file and then copy it from the local device to a GRiD Server device. If input redirection is necessary, first copy the file to a local device and then use it for redirection.
- o You cannot use the MS-DOS EDLIN command directly on files stored on GRiD Server devices. To edit a file with EDLIN, you must first copy the file to a local device on your computer.
- o You cannot use the MS-DOS File Comparison (FC) utility to compare a file stored on GRiD Server to a file stored on a local device. To compare a GRiD Server file to another file, you must first copy the GRiD Server file to a local device, then compare the two files.
- o You cannot use the MS-DOS DIR command on the printer devices.
- o The following commands do not work on GRiD Server devices: CHKDSK, DISKCOMP, DISKCOPY, FC, FDISK, FORMAT, LABEL, RECOVER, PRINT, SUBST, and SYS.
- o MS-DOS 3.2 networking commands and capabilities are not supported.

NOTE: Because of slower transmission speeds on telephone lines, it takes much longer to access files on GRiD Server when you are signed on over a telephone line than to transmit over a local cable. If you are using PhoneLink to connect to the GRiD Server, it is recommended that you copy a file to a local device on your computer before accessing the file from an application. You can copy the file back to the GRiD Server when you have finished using it.

SHARING FILES

Shared files can reside in Company Subjects, Group Subjects, or Shared Subjects. Unless otherwise provided by the appropriate administrator, files in Company Subjects or Group Subjects can be read from but not written to by all users signed on under the proper company or group name. Files in Shared Subjects can be both read from and written to by all users signed on to the GRiD Server.

You can share files in the following two ways:

- o If you have been granted the authority to do so by your System Administrator, you can duplicate a file (e.g., a company newsletter, a memo, a meeting agenda) that is intended to be read by many users, but not updated, to a device such as Company Subjects or Group Subjects.
- o Many users can read and update the same file using Shared Subjects. When sharing files in Shared Subjects, you must be careful not to overwrite someone else's changes to a file.

For example, a department may have a budget worksheet located in the Shared Subjects device. All of the managers in the department need to update the worksheet using Lotus 1-2-3. If two managers select the worksheet at the same time, modify it, and save their changes, one set of changes is lost. Both managers made changes to the same original worksheet. When the second manager saved the worksheet, the changes made by the first manager were lost since they were not incorporated in the second manager's copy of the worksheet.

To prevent this loss of data, use the following procedure:

1. Copy the document from Shared Subjects to a local device or User Subjects.
2. Delete the copy of the document in Shared Subjects.
3. Make your changes to the document.
4. Copy the document back to Shared Subjects.
5. Delete your copy of the document.

This procedure prevents two users from updating the document at the same time.

NOTE: If you expect to keep a file from Shared Subjects for more than a short period of time, you may wish to replace it in Shared Subjects with a file of the same name containing a message to other users telling them the whereabouts of the file.

PRINTING FILES USING GRiD SERVER PRINTERS

Any application supported on the GRiD Server that uses the PRN device can print on a GRiD Server printer, after you have used the Assign Printer function of the Server program to select the desired printer. If the GRiD Server printer is currently printing another document, your document is automatically stored in the printer's queue. Documents in the queue are printed in the order received.

You can also print on a GRiD Server printer by simply copying a file to the device letter that represents the printer. However, when you use this method of printing, you must make sure that you are copying a printable ASCII text file or the printer will print indecipherable data. For example, Lotus 1-2-3 worksheets are not in a format that can be copied directly to a GRiD Server printer; they must be printed using the Lotus 1-2-3 print command.

To ensure correct operation when you are printing on a GRiD Server printer, you must pause at least thirty seconds between print requests to ensure that the requests create separate print files.

You cannot print on a GRiD Server printer by using the MS-DOS PRINT command, FN-ECHO, or CTRL-P. Using the PRINT command, FN-ECHO, or CTRL-P causes unpredictable results.

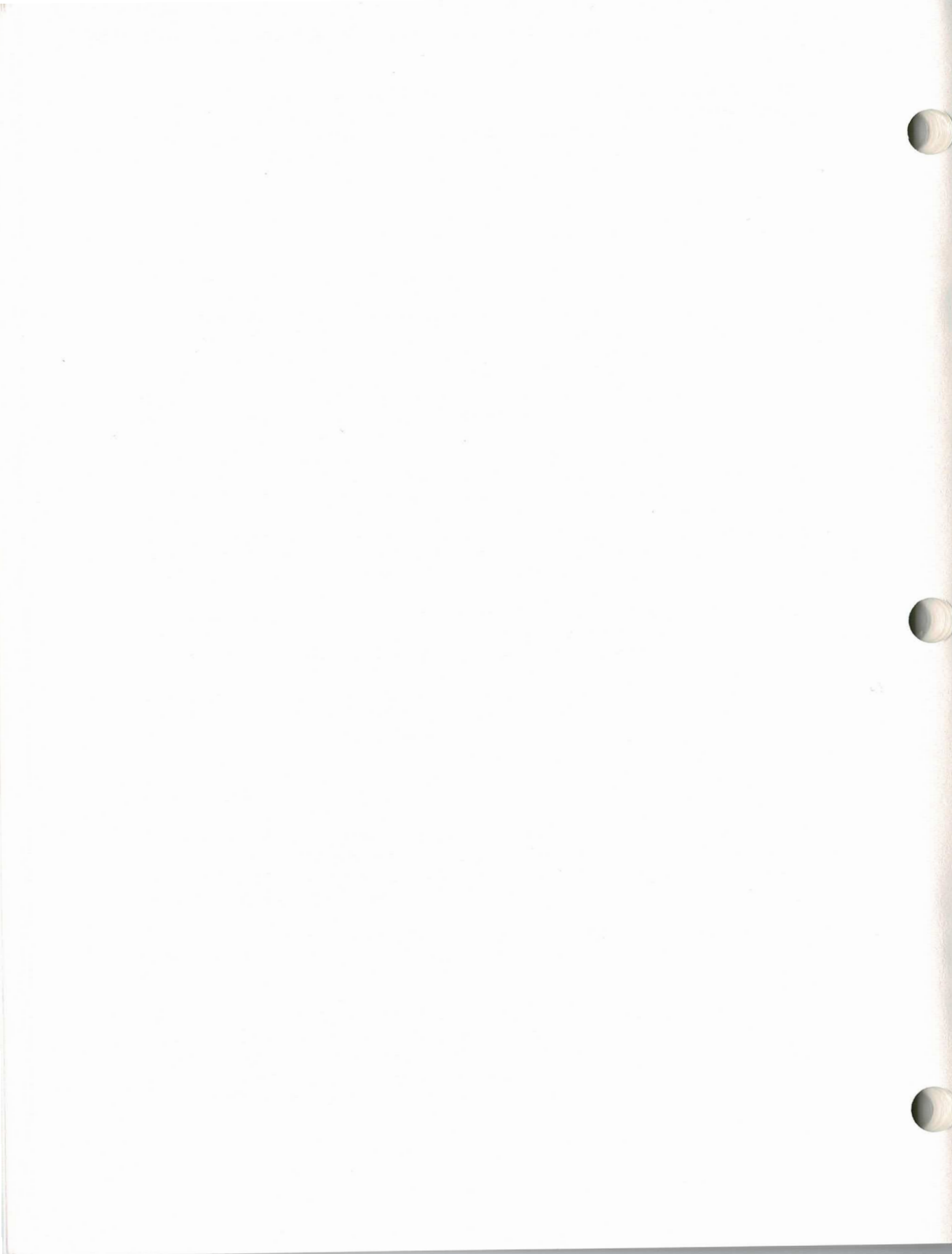
To Assign a Printer

The Assign printer command of the Server program selects the printer to be used by the PRN device. You can select a GRiD Server printer or a local printer. The Assign Printer command is described in the section "The Assign Printer Command" in Chapter 3.

Each time you sign on you must assign your printer if you want to use a GRiD Server printer, since this information is not saved after you sign off.

NOTE: The GRiD Server printer you select must match what the application expects; for example, of the currently supported GRiD Server printers, Lotus 1-2-3 needs an Epson FX-series printer to print graphs. Refer to the manual for your MS-DOS application to find out which GRiD Server printer device you should select.

NOTE: You must sign on to GRiD Server before printing with a GRiD Server printer.



CHAPTER 3: SERVER COMMANDS

This chapter describes the commands available in the Server program.

THE SERVER PROGRAM

The Server program gives you access to GRiD Server and its disks and printers. You can start the Server program by entering the Server command as described in the procedures for signing on to the GRiD Server in Chapter 1.

The Server program displays the Server Commands menu (Figure 3-1).

```
Sign-on
Sign-off
Edit Sign-on information
Display GRiD Server devices
Retrieve Sign-on information from a file
Write Sign-on information to a file
Display printer queue
Assign printer
Display message of the day
Exit

Commands: Select item and press RETURN
Version 87.2.12 of Server
Copyright (c) 1984, 1985, 1986, 1987 GRiD Systems Corporation
```

Figure 3-1. Server Commands Menu

To select and use an item from the Server Commands menu, perform the following steps:

1. Press DownArrow or UpArrow to highlight the desired item in the menu. Alternately, you can type the first letter of an item to highlight it; if there is more than one item with the same first letter, press the letter again to move to the next item with the same first letter. For example, press E to highlight Edit Sign-On Information, and press E again to highlight Exit.

To jump to the top item in a menu, press FN-HOME or FN-PGUP; to jump to the last item in a menu, press FN-END or FN-PGDN.

2. Press RETURN to select the highlighted item.
3. When some items are selected, a form appears in which you can specify or select additional information. Press DownArrow or UpArrow to move from one item to the next in the form. Use the LeftArrow and RightArrow keys to make your selection within an item. If you need to correct mistakes in typed information, press BKSP to erase a single character at a time, or ALT-BKSP to erase a word at a time. Press RETURN when the information in the form is correct; the form is saved and the function you requested is executed.

If you have entered information and have not yet pressed RETURN, you can cancel your entries by pressing ESC. The original information in the form remains intact and the Server Commands menu reappears.

The following sections describe the Server commands and their functions in detail.

SIGN-ON

The Sign-On command allows you to connect to a GRiD Server. To initiate the command, select the Sign-on item from the Commands menu and press RETURN; the Sign-On form (Figure 3-2) then appears.

GRiD SERVER PHONELNK
Connection type GRiD SERVER
Company
Group
User
Password
Sign-on: Fill in form and press RETURN

Figure 3-2. Sign-On Form (User Information)

The Connection Type item at the top of the Sign-On form allows you to select the type of connection you wish to make to the GRiD Server. The default connection type is GRIDLNK. The choices are described below.

GRIDLNK Your computer is connected to the GRiD Server via a local cable.

PHONELNK Your computer is connected to the GRiD Server via a telephone line.

Fill in appropriate names for the Company, Group, User, and Password items in the form. These names are assigned by the System Administrator when you are authorized to use the GRiD Server.

Press RETURN after filling in the form. If you are using the GRiD Server-PCLink board, you also are required to fill in another form to set the interrupt request line. See the section "Signing on Via a Local Cable" in Chapter 1 for a description of this form.

If you have selected PHONELNK, a second Sign-On form appears; see the section "Signing On Via the Telephone" in Chapter 1 for descriptions of the items on this form. If you have selected GRIDLNK, you are signed on immediately since no phone information is needed.

You can save your sign-on information for future use by using the Write Sign-On Information to a File command in the Server Commands menu (see the section "Write Sign-On Information to a File" in this chapter).

SIGN-OFF

The Sign-Off command disconnects your system from the GRiD Server and returns you to the Server Commands menu. After you have selected the Sign-Off command, you are prompted to press RETURN to confirm that you want to sign off. Press RETURN to sign off; press ESC to cancel the sign-off request.

If you are signed on to more than one GRiD Server, the menu shown in Figure 3-3 appears. Select the GRiD Server from which you want to sign off, using the UpArrow and DownArrow keys, then press RETURN. Press RETURN again to confirm that you want to sign-off.

NOTE: If you sign on to two GRiD Servers, it is recommended that you sign off in reverse order. For example, if you sign on to the first GRiD Server using GRiDLink and the second GRiD Server using PhoneLink, you should sign off the second GRiD Server before you sign off the first. If you don't sign off in reverse order, the memory used for the first connection (as much as 60 Kilobytes) isn't released until after you sign off the second connection.

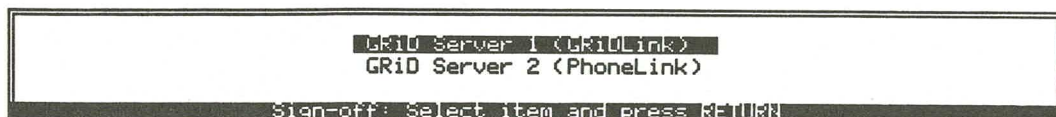


Figure 3-3. Sign-Off Menu

EDIT SIGN-ON INFORMATION

The Edit Sign-On Information command displays the Sign-On form so that you can edit the information it contains. Like the Sign-On command, the Edit Sign-On Information command lets you enter or change information in the form; unlike the Sign-On command, it does not attempt to connect your computer to the GRiD Server. When you press RETURN, the changes you make take effect the next time you sign on to the GRiD Server. See the section "Write Sign-On Information to a File" for information on how to save your changes.

DISPLAY SERVER DEVICES

The Display Server Devices command displays the devices currently available on the GRiD Server to which you are signed on. Figure 3-4 shows a typical display.

Devices on GRiD Server		
<u>Drive Letter</u>	<u>Device Name</u>	<u>Current Directory</u>
F	User Subjects	\
G	Software Subjects	\
H	Shared Subjects	\BUDGET
I	Group Subjects	\
J	Company Subjects	\
K	Letter quality printer	\
L	Dot matrix printer	\

Display server devices completed

Figure 3-4. Server Devices Display

The Drive Letter column gives the single letter used to designate each device listed in the Device Name column. The rules for using these characters are the same as for any other device letter used as an MS-DOS command parameter. For example, using the information in Figure 3-4, the following command copies all files from floppy disk drive A to your User Subjects device (drive F) on the GRiD Server:

```
H>copy a:*. * f:
```

If you have changed the working directory on a GRiD Server storage device, the Current Directory column shows the name of the current working directory. Figure 3-4 indicates the current working directory for Shared Subjects is BUDGET.

RETRIEVE SIGN-ON INFORMATION FROM A FILE

The Retrieve Sign-On Information From a File command retrieves sign-on information that you have previously saved in a sign-on file. If you invoked the Server command and specified the name of a sign-on file, you can use this command to retrieve sign-on information from a different file.

Figure 3-5 shows the form displayed when you select the Retrieve Sign-On Information From a File command. To retrieve sign-on information, enter the name of the file containing the information and press RETURN.

If you specified a sign-on file when you invoked the Server command, the name of that sign-on file is shown in the Retrieve Sign-On Information form. Backspace over the name shown if you want to enter a different name.

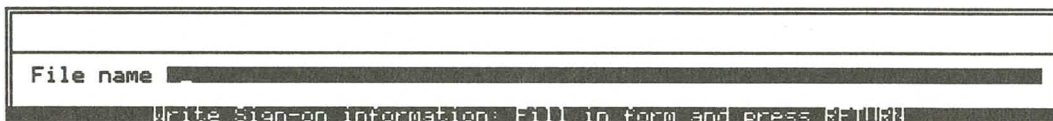
File name <input type="text"/>
Retrieve Sign-on information: Fill in form and press RETURN

Figure 3-5. Retrieve Sign-On Information Form

WRITE SIGN-ON INFORMATION TO A FILE

The Write Sign-On Information to a File command saves your sign-on information in a sign-on file. This command is useful when you are saving sign-on information for the first time or when you want to save edited sign-on information.

Figure 3-6 shows the form displayed when you select the Write Sign-On Information to a File command. If you invoked the Server command with a sign-on file, used the Retrieve Sign-On Information From a File command, or previously used this command, the name of the previously specified sign-on file is shown in the Write Sign-On Information form. Simply press RETURN to select the default sign-on file, otherwise, backspace over it and enter a new file name.



```
File name _____
Write Sign-on information: Fill in form and press RETURN
```

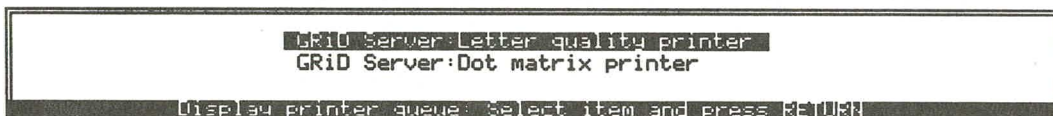
Figure 3-6. Write Sign-On Information to a File Form

DISPLAY PRINTER QUEUE

The Display Printer Queue command displays a list of files waiting to be printed on a GRiD Server printer. You can use this command to determine if your document has finished printing.

NOTE: This command is the only method you can use to display the printer queue. The DIR command does not display any files that may be in the printer queue.

When you select Display Printer Queue, a menu listing the GRiD Server printers is displayed. Figure 3-7 shows a typical menu produced by this command.



```
GRiD Server:Letter quality printer
GRiD Server:Dot matrix printer
Display printer queue: Select item and press RETURN
```

Figure 3-7. Selecting a Printer

NOTE: The menu produced by the Display Printer Queue command shows the printers attached to the GRiD Server to which you are currently connected; your devices are not necessarily the same as those shown in Figure 3-7.

To display a list of the files waiting to be printed on one of these printers (see Figure 3-8), use the DownArrow and UpArrow keys to select the printer from the list and press RETURN.

```
13:56:44.3 BUDGET~PRN~
14:01:31.6 Hamilton~Text~
14:06:19.1 LETTER~PRN~
14:09:58.7 Smith~Printout~
14:12:27.6 Hamilton~Text~
14:14:34.4 CHAP2~PRN~
```

Figure 3-8. Printer Queue Display

ASSIGN PRINTER

The Assign Printer command selects the GRiD Server printer to be used as the default printer (PRN device). Any program that is supported on the GRiD Server and uses the PRN device can print on a GRiD Server printer. After you select the Assign Printer command, a menu appears that lists the printers attached to the GRiD Server and the local printer (i.e., the printer connected directly to your computer). Figure 3-9 shows a typical menu produced by this command.

```

Local Printer
GRiD Server:Letter quality printer
GRiD Server:Dot matrix printer

Assign printer: Select item and press RETURN
Printer is currently assigned to local printer
```

Figure 3-9. Assign Printer Menu

NOTE: The menu produced by the Assign Printer command shows the printers attached to the GRiD Server to which you are currently connected; your devices are not necessarily the same as those shown in Figure 3-9.

To change the printer specified as the PRN device, move the highlight to the desired item on the menu and press RETURN. Thereafter, documents are printed on the printer you selected.

Each time you sign on you must assign your printer if you want to use a GRiD Server printer, since this information is not saved after you sign off.

NOTE: You must already be signed on to a GRiD Server in order to execute this command. You must, of course, remain signed on if you are using a printer attached to the GRiD Server.

DISPLAY MESSAGE OF THE DAY

The Message of the Day is information entered by the System Administrator; it can concern GRiD Server operations, status, or any other topic of interest to GRiD Server users. The Message of the Day, if provided, is displayed automatically after sign-on. You can redisplay it at any time by selecting the Display Message of the Day command and pressing RETURN.

EXIT

The Exit command returns you to the MS-DOS command line and the system prompt. If you are signed on to the GRiD Server, you remain signed on even after selecting the Exit item since you have only exited from the Server program. All of the GRiD Server devices are available for you to use with other commands and programs running on your computer. The devices remain available until you reissue the Server command and select the Sign-Off item from the Server Commands menu, or until you restart or power off your system.

CHAPTER 4: ERROR MESSAGES

This chapter lists error messages you can receive while using the GRiD Server. The first section lists GRiD Server messages. You can receive these messages only while you are using the Server program to access GRiD Server. The second section describes MS-DOS error messages that you can receive when you are using MS-DOS applications that access GRiD Server devices.

GRiD SERVER ERROR MESSAGES

All of the messages listed below are displayed with a number preceding the text of the message and are listed in numerical order. Use the error number to locate the message you have received.

Each error message includes a brief explanation and advice on how to recover from the error. If you do not find the error listed here or the explanation does not fit what happened, refer to the section on MS-DOS error messages in this chapter or to your MS-DOS documentation or see your System Administrator.

35: Request not supported

What happened: You selected a configuration that is not supported, for example, GRiD Internal for Modem type on a GRiDCase computer that doesn't have an internal modem.

What to do: Inspect the sign-on form carefully and correct it.

40: File or device can't be shared

What happened: You tried to access the same serial port to sign-on using both GRiDLink and PhoneLink.

What to do: You can only use the serial port for one purpose at a time.

225: Bad parameter

What happened: You have an incompatible or malfunctioning modem.

What to do: (1) Do the last operation again; (2) restart your system and modem; or (3) use a new modem.

231: Device not responding

What happened: You tried to use a nonexistent COM port on an IBM personal computer, or you specified GRiD Internal for the Modem type on a GRiDCase or GRiDLite computer when there is no internal modem installed.

What to do: Check that the serial ports are installed and configured correctly and reissue the command.

400: Modem did not answer

What happened: The GRiD Server did not respond to your modem's connection attempt within the time that it waits for the connection to complete (set in the Wait for Answer item of the PhoneLink sign-on form).

What to do: Any of the following could cause this message:

- o The GRiD Server telephone line was busy or failed to answer. Check this by setting the Speaker Volume item of the Sign-On form to On and redialing.
- o Your modem started dialing before the dial tone sounded. Most modems automatically wait for a dial tone before dialing. If your modem doesn't wait for a dial tone, add several periods (each indicating that the modem should wait one second before dialing) before the first number in the Phone Number item of the Sign-On form.
- o If you were using a long distance service, the modem started dialing the access code before the long distance service was ready. Add additional periods between the phone number and the access code.

You can also increase the time in the Wait for Answer item on the PhoneLink sign-on form and redial.

401: Modem timed out

What happened: The modem did not respond to your computer's commands for dialing, or the modem did not detect a dial tone. There is a problem with the connection between your computer and the modem or the modem and the phone system.

What to do: Check that the modem is correctly connected to your computer and that the telephone cord is correctly connected between the modem and the modular wall phone jack. Make sure that the baud rate you select in the Sign-On form is supported by the modem.

402: Modem lost carrier

What happened: Something caused the carrier (a constant tone necessary for the transmission of data) to cease to exist.

What to do: Any of the following items could cause the modem to lose the carrier:

- o Someone has picked up an extension phone and spoken into it. Check that the extension is free and sign on again.
- o The phone line has been disconnected either from the computer or from the telephone outlet. Check both connections and sign on again.
- o A call-waiting signal to your phone interfered with the modem carrier. Switch to a phone without call waiting or have incoming calls automatically forwarded, then sign on again. Some office phone systems have a number you can dial that suppresses call-waiting for the duration of the call; check with your PBX administrator for this information.
- o The phone line was dropped due to no activity. You can extend the time of inactivity that the GRiD Server waits before dropping the data link by changing the Disconnect After item in the PhoneLink sign-on form.
- o The GRiD Server disconnected or shut off its modem. Sign on again. If the problem persists, contact your System Administrator.

406: Invalid phone number - reenter number

What happened: The phone number you entered contained an invalid character. The following characters are normally valid in phone numbers: the numbers 0 through 9, space, left and right parentheses, asterisk (*), pound sign (#), hyphen (-), and carats (^), periods, or commas (each indicating that the modem wait for one second). Check your modem documentation for additional valid characters.

What to do: Check the phone number and reenter.

407: Modem device not present

What happened: You are using a GRiD Compass computer and you do not have the DEVICE-MODEM.SYS statement in your system configuration file (CONFIG.SYS).

What to do: Check your GRiD Compass CONFIG.SYS file for the presence of the DEVICE-MODEM.SYS statement. In addition, you must have the MODEM.SYS file in the root directory of your start-up device. See the section "PhoneLink with the GRiD Compass" in Chapter 1.

409: No dial tone detected - check phone line

What happened: The modem could not detect a dial tone on the phone line.

What to do: Check the phone line.

410: Phone line busy - redial later

What happened: The phone line was busy.

What to do: Redial later.

701: Server not responding

What happened: When you attempted to sign on to the GRiD Server, the GRiD Server did not respond to your computer.

What to do: Try any of the following procedures that might apply:

- o Check the GRiDLink cable to make sure it is plugged into your computer and the GRiDLink outlet, then sign on again.
- o The GRiD Server may be in the process of restarting. Wait a few minutes and then sign on again.
- o If you are using a GRiD Server-PCLink board, ensure that the interrupt request switch block on the board is set to the same value as the Alternate interrupt form displayed during sign-on.
- o If you are using a GRiD Server-PCLink board, ensure that other communications boards you have installed are not using the same interrupt request line as the GRiD Server-PCLink board. You may need to change the interrupt request line. See Appendix B for details.

If the problem persists, contact your System Administrator.

702: Phone line was dropped due to no activity

What happened: The GRiD Server observed no activity from your computer for an extended period of time and simply dropped the data link since it was not being used.

What to do: If you wish, you can extend the time of inactivity that the GRiD Server waits before dropping the data link by changing the Disconnect After item in the PhoneLink sign-on form. Sign on again to reestablish the data link.

704: Data link send failure - too many retries

What happened: Your computer tried many times to send data to the GRiD Server and was unsuccessful.

What to do: Check your cables. Sign off, then sign on again. This error often indicates a noisy phone line. Redial to see if you can get a clearer line. If you cannot access a clear line at your current location, you may have to dial from another location.

This error could also indicate that your computer and the GRiD Server are communicating at different data transmission rates. Make sure the Baud Rate item in the Sign-On form is set correctly. Check with your System Administrator for the correct baud rate to use.

If this error persists, you may have a malfunctioning modem, a problem with your serial port, or the GRiD Server may be unavailable or inoperable; contact your System Administrator.

706: Data link disconnected by server

What happened: The GRiD Server disconnected the data link because it was receiving too many errors.

What to do: This error almost always indicates a noisy phone line. Redial to see if you can get a clearer line. If you cannot access a clear line at your current location, you may have to dial from another location.

709: Physical connection was lost

What happened: The cable or telephone line attached to your computer has been disconnected.

What to do: Any of the following items could cause this message:

- o The GRiDLink cable disconnected from your computer or the 2230 GRiDCase/GRiDLink Expansion Unit. Make sure the cable is plugged in and sign on again.
- o Someone has picked up an extension phone and spoken into it. Check that the extension is free and sign on again.

- o The phone line has been disconnected either from the computer or from the telephone outlet. Check both connections and sign on again.
- o A call-waiting signal to your phone interfered with the modem carrier. Switch to a phone without call waiting or have incoming calls automatically forwarded, then sign on again. Some office phone systems have a number you can dial that suppresses call-waiting for the duration of the call; check with your PBX administrator for this information.
- o The phone line was dropped due to no activity. You can extend the time of inactivity that the GRiD Server waits before dropping the data link by changing the Disconnect After item in the PhoneLink sign-on form.
- o The GRiD Server disconnected or shut off its modem. Sign on again. If the problem persists, contact your System Administrator.

733: Too many stations on link

What happened: The GRiD Server detected more than eight stations on your GRiDLink.

What to do: Sign on again. If this error persists, you have more than eight stations connected on your GRiDLink; some must be eliminated.

801: User is not signed on

What happened: You tried to perform an operation requiring the GRiD Server, but were not signed on.

What to do: Sign on.

802: User is already signed on

What happened: You are already signed on to GRiD Server.

What to do: You must sign off before you can sign on again.

810: Sign-on request cancelled

What happened: You pressed ESC during the GRiD Server sign-on process.

What to do: If you didn't mean to cancel the sign-on process, sign on again.

1003: Sign-on password invalid - reenter

What happened: The password you supplied in the Server command's Sign-On form is not the one required for access to the sign-on ID (company, group, and user) you specified.

What to do: Reenter the password and sign on again. If you cannot remember your password, contact your System Administrator to receive a new one.

1004: Internal user authorization error

What happened: An internal error was detected by GRiD Server.

What to do: Contact your System Administrator.

1005: User is unknown to the server

What happened: The sign-on ID (company, group, and user) you supplied in the Server Sign-On form specified a user who is not known to the GRiD Server.

What to do: Check that you correctly filled in the Sign-On form with your sign-on ID and sign on again. Note that any extra spaces in the Sign-On form will cause this error. If you entered your sign-on ID correctly, contact your System Administrator.

1008: User access is locked

What happened: When you tried to sign on to the GRiD Server, your connection was not allowed. The System Administrator has denied you access to the GRiD Server.

What to do: Contact your System Administrator.

1032: User authorization file must be updated

What happened: You are using an out-of-date version of GRiD Server system software.

What to do: Contact your System Administrator.

MS-DOS ERROR MESSAGES

Many of the errors that can occur when you are running an MS-DOS application are disk errors of some kind. A disk error can be generated in one of the following ways when an MS-DOS application is trying to access a GRiD Server device:

- o You may not have the authority to write to or read from a particular GRiD Server device. For example, the System Administrator may be the only person authorized to write files to the Software Subjects device.
- o Data transmission may have been interrupted. For example, if you are using GRiDLink, the GRiDLink cable may have been disconnected or there may be a hardware problem somewhere in the local cable connections. If you are using PhoneLink, the GRiD Server telephone line may have been disconnected.
- o You may have used all of your available disk space.
- o The file you are trying to access may not be located on the GRiD Server device that was searched.

Should one of the above situations occur, the application you are running at the time will produce an error message such as "Disk write protected" or "Disk error". Error messages vary among applications. Check the file name(s) you are using with the application. If the file name(s) are correct, perform the operation again.

If the error persists, exit from the application and use the MS-DOS DIR and COPY commands as described below to isolate the problem.

- o Use the COPY command to determine whether you have the authority to write to the GRiD Server device your application is attempting to access.
- o Use the DIR command to determine whether you can access a GRiD Server device. If you cannot, sign on again using the Server command.

- o Use the DIR command to determine whether the file your application is attempting to access is on the GRiD Server device that was accessed.
- o Use the DIR command to determine your available disk space. If you need additional storage space, contact your System Administrator.

NOTE: Misbehavior of an MS-DOS application may or may not be related to accessing a GRiD Server device. If a function within an application does not appear to be performing properly, sign off GRiD Server and run the application using only local devices. If the error persists, it is not related to accessing GRiD Server devices. Check the application manual to determine possible reasons for the misbehavior.

APPENDIX A: CONSIDERATIONS WHEN USING GRiD SERVER UNDER MS-DOS AND PC-DOS

Although most MS-DOS and PC-DOS applications will run normally when accessing GRiD Server devices, keep the following considerations in mind when using GRiD Server under MS-DOS and PC-DOS.

SUPPORT CONSIDERATIONS

- o If you are using the GRiD Server from a GRiD computer running MS-DOS, you cannot execute programs directly from a GRiD Server device. To use an application stored on a GRiD Server device, you must first copy the application to a local device on your computer. You may use data files stored on GRiD Server devices from most applications running on your computer.
- o You cannot use the MS-DOS EDLIN command directly on files stored on GRiD Server devices. To edit a file with EDLIN, you must first copy the file to a local device on your computer.
- o You cannot use remote GRiD Server devices with the MS-DOS input/output redirection facility. If output redirection is necessary, first redirect to a local file and then copy it from the local device to a GRiD Server device. If input redirection is necessary, first copy the file to a local device and then use it for redirection.
- o You cannot use the MS-DOS File Comparison (FC) utility to compare a file stored on GRiD Server to a file stored on a local device. To compare a GRiD Server file to another file, you must first copy the GRiD Server file to a local device, then compare the two files.
- o You cannot use the MS-DOS DIR command on the printer devices.
- o The following commands do not work on GRiD Server devices: CHKDSK, DISKCOMP, DISKCOPY, FC, FDISK, FORMAT, LABEL, PRINT, RECOVER, SUBST, and SYS.
- o MS-DOS 3.2 networking commands and capabilities are not supported.

PRINTING CONSIDERATIONS

- o To ensure correct operation when you are printing on a GRiD Server printer under MS-DOS or PC-DOS, you must pause at least thirty seconds between print requests to ensure that the requests create separate print files.
- o You cannot print on a GRiD Server printer by using the MS-DOS PRINT command, FN-ECHO, or CTRL-P. Using the PRINT command, FN-ECHO, or CTRL-P causes unpredictable results.
- o You can print on a GRiD Server printer by simply copying a file to the device letter that represents the printer. For example:

```
A>copy sample.txt M:
```

However, when you use this method of printing, you must make sure that you are copying a printable ASCII text file or the printer will print indecipherable data. For example, Lotus 1-2-3 worksheets are not in a format that can be copied directly to a GRiD Server printer; they must be printed using the Lotus 1-2-3 print command.

- o You can print on a GRiD Server printer by copying a file to the PRN device if you have assigned a GRiD Server printer as the PRN device. Use the Assign Printer command to assign a GRiD Server printer as the PRN device. You can copy a file to the PRN device as follows:

```
A>copy sample.txt prn
```

- o To print on a GRiD Server printer from the Lotus 1-2-3 graph utility running on an IBM personal computer, you must use special settings for the CONFIGURE parameter. The INTERFACE option must be set to PARALLEL and the DEVICE option should be set to reflect the kind of printer connected to the GRiD Server (e.g., Epson FX80).
- o The GRiD Server printer you select must match what the application expects; for example, of the currently supported GRiD Server printers, Lotus 1-2-3 needs an Epson FX-series printer to print graphs. Refer to your MS-DOS application manual to find out which GRiD Server printer device you should select.
- o Don't use the DIR command to check the printer queue; it won't show any files that may be in the queue.

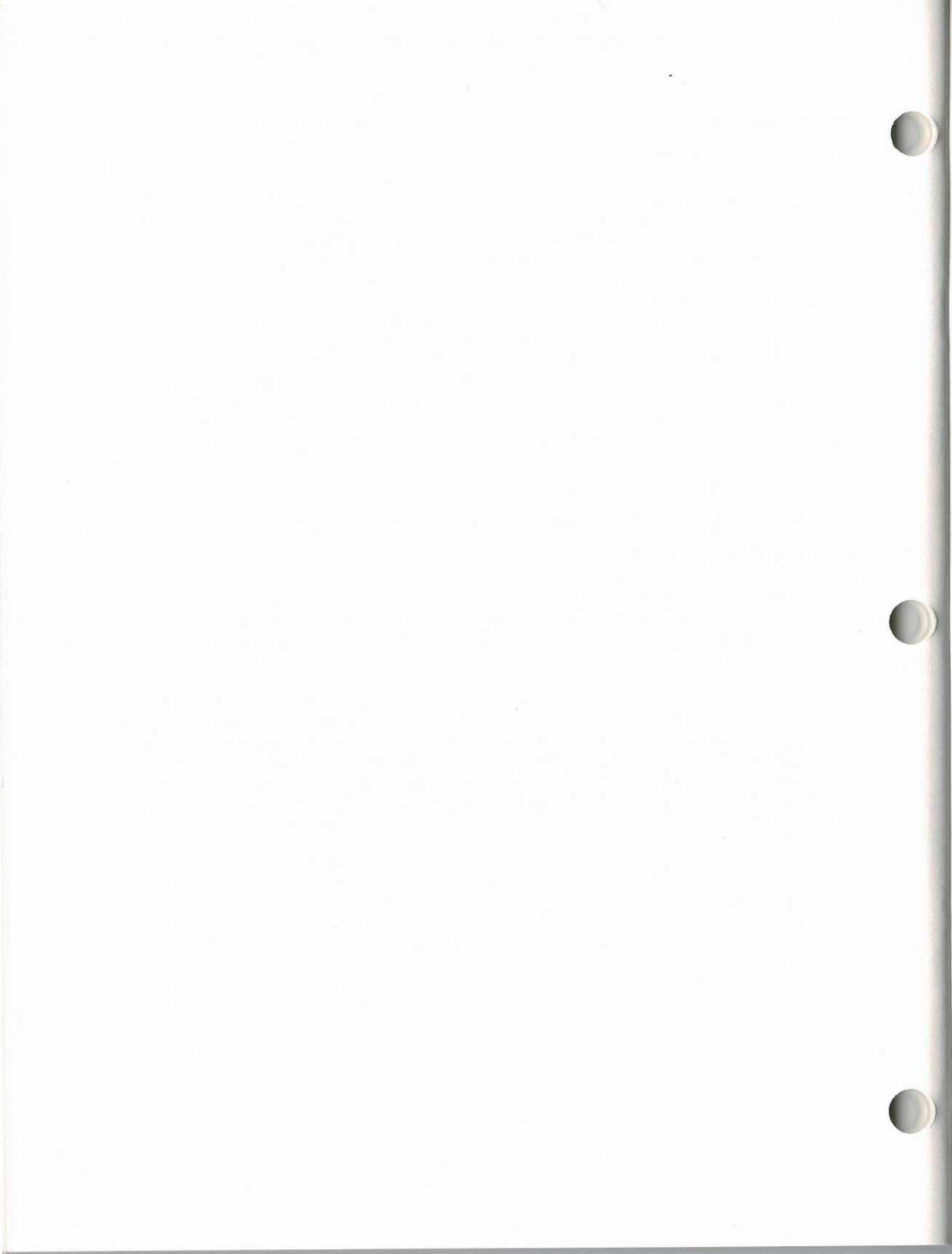
PHONELINK CONSIDERATIONS

- o Because of the length of time necessary to transmit large blocks of data over a telephone line, it is recommended that you copy a data file you wish to use to a local device rather than access the file over PhoneLink. If an application has read only part of a file into RAM when the telephone line is accidentally dropped, the results are unpredictable.
 - o If you are using a GRiDCase or GRiDLite computer with an internal modem and the phone line becomes detached from the computer, the computer may seem to have "crashed." To recover, plug the phone line back into the computer and sign off; then you can sign on again. The phone line provides power to the modem, which becomes temporarily inoperable if the phone line is disconnected.
-

APPLICATION CONSIDERATIONS

If your application requires you to specify the communications port for a printer, plotter, or other device, be sure to specify a different port than the one you are using for the GRiDLink or PhoneLink connection.

Misbehavior of an MS-DOS application may or may not be related to accessing a GRiD Server device. If a function within an application does not appear to be performing properly, sign off GRiD Server and try running the application using only local devices. If the error persists, it is not related to accessing GRiD Server devices. Check the application manual to determine possible reasons for the misbehavior.



APPENDIX B: CONNECTING TO LOCAL CABLES AND TELEPHONE LINES

This appendix explains how to connect your computer to GRiD Server over a local cable or a telephone line.

NOTE: For information regarding connection to a TEMPEST GRiD Server, refer to the *TEMPEST GRiD Server Hardware Installation Manual*.

CONNECTING TO A LOCAL CABLE

The connection to GRiD Server via a local cable is called GRiDLink. Figure B-1 shows computers connected to GRiD Server using GRiDLink.

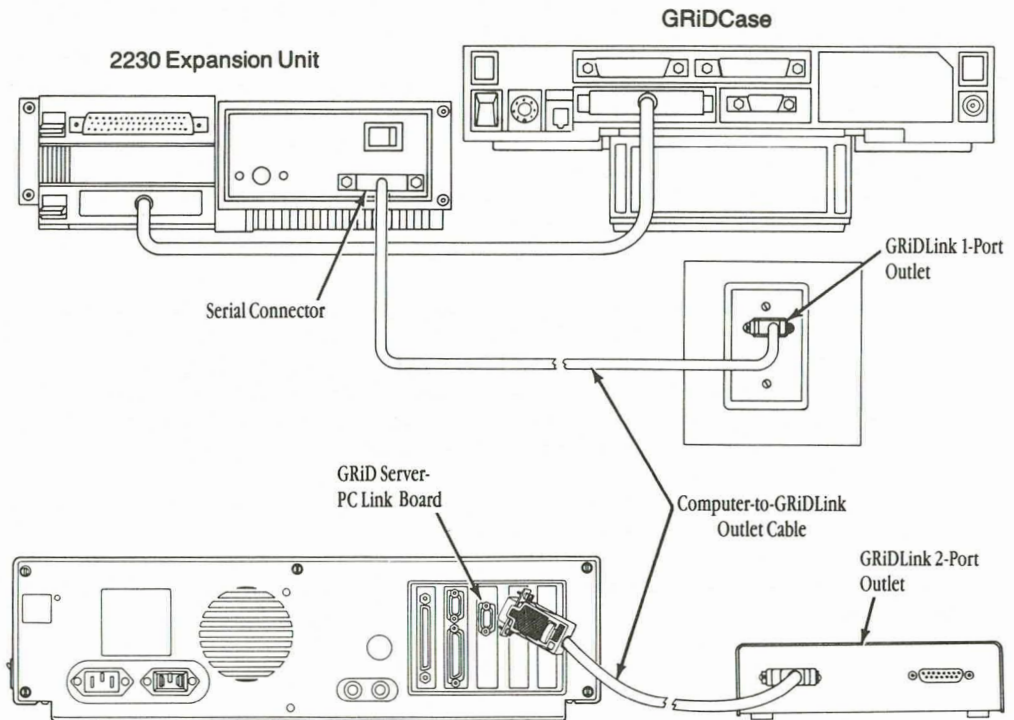


Figure B-1. Computer to Local Cable Connection

Equipment You Need

To use GRiDLink, you need:

- o A GRiDLink one-port outlet or GRiDLink two-port outlet
- o A computer-to-GRiDLink outlet cable
- o A 2230 GRiDCase/GRiDLink Expansion Unit if you are using a GRiDCase computer
- o A GRiD Server-PCLink board if you are using an IBM personal computer or if you are using a GRiDCase computer with a GRiDCase Expansion Chassis. The following section explains how to change the GRiD Server-PCLink board switch block that controls the interrupt request line.

GRiD Server-PCLink Board Switch Setting

This section provides information you may need if you must change the switch settings on the interrupt request switch block on the GRiD Server-PCLink board. This switch block must be set to the same value as the Alternate Interrupt form that you see when you sign on using GRiDLink with a GRiD Server-PCLink board.

The interrupt request switch block is labeled Switch Block 2 on the GRiD Server-PCLink board and is the first switch block at the left on the board. This switch block sets the interrupt request line used by the GRiD Server-PCLink board for its communication with your computer's microprocessor. Other devices installed in your computer, such as communication boards, may also use interrupt request lines. No two devices can use the same interrupt request line.

Under MS-DOS, you should normally set this switch block to activate interrupt request line 3. If there is a conflict with other devices installed in your computer, you can change the interrupt request line on the GRiD Server-PCLink board to one of the available lines. (Check the technical reference documentation for your other device to determine the interrupt request line it uses.)

NOTE: Under GRiD-OS or InteGRiD, switch block 2 can only be set to activate interrupt request line 3.

The following restrictions apply to the interrupt request lines you can activate:

- o Do not activate interrupt request line 6.
- o On an IBM XT^(R) computer, do not use interrupt request line 5.
- o On an IBM AT^(R) computer, do not use interrupt request line 2.

- o On an IBM AT computer, do not use interrupt request line 5 unless no other lines are available.

To activate a particular interrupt request line, set the switch corresponding to that interrupt request line to the ON position; all other switches should be set OFF. To set a switch to the ON position, push down on the top of the switch with a paper clip or other pointed object. (Do not use a pencil because graphite from the pencil tip may cause the switch to malfunction.) The interrupt request lines that correspond to each switch are as follows:

<u>Switch</u>	<u>Interrupt request line</u>
1	2
2	3
3	4
4	5
5	6
6	7

For example, to activate interrupt request line 3 (normal setting), set the switches as follows:

<u>Switch</u>	<u>Setting</u>
1	OFF
2	ON
3	OFF
4	OFF
5	OFF
6	OFF

Connecting the GRiDLink Cable to Your Computer

Connect the GRiDLink cable to your computer as follows:

1. Plug the larger connector on the computer-to-GRiDLink outlet cable into the GRiDLink one-port wall outlet or into the GRiDLink two-port floor outlet (see Figure B-1). Slide the locking mechanism to lock the connector in place.
2. Plug the other end of the computer-to-GRiDLink outlet cable (the end with set screws) into the 19-pin serial connector on the rear panel of your computer or in the case of the 2230 GRiDCase/GRiDLink Expansion Unit, into the connector on the rear panel of the unit (see Figure B-1).
3. If you are using the 2230 GRiDCase/GRiDLink Expansion Unit, connect the unit to the GRiDCase external bus connector.

CONNECTING TO A TELEPHONE LINE

The connection to GRiD Server via a telephone line is called PhoneLink. A standard phone cord with RJ-11 connectors at each end is used to connect your computer to the phone system (see Figure B-2). The following two sections explain how to connect your computer to a telephone line using internal and external modems.

Internal Modem

To connect your computer with an internal modem to a telephone line, unplug the phone cord from your telephone and plug it into either the telephone line connector on the back of a GRiD computer (labeled LINE or TEL), or the TELCO connector on the back of a Hayes modem (if you are using an IBM personal computer with an internal modem card).

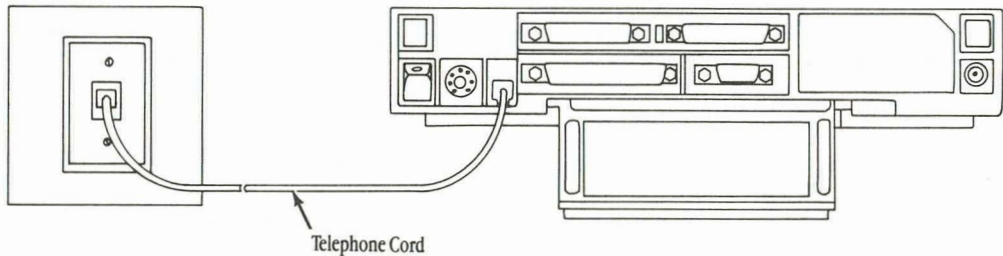


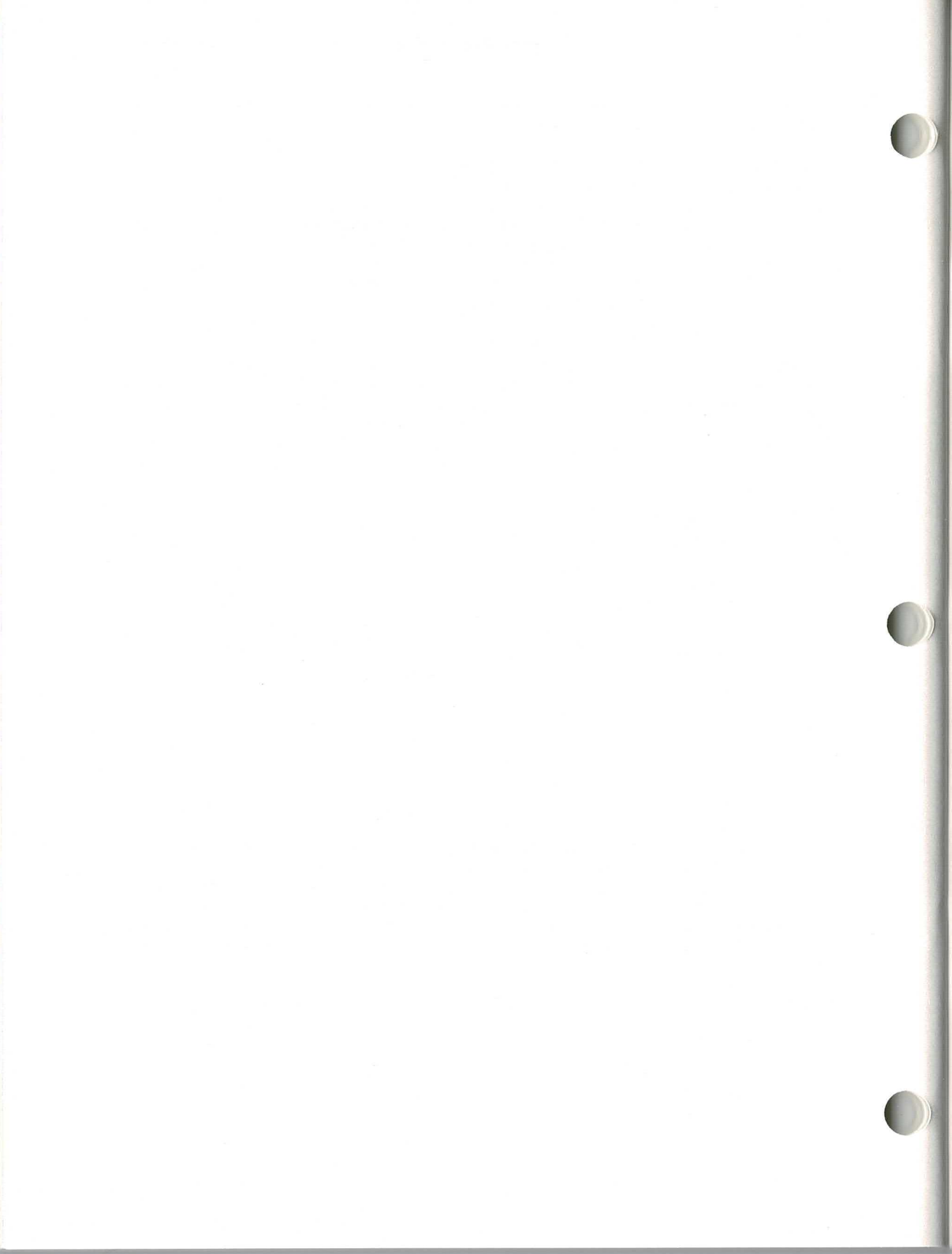
Figure B-2. GRiDCase to Telephone Connection

External Modem

To connect your computer to a telephone line through an external modem, you need an external modem and a serial cable to connect the modem to your computer. Connect the phone line to the phone jack on the modem, then connect the modem to the serial port on your computer using the serial cable. The type of serial cable you need depends on which computer you have. The following list indicates the necessary serial cable.

Connecting To Local Cables and Telephone Lines

Computer	Serial cable
GRiDCase	25-pin female to male (GRiD order number 6200)
GRiD286	9-pin female to 25-pin male adapter (Any AT-style adapter)
Compass	19-pin male to 25-pin male adapter cable (GRiD order number 6100)
IBM PC	25-pin female to male
IBM AT	9-pin female to 25-pin male adapter



APPENDIX C: GRiD SERVER INFORMATION

This appendix provides spaces for all the information you need regarding your particular GRiD Server installation. Ask your System Administrator for the information listed below and enter it in the appropriate spaces so that you can refer to this appendix when you need the information.

SYSTEM ADMINISTRATOR

System Administrator's Name: _____

Telephone Number or Extension: _____

SIGN-ON INFORMATION

The items listed below are supplied to you by your System Administrator. Enter your sign-on ID information (except your password) and the GRiD Server phone numbers (if your GRiD Server system has PhoneLinks) in the spaces provided. Enter the locations of GRiDLink outlets in the vicinity of your workspace in the spaces provided, and check the appropriate blanks for the GRiDLink equipment provided to you if you are using a GRiDLink (local cable).

Sign-On ID

Company: _____

Group: _____

User: _____

To Connect Via Telephone

GRiD Server phone numbers: _____

MS-DOS/PC-DOS SERVER.EXE file: _____
MS-DOS/PC-DOS PHONELNK.EXE file: _____

To Connect Via Local Cable

GRiDLink outlet locations: _____

GRiDLink equipment

Computer-to-GRiDLink outlet cable: _____
2230 Expansion Unit
(If you are using a GRiDCase): _____
GRiD Server-PCLink board
(if you are using an
IBM personal computer): _____
MS-DOS/PC-DOS GRIDLNK.EXE file: _____
MS-DOS/PC-DOS SERVER.EXE file: _____

OTHER INFORMATION

The items listed below are defined by your System Administrator for your organization's GRiD Server. Enter the names given to you by your System Administrator in the blanks as necessary.

GRiD Server Name

The default GRiD Server system name is "GRiD Server". This name is used throughout this guide. Your System Administrator may assign a different name to your organization's GRiD Server.

GRiD Server name: _____

Device Names

The device names listed below are the default names. Your System Administrator may have given a device a different name on your organization's GRiD Server or may not have configured the device into the GRiD Server system.

User Subjects: _____

Group Subjects: _____

Company Subjects: _____

Shared Subjects: _____

Software Subjects: _____

NOTE: Your System Administrator can also tell you which GRiD Server devices you are authorized to read from and write to.

Printer Names and Characteristics

For each GRiD Server printer, you need the name, the paper size, any information on special forms, and the name and location of the printer driver file.

Printer name: _____

Paper size: _____

Special forms: _____

Printer driver name: _____

Printer driver location: _____

Printer name: _____

Paper size: _____

Special forms: _____

Printer driver name: _____

Printer driver location: _____

Printer name: _____

Paper size: _____

Special forms: _____

Printer driver name: _____

Printer driver location: _____

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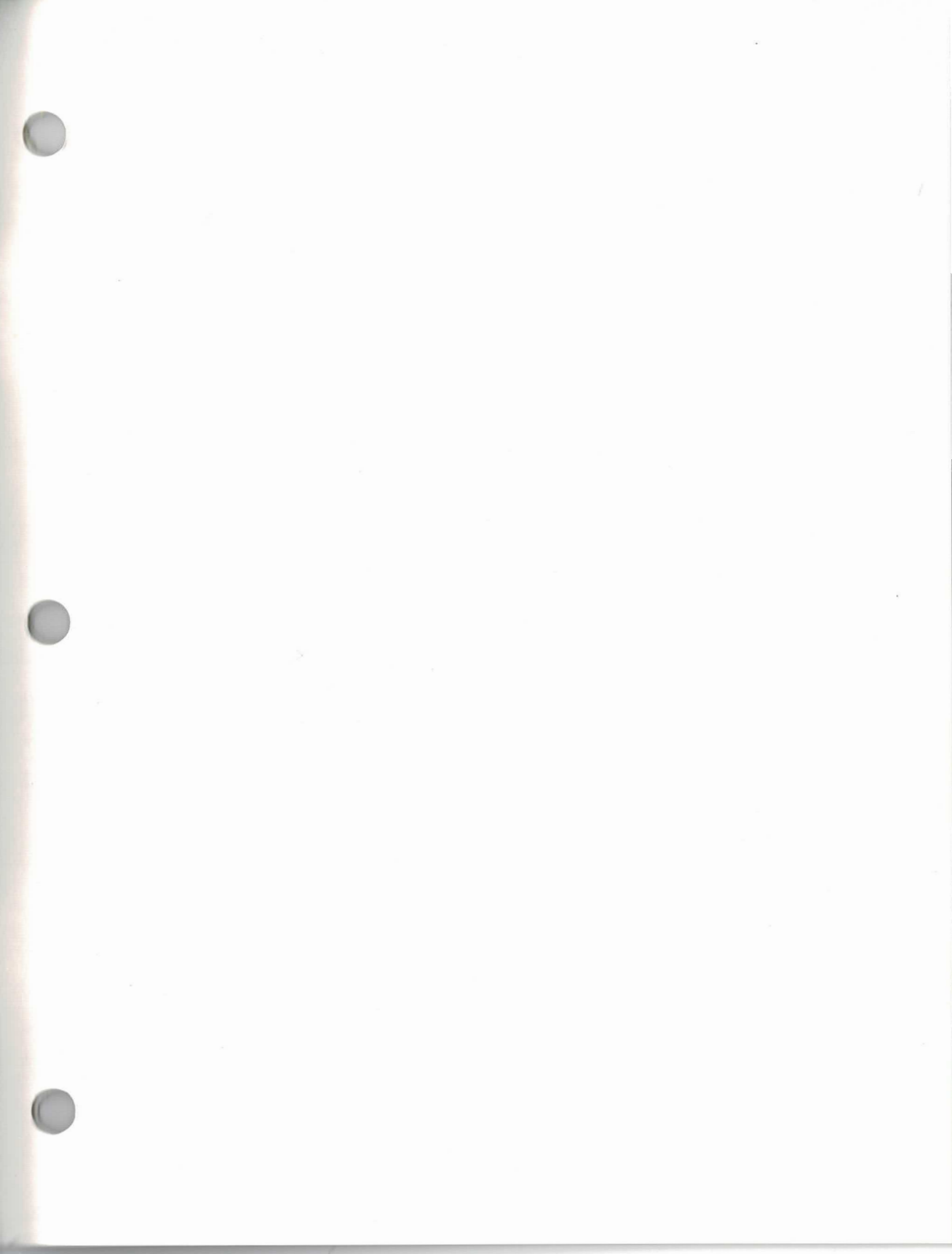
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