

PRINT/TWINAX

Twinax printing from an AS/400, S/38, or S/36 to printers physically or remotely attached to a computer

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Software Version 97A10 or later*

Editors

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Preface

Barr's PRINT/TWINAX product allows you to print from an IBM AS/400, System/36, or System/38 to printers physically or remotely attached to a computer. In this manual, the term AS/400 refers to both the AS/400 and System/3x unless otherwise stated.

Barr Technical Support

Contact Technical Support at 800-BARR-SYS Monday through Friday between 9 a.m. and 8 p.m. eastern time if you have questions or problems with Barr software or hardware. Technical Support will ask for your software version number and adapter serial number. Please have these numbers on hand when you call.

If you contact Technical Support by fax, e-mail, or the Web site support page, include the software version number and adapter serial number in your correspondence.

You can obtain the software version number from the following places:

- Second screen of the **Installation** menu
- Console portion of the **Operation** screen at software startup
- Quit screen during software operation

You can obtain the adapter serial number from the following places:

- Adapter box
- Blue sticker on the back of the adapter
- Handwritten label on the back of the adapter

Notes:

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Notes:

1. Introduction

PRINT/TWINAX is a computer-based, twinaxial-attached print solution for IBM System/36, System/38, and AS/400 computers. You can use the adapter supplied with PRINT/TWINAX to connect a computer to an AS/400 port. The software emulates IBM 5225 and 5256 twinaxial printers.

In a typical AS/400 configuration, a controller provides up to eight twinaxial ports. You can daisy chain seven printers on each port with the twinax interface. Each device attached to a port has a sequential station address from 000 to 006 (see Figure 1-1).

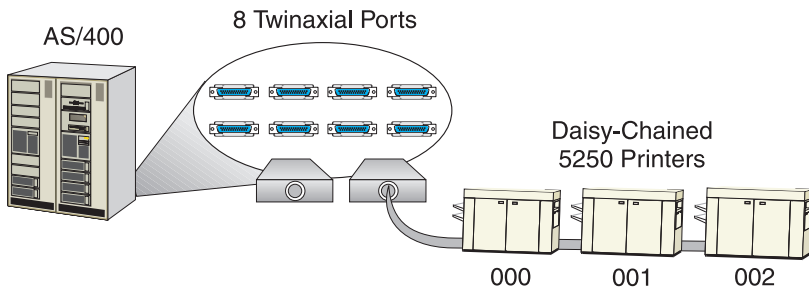


Figure 1-1. Without PRINT/TWINAX, you can attach 5250 printers to your AS/400.

With the Barr PRINT/TWINAX solution, you can replace 5250-series twinaxial printers with computer printers (see Figure 1-2).

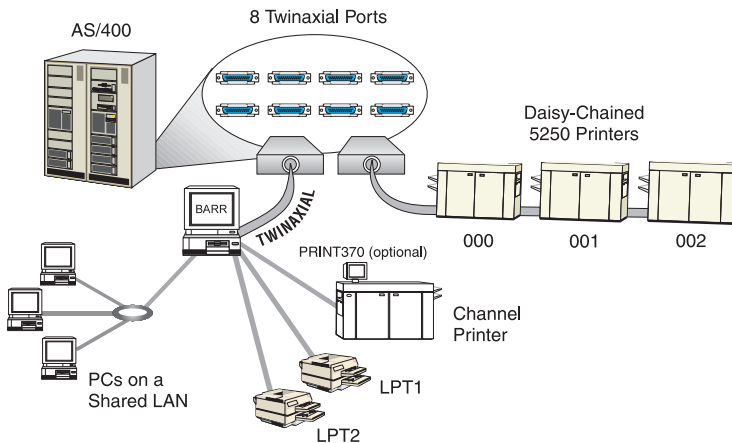


Figure 1-2. With Barr's PRINT/TWINAX, you can replace 5250-series twinaxial printers with computer printers.

The Barr TWINAX adapter supports up to six printer sessions from a single AS/400 port. Optionally, you can install a second adapter and connect it to another port on the same or a different AS/400 for a total of 12 printer sessions. (To install two adapters, you must purchase the version of the PRINT/TWINAX software that supports two adapters.) You can send output from the printer sessions directly to a computer printer or to the Barr spool.

PRINT/TWINAX supports parallel, serial, and S/370 channel-attached printers. If you install the Barr computer on a local area network (LAN), you can share these printers with the AS/400 and with users on the network.

1.1 Features

PRINT/TWINAX supports high-speed printing without slowing down the AS/400. Special features include computer print spooling, printing on multiple printers, and emulating widely used 5250 printers.

Print Speed

You can use PRINT/TWINAX with a variety of printers. Print speeds on single and multiple printers range from 30 characters per second (cps) to more than 20,000 lines per minute (lpm).

Multiple Printers

You can install up to two TWINAX adapters. Each adapter can support up to six printer sessions. To install two adapters, you need a different version of the PRINT/TWINAX software.

PRINT/TWINAX appears as multi-dropped, 5250 printer devices to the AS/400. You can assign each 5250 printer session to a parallel, serial, or PRINT370 port. Parallel ports are named LPT1, LPT2, and LPT3. Serial ports are named COM1, COM2, COM3, and COM4. The PRINT370 ports are named PR nn , where nn is the printer address.

You can assign printer streams to disk and screen. On the AS/400, you can get greater throughput by defining more than one printer session. You can maximize your printer use by assigning several 5250 print streams to the same computer printer.

Spool Support

PRINT/TWINAX allows you to spool print files received from the AS/400. By spooling files (with the BARR/RJE or BARR/SPOOL base products), you can increase printer efficiency.

5250 Printer Emulation

PRINT/TWINAX software emulates the IBM 5225 and 5256 twinaxial printers on a line printer or an HP LaserJet.

Electronic Forms

In conjunction with the OUTPUT statement and either the PRINT RIGHT or XDPE/400 software (see Appendix A), PRINT/TWINAX retains the AS/400 banner page. The Barr software uses information in the AS/400 banner page to load electronic forms into the printer and thus eliminates the need for preprinted forms. The BARR/SPOOL software uses the same information to route files to different printers.

Optional S/370 Channel-Attached Printer Support

Barr's PRINT370 product drives System/370 (S/370) channel-attached printers at their maximum speeds. You can install an S/370 channel emulator adapter in a computer with the PRINT/TWINAX adapter. You can then attach up to six S/370 channel-attached printers to the adapter with Bus & Tag cables.

Optional Dataproducts Printer Interface Support

The Dataproducts Interface (DPI), developed by the Dataproducts Corporation, drives high-speed printers and typesetting equipment. Barr offers BARR/DPI and BARR/DPI2 adapters to attach a computer to a printer with the DPI printer interfaces.

Because BARR/DPI appears to the computer as a parallel printer adapter (LPT1, LPT2, or LPT3), software used with these ports functions with BARR/DPI. BARR/DPI is compatible with Basic Input/Output System (BIOS) and Disk Operating System (DOS).

1.2 Package Contents

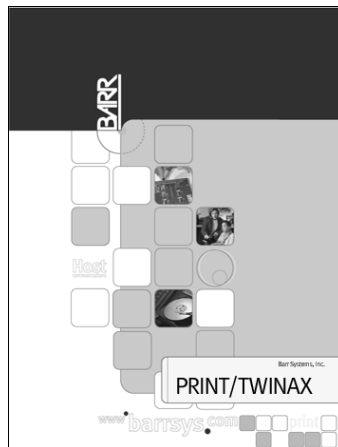
The PRINT/TWINAX package includes the following items:



TWINAX 5250 adapter



TWINAX cable



PRINT/TWINAX manual

1.3 Computer Requirements

You can install PRINT/TWINAX on a computer that meets the following requirements:

- DOS version 3.0 or later
- At least 640 kilobytes of memory
- A hard drive with fast access and transfer times and enough space to store your data
- BARR/RJE or BARR/SPOOL software

You can purchase one of the following third-party software packages to get accurate job name and form name information as well as a recognizable end-of-file from the host:

- XDPE/400 from Xerox Corporation
- PRINT RIGHT from SOFTCommand, Inc.

See Appendix A for more information about these products.

Notes:

2. Install the TWINAX Adapter

The Barr TWINAX adapter is an ISA (computer AT bus compatible) half-card adapter. The adapter comes preset to emulate an IBM 5250 adapter. After you install the adapter in the computer, you can connect the computer to an IBM AS/400, System/36, or System/38 with twinaxial cabling.

The supplied self-terminating T-cable connects to the adapter with a 15-pin D connector. The twinaxial cable from the 5250 controller, AS/400, or System/3x attaches to either twinaxial connector on the other end of the T-cable.

The maximum allowable distance between the AS/400 and the last printer is 1,524 meters (5,000 feet).

Notes:

3. Specify PRINT/TWINAX Software Settings

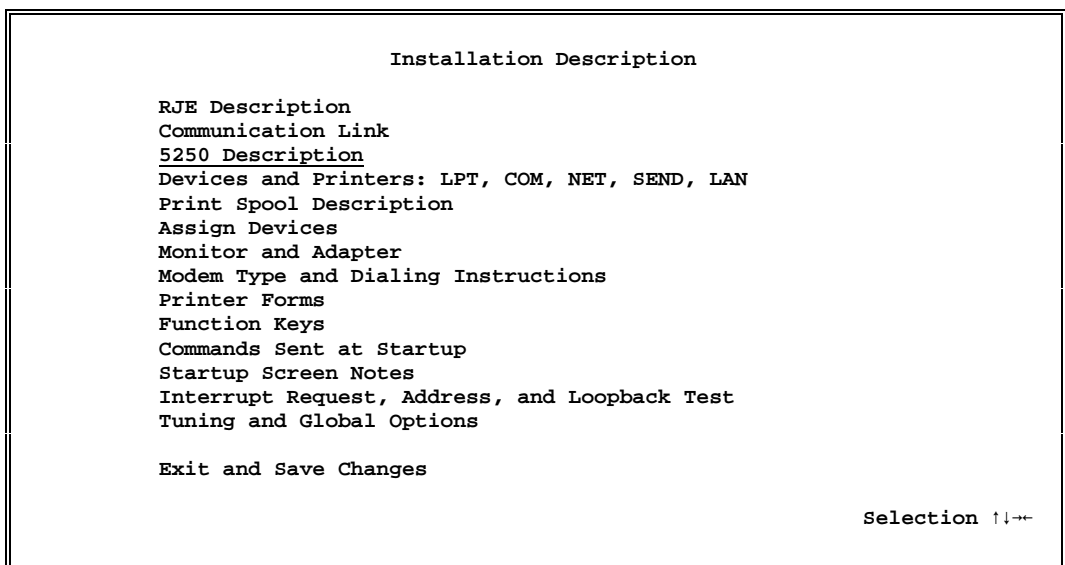
The “Software Installation” chapter in your *BARR/RJE* or *BARR/SPOOL* manual describes how to install and configure the Barr software. This chapter discusses additional PRINT/TWINAX parameters you must specify and includes sample BARR/RJE screens.

To run the Barr software, type your Barr software startup command followed by the letter *i* at the DOS prompt. For example, to start BARR/RJE, type the following:

```
barrsnar i
```

Follow these steps to display the PRINT/TWINAX screens.

1. Press ENTER to display the **Installation Description** menu.



2. Select **5250 Description**.

3.1 Define the 5250 Description for One Adapter

You can define the number of 5250 printer sessions from the **5250 Description** screen. Each 5250 session in the Barr software appears as a 5250 printer device to the 5250 controller, System/3x, or AS/400. You can also specify how the software should handle files.

The **Adapter 1 Description** screen displays next. On this screen you can name print sessions, assign switch settings, specify which printer each session emulates, and specify the actual printer to use.

On the **Adapter 1 Interrupt Request and Device Address** screen, you can set the interrupt request (IRQ), device address, and memory address. You also can perform the adapter test.

The **Interrupt Request and Address** screen displays the device address and shows you the DIP switch settings.

Specify TWINAX 5250 Description

Specify the number of sessions and file handling settings on the **5250 Description** screen.

5250 Description

Number of 5250 sessions on adapter 1? 1

Enable form header? Yes

SPUR Compatibility Carriage Control? No

Xerox XDPE package installed on AS/400? No

Receiving BARREOF end of file string? No

Disconnect if Twinax Line Idle? No
Idle Time Period: 60 seconds

Enter number

Number of 5250 sessions on adapter 1?

Select from one to six 5250 printer sessions.

Enable form header?

When you write files to disk, for example, `PRT01-(FILE)`, the Barr software writes a form header at the top of the file. Form headers contain information normally used for printing. This feature allows you to disable the Barr form header.

Yes – Default. The software writes Barr form headers to all disk files when the destination is `(FILE)`. Form header information includes form name, lines per form, lines per inch, and more.

No – The software does not include the Barr form header in disk files when the destination is `(FILE)`. This is useful for some applications, especially if you do not print the received files. The software still writes form headers for files with a destination of `SPOOL`.

SPUR Compatibility Carriage Control?

This option applies *only* if you replace a SPUR USA-II channel printer driver with the `PRINT/TWINAX` solution and the data contains dynamic job descriptor entries (DJDEs). This option affects how the software handles carriage control.

No – Default. For most SPUR conversions, you do not need to use this option.

Yes – Use this option to correct vertical alignment. Barr follows the IBM standard, which is different from the way SPUR handles vertical channel skips.

Xerox XDPE package installed on AS/400?

Specify whether you installed the XDPE package.

No – Default.

Yes – Choose **Yes** if you use the XDPE/400 software to put a job name and form name at the beginning and a `BARREOF` at the end of a print stream (see Appendix A).

Receiving BARREOF end of file string?

Specify whether to receive the end of file string.

No – Default. Do not receive the end of file string.

Yes – Choose **Yes** if you configure your host machine to provide Barr software with a `BARREOF` string (that is, you use XDPE or `PRINT RIGHT` or you customize the data yourself).

Disconnect if Twinax Line Idle?

Choose whether to disconnect if there is no activity on the line.

No – Default. Do not disconnect.

Yes – Allows the program to disconnect automatically after the idle time period expires if there is no activity on the twinax line. Works in conjunction with the RJE disconnect settings on the `Installation Description, Tuning and Global Options`, and `Restart Actions` screen.

Idle Time Period:

Default is 60 seconds.

Describe Adapter 1

When you finish defining print sessions, press ENTER to display the **Adapter 1 Description** screen.

Adapter 1 Description			
Session Name	Switch Settings	Printer Emulation	PC Printer
PRT01	01	5225	Line Printer
PRT02	02	5225	Line Printer
PRT03	03	5225	Line Printer
PRT04	04	5225	Line Printer
PRT05	05	5225	Line Printer
PRT06	06	5225	Line Printer

Enter character

Because each PRINT/TWINAX device needs a station address, you must assign the station address to each 5250 session. You must also specify the 5250 printer to emulate and the computer printer to use.

Session Name

The software automatically assigns a default name for the 5250 printer session, but you can change it. The default names for sessions on adapter 1 are **PRT01** to **PRT06**. The session name displays on the **Assign Devices** screen. Use a name that identifies the printer as the AS/400 recognizes it.

Switch Settings

Specify the 5250 printer session's switch setting. Choices are 00 to 06.

Printer Emulation

Select the IBM 5250 printer to emulate for this printer session.

5225 – Default. Emulate IBM 5225 line printer. Compatible with most printers supported by Barr software. Maximum supported record length is 198 characters. Recommended for most cases.

4214 – Emulate IBM 4214-2 printer. Compatible with most printers supported by Barr software. Maximum supported record length is 220 characters. Use the 16-cpi (characters per inch) or 17.1-cpi font at the AS/400 and on the printer.

5256 – Emulate IBM 5256 line printer. Compatible with most printers supported by Barr software. Maximum supported record length is 132 characters.

5219 – Obsolete.

Computer Printer

Specify the computer printer on which to print the output from this PRINT/TWINAX printer session. You can attach the computer printer to a serial adapter, parallel port, or the PRINT370 adapter.

Line Printer – Print the output on a line printer. Select the type of line printer from the **Devices and Printers** screen. **Line Printer** is a good choice for most channel printers; for example, Xerox, Océ, or IBM.

HP LaserJet II – Print to an HP LaserJet. Select **Generic** as your printer type from the **Devices and Printers** screen.

Xerox LPS, Xerox Color, Xerox 4235 – Obsolete.

Set Adapter 1 IRQ and Device Address

You must specify some settings for the Barr TWINAX adapter in the Barr software.

After you determine the sessions and printer emulation, press ENTER to display the **Adapter 1 Interrupt Request and Device Address** screen.

Adapter 1 Interrupt Request and Device Address

Interrupt Request? IRQ4

Device Address? 310

Memory Address? DC00

Perform Adapter test? No

Choice? + -

You can specify the following options.

Interrupt Request?

You can select the IRQ only using the software. The default IRQ is **IRQ4**. Other choices are **IRQ2**, **IRQ3**, or **IRQ5**. You might have an IRQ conflict if you select **IRQ2** and use a LAN adapter because LAN adapters typically use **IRQ2**.

Device Address?

The device address on the Barr TWINAX adapter comes preset to **310** (310-31F). Device address choices range from **000** to **3F0**. If you change the address on the adapter, you must also change this software setting.

WARNING:

Do not alter this setting unless you have a conflict with another device.

Note:

The TWINAX adapter address uses all 16 address lines. You can compute the TWINAX address as follows:

$$0x2400 + a$$

where *a* is the 10-bit address (for example, 310). The software automatically computes the full 16-bit address.

Memory Address?

The default memory address is **DC00** (DC00-DFFF). Other choices are **EC00** (EC00-EFFF) or **CC00** (CC00-CFFF). Your computer might have a memory address conflict if you use a non-IBM VGA adapter or a memory manager with load high capability. If necessary, exclude the region of high memory used by the Barr software from the other program. Use your computer memory manager to exclude the adapter's memory address. See Appendix B for more information about excluding memory.

Perform Adapter test?

Choose whether to perform the Barr TWINAX adapter diagnostics.

No – Default. Do not perform the adapter test.

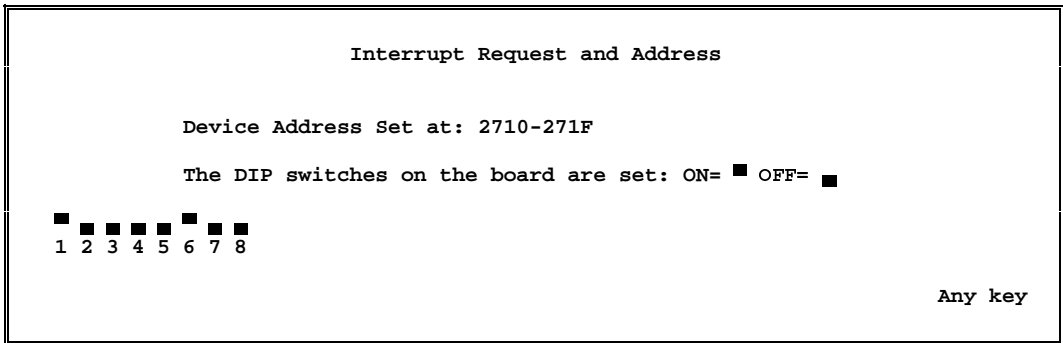
Yes – Perform the adapter test from the **Operation** screen. The adapter test verifies if the Barr TWINAX adapter and cable function properly. Set this value to **Yes** only when you perform the test. Set it to **No** for normal operations.

Note:

The Barr software does not function properly if you set **Perform Adapter test** to **Yes** during software operation.

To perform the test:

1. Detach the TWINAX cable from the AS/400, but leave it attached to the Barr TWINAX adapter. If you do not detach the cable from the AS/400, the test will give you a false error reading.
2. Set **Perform Adapter test** to **Yes**. The **Interrupt Request and Address** screen displays.



The software settings must match the switch settings on the adapter.

Note:

The Barr software does not function properly if you set **Perform Adapter test** to **Yes** during software operation.

3. Press ENTER to display the **Installation Description** screen. Select **Exit and Save Changes**, but set both save options to **No**. Then select **Begin communication at Operation** screen. (Do not save this value to the program .EXE file.) If the adapter functions correctly, the software generates no messages. If you have a faulty adapter or cable, an error message like the following displays:
5250-EA Adapter Failure.
Call for Support.
4. When you complete the test, choose **Exit to DOS**, reattach the TWINAX cable to the AS/400, and restart the software.

3.2 Define the 5250 Description for Two Adapters

You can define the number of 5250 print sessions and the second adapter like you did for the first adapter. The IRQ and device address must be different for each adapter.

Specify TWINAX 5250 Description

On the **5250 Description** screen, you can specify the number of sessions and file handling settings.

5250 Description

Number of 5250 sessions on adapter 1? 1
Number of 5250 sessions on adapter 2? 1

Enable form header? Yes

SPUR Compatibility Carriage Control? No

Xerox XDPE package installed on AS/400? No

Receiving BARREOF end of file string? No

Disconnect if Twinax Line Idle? No
Idle Time Period: 60 seconds

Enter number

Number of 5250 sessions on adapter 1?

Specify one to six 5250 sessions for the first adapter.

Number of 5250 sessions on adapter 2?

Specify one to six 5250 sessions for the second adapter.

Enable form header?

When you write files to disk, for example, **PRT01-(FILE)**, the Barr software writes a form header at the top of the file. Form headers contain information normally used for printing. This feature allows you to disable the Barr form header.

Yes – Default. The software writes Barr form headers to all disk files when the destination is **(FILE)**. Form header information includes form name, lines per form, lines per inch, and more.

No – The software does not include the Barr form header in disk files when the destination is **(FILE)**. This is useful for some applications, especially if you do not print the received files. The software still writes form headers for files with a destination of **SPOOL**.

SPUR Compatibility Carriage Control?

This option applies *only* if you replace a SPUR USA-II channel printer driver with the PRINT/TWINAX solution and the data contains DJDEs. This option affects how the software handles carriage control.

No – Default. For most SPUR conversions, you do not need to use this option.

Yes – Use this option to correct vertical alignment. Barr follows the IBM standard, which is different from the way SPUR handles vertical channel skips.

Xerox XDPE package installed on AS/400?

Specify whether you installed the XDPE package.

No – Default.

Yes – Choose **Yes** if you use the XDPE/400 software to put a job name and form name at the beginning and a BARREOF at the end of a print stream (see Appendix A).

Receiving BARREOF end of file string?

Specify whether to receive the end of file string.

No – Default. Do not receive the end of file string.

Yes – Choose **Yes** if you configure your host machine to provide Barr software with a BARREOF string (that is, you use XDPE or PRINT RIGHT or you customize the data yourself).

Disconnect if Twinax Line Idle?

Choose whether to disconnect if there is no activity on the line.

No – Default. Do not disconnect.

Yes – Allows the program to disconnect automatically after the idle time period expires if there is no activity on the twinax line. Works in conjunction with the RJE disconnect settings on the **Installation Description, Tuning and Global Options, and Restart Actions** screens.

Idle Time Period:

Default is 60 seconds.

Describe Adapter 2

When you finish defining print sessions, press ENTER to display the **Adapter 2 Description** screen.

Adapter 2 Description			
Session Name	Switch Settings	Printer Emulation	PC Printer
PRT07	01	5225	Line Printer
PRT08	02	5225	Line Printer
PRT09	03	5225	Line Printer
PRT10	04	5225	Line Printer
PRT11	05	5225	Line Printer
PRT12	06	5225	Line Printer

Enter character

Because each PRINT/TWINAX device needs a station address, you must assign the station address to each 5250 session. You must also specify the 5250 printer to emulate and the computer printer to use.

Session Name

The software automatically assigns a default name for each 5250 printer session, but you can change it. The default session names are **PRT01** to **PRT06** for adapter 1 and **PRT07** to **PRT12** for adapter 2. If you change the session names, the new name must allow you to associate each host port with each printer session. The session names display on the **Assign Devices** screen.

Switch Settings

Specify the 5250 printer session's switch setting. Choose **00** to **06**.

Printer Emulation

Select the IBM 5250 printer to emulate for this printer session.

5225 – Default. Emulate IBM 5225 line printer. Compatible with most printers supported by Barr software. Maximum supported record length is 198 characters. Recommended for most cases.

4214 – Emulate IBM 4214-2 printer. Compatible with most printers supported by Barr software. Maximum record length is 220 characters. Use the 16-cpi or 17.1-cpi font at the AS/400 and on the printer.

5256 – Emulate IBM 5256 line printer. Compatible with most printers supported by Barr software. Maximum supported record length is 132 characters.

5219 – Obsolete.

PC Printer

Specify the computer printer on which to print the output from this PRINT/TWINAX printer session. You can attach the computer printer to a serial adapter, parallel port, or the PRINT370 adapter.

Line Printer – Print the output on a line printer. Select the type of line printer from the **Devices and Printers** screen. **Line Printer** is a good choice for most channel printers; for example, Xerox, IBM, or Océ.

HP LaserJet II – Print to an HP LaserJet. Select **Generic** as your printer type from the **Devices and Printers** screen.

Xerox LPS, Xerox Color, Xerox 4235 – Obsolete.

Set Adapter 2 IRQ and Device Address

You must specify some settings for the Barr TWINAX adapter in the Barr software.

After you determine the sessions and printer emulation, press ENTER to display the **Adapter 2 Interrupt Request and Device Address** screen.

Adapter 2 Interrupt Request and Device Address	
Interrupt Request?	<u>IRQ5</u>
Device Address?	<u>320</u>
Memory Address?	<u>EC00</u>
Perform Adapter test?	<u>No</u>
	Choice? + -

You can specify the following options.

Interrupt Request?

You can select the IRQ only from software. The default IRQ is **IRQ4** for adapter 1 and **IRQ5** for adapter 2. Other choices are **IRQ2** or **IRQ3**. You might have an IRQ conflict if you select **IRQ2** and use a LAN adapter because LAN adapters typically use **IRQ2**.

Device Address?

The device address comes preset to **310** (310-31F) for adapter 1 and **320** (320-32F) for adapter 2. Device address choices range from **000** to **3F0**. If you change the address on the adapter, you must also change this software setting.

Note:

The TWINAX adapter address uses all 16 address lines. You can compute the TWINAX address as follows:

$$0x2400 + a$$

where *a* is the 10-bit address (for example, 310). The software automatically computes the full 16-bit address.

Memory Address?

The default memory address is **DC00** (DC00-DFFF) for adapter 1 and **EC00** (EC00-EFFF) for adapter 2. Another choice is **CC00** (CC00-CFFF). Your computer might have a memory address conflict if you use a non-IBM VGA adapter or a memory manager with load high capability. If necessary, exclude the region of high memory used by the Barr software from the other program. Use your computer memory manager to exclude the adapter's memory address. See Appendix B for more information about excluding memory.

Perform Adapter test?

Choose whether to perform the Barr TWINAX adapter diagnostics.

No – Default. Do not perform the adapter test.

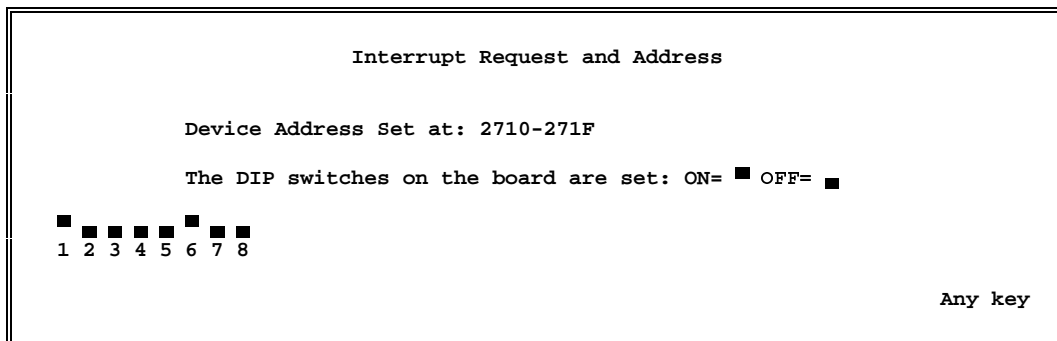
Yes – Perform the adapter test from the **Operation** screen. The adapter test verifies if the TWINAX adapter and cable function properly. Set this value to **Yes** only when you perform the test. Set it to **No** for normal operations.

Note:

The Barr software does not function properly if you set **Perform Adapter test** to **Yes** during software operation.

To perform the test:

1. Detach the TWINAX cable from the AS/400, but leave it attached to the Barr TWINAX adapter. If you do not detach the cable from the AS/400, the test will give you a false error reading.
2. Set **Perform Adapter test** to **Yes**. The **Interrupt Request and Address** screen displays.



The software settings must match the switch settings on the adapter.

Note:

The Barr software does not function properly if you set **Perform Adapter test** to **Yes** during software operation.

The device address on each Barr TWINAX adapter comes preset for DIP switches 1 to 7. When you use two adapters, switch 8 should be ON for both adapters.

3. Press ENTER to display the **Installation Description** screen. Select **Exit and Save Changes**, but set both save options to **No**. Then select **Begin communication at Operation screen**. (Do not save this value to the program .EXE file.) If the

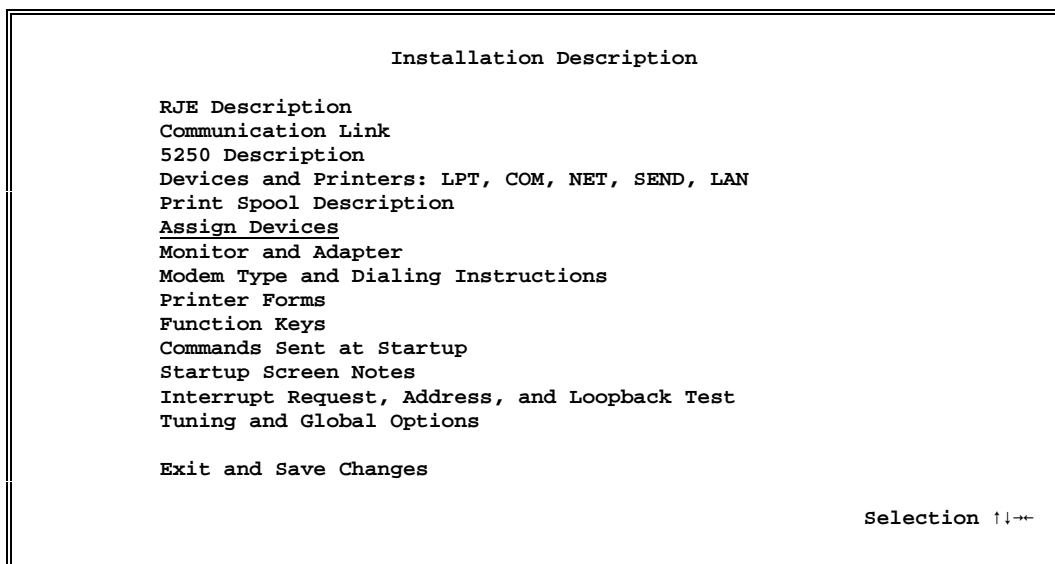
adapter functions correctly, the software generates no messages. If you have a faulty adapter or cable, an error message like the following displays:

5250-EA Adapter Failure.
Call for Support.

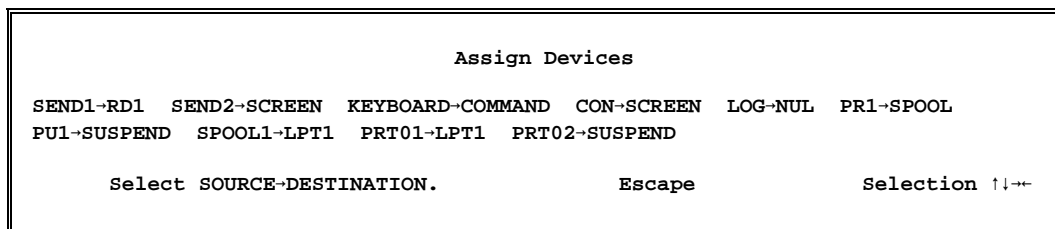
4. When you complete the test, choose **Exit** to DOS, reattach the TWINAX cable to the AS/400, and restart the software.

3.3 Assign Devices

After you complete the 5250 **Description**, you need to assign the 5250 output to a destination device. Start at the **Installation Description** menu.



- Select **Assign Devices**.



The 5250 devices appear on the **Assign Devices** screen as the source devices **PRT0n**, where **n** is the number of the 5250 printer session. For example, **PRT01** is the device corresponding to 5250 printer session 1. (In the software version that supports two adapters, **PRT01** is the first printer session on adapter 1 and **PRT07** is the first printer session on adapter 2.)

Assign a 5250 Printer to SPOOL

BARR/RJE allows you to spool the print files received with PRINT/TWINAX. The following example shows you how to assign the source device **PRT02** to the destination device **SPOOL**.

```

                                Assign Devices

SEND1→RD1  SEND2→SCREEN  KEYBOARD→COMMAND  CON→SCREEN  LOG→NUL  PRI→SPOOL
PUI→SUSPEND  SPOOL1→LPT1  PRT01→LPT1  PRT02→SUSPEND

          Select SOURCE→DESTINATION.                Escape                Selection ↑↓→←
  
```

1. Select **PRT02** as the source.

```

                                Assign Devices

DESTINATION?  (FILE)  SCREEN  NUL  SUSPEND  LPT1  COMMAND  RD1  SPOOL

                                                Selection ↑↓→←
  
```

BARR/RJE and BARR/SPOOL allow you to spool print files received with PRINT/TWINAX. (You can specify spool printers on the **Print Spool Description** screen.)

2. Select **SPOOL** as the destination.

```

                                Assign Devices

Beginning of file name: PR-FILE
Ending of file name is not used.      New file      Log      Enter character
  
```

3. Enter the name for the print file in the spool directory. See the chapter on print spooling in your *BARR/RJE* or *BARR/SPOOL* manual for more information.

```

                                Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUL-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SPOOL

        Continue      Escape      Receive mode      Options      Help

```

The **Assign Devices** screen reflects the new setting.

Assign a 5250 Printer to File

If you want to use PRINT/TWINAX for file transfer, you can assign a destination of (**FILE**). The following example shows you how to assign the source device **PRT02** to the destination device (**FILE**).

```

                                Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUL-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SUSPEND

        Select SOURCE-DESTINATION.      Escape      Selection ↑↓←→

```

1. Select **PRT02** as the source.

```

                                Assign Devices

DESTINATION?  (FILE)  SCREEN  NUL  SUSPEND  LPT1  COMMAND  RD1  SPOOL

                                                Selection ↑↓←→

```

2. Select (**FILE**) as the destination.

```

                                Assign Devices

Beginning of file name: C:\PR-FILE
Ending of file name is not used.      New file      Log      Enter character

```

3. Enter the directory path and file name (unless you use the **Ending of file name** option).

See the “Assigning a File as a Destination” section of your *BARR/RJE* or *BARR/SPOOL* manual for more information about these options.

See the “Select Options” section later in this chapter for more information about selecting options for the (**FILE**) destination.

Assign a Receive Mode

Receive mode controls how the software handles files received to the computer. Only two of the available receive modes apply to data received with PRINT/TWINAX.

ASCII

Default receive mode. The software converts the incoming EBCDIC file to an ASCII print file. See Appendix B of your *BARR/RJE* or *BARR/SPOOL* manual.

S/370 Channel

The software converts data to the Barr **S/370 Channel** format as required with the PRINT370 option. When you receive data to send to a channel printer, you must set the receive mode to **S/370 Channel** and set **Carriage control** to **normal**.

The following example shows you how to assign **S/370 Channel** receive mode to the data received on printer session 2 (**PRT02**).

```

                                Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUI-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SPOOL

Continue      Escape      Receive mode      Options      Help

```

1. From the **Assign Devices** screen, select **Receive mode**.

```
Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUI-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SPOOL

ASCII  N ASCII lines  Variable ASCII lines  Transfer files  Transparent
Binary  DOS (obsolete)  Fixed length  S/370 Channel  PostScript ↑↓→
```

2. Select **s/370 Channel**. (Only **ASCII** and **s/370 Channel** receive modes apply to **PRINT/TWINAX**.)

```
Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUI-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SPOOL*

Carriage control: normal                               Choice + -
```

3. Select **normal** for carriage control.

```
Assign Devices

SEND1-RD1  SEND2-SCREEN  KEYBOARD-COMMAND  CON-SCREEN  LOG-NUL  PR1-SPOOL
PUI-SUSPEND  SPOOL1-LPT1  PRT01-LPT1  PRT02-SPOOL*

Continue      Escape      Receive mode  Options      Help
```

An asterisk appears next to the destination device when you select a receive mode other than **ASCII**.

Select Options

Several options control how form information displays as file attributes on the spool screen.

From the **Assign Devices** screen, select **Options**. The options screen displays.

Assign Devices

ASCII data with ASA carriage control? No
OUTPUT statement used in file? No Class: 1 Spool header from data? No
Ignore 0 lines from start of file. Strip spool header? No
Choice? + -

ASCII data with ASA carriage control?

Specify whether to recognize the first character of ASCII data as carriage control. This option only works with ASCII receive mode and only affects jobs printed to S/370 channel-attached printers.

No – Default. Treat all ASCII characters as data and thus print all characters.

Yes – Recognize the first character of ASCII data as carriage control and set a flag in the spool header.

OUTPUT statement used in file?

You can use the OUTPUT statement to specify file attributes such as job name, form name, file name, copies, priority, and class. Before the Barr software receives the file, you must add an OUTPUT statement to the file. You might need to change the host application program that produces data so it writes the OUTPUT statement to the file.

Note:

For PRINT/TWINAX, you can use XDPE or PRINT RIGHT to do this. See Appendix A.

No – Default. Does not use the OUTPUT statement.

Yes – The software extracts OUTPUT statement information from the file and places it in the spool file header. You must include the OUTPUT statement in the file before you receive it to the computer.

In the OUTPUT statement, the word **OUTPUT** must begin in column 1, column 7 must be blank, and the keyword for the first option must begin in column 8. The statement must fit on one line in the file. It cannot wrap to the next line. If the file's maximum line length is limited to 80 characters, you might not be able to specify all the possible options.

Use these keywords to set options in the OUTPUT statement and substitute the option value for *n*: **FILENAME=*n* JOBNAME=*n* FORMNAME=*n* FCBNAME=*n* COPIES=*n* PRIORITY=*n* CLASS=*n* DISP=*n* ASCIIASA=*n***. (You cannot abbreviate the keywords.) You can list the options in any order. Specify only the options you need. For example:

```
OUTPUT FILENAME=taxdata FORMNAME=taxes
```

Note 1:

Do not confuse the Barr OUTPUT statement with the job control language (JCL) OUTPUT statement, which has a different use.

Note 2:

You cannot use both the Barr OUTPUT statement and a control file. You must use one method or the other.

Class: n

Use this option to assign a new default output class to files received on the given source device. The selected **Class** value appears as an attribute for the file on the spool screen. You can set it differently for each source device. The Barr default classes are 1 for **PRT01**, 2 for **PRT02**, and so on. Another way to set **Class** is to use the **File Attribute Table (FAT) Options** on the **Print Spool Description** screen.

Spool header from data?

This option controls if the software extracts the form name or job name for the spool header from a text line within a file when it receives the file.

No – Default. The software does not extract spool header information.

Yes – You can extract the form name or job name from a specified location in the file and place it in the spool header. Choose **form name** or **job name** and enter the **page**, **line**, and **column** numbers where the name appears in the file. The software places a spool header in all files input through this source device.

In the header, the software takes form name or job name from the data, sets class from the **Class** option, and defaults other field values. This works for **SEND1** to **SEND2**, **COM1** to **COM4** (input), **PR1** to **PR7** and **PU1** to **PU4**, 3270 printers (**PR_n**), and **PRINT/TWINAX** printers (**PRT01** to **PRT06** and **PRT07** to **PRT12**).

SPOOL header from data is a valid option when you select the **ASCII** or **S/370 Channel** receive mode.

<p>Assign Devices</p> <p>Spool header's <u>formname</u> is on page <u> 0 </u>, line <u> 0 </u> in columns <u> 0 </u> to <u> 0 </u>.</p> <p style="text-align: right;">Choice? + -</p>
--

If you receive files on the COM port and the form name is not in the same position in each of the received files, you might not be able to obtain a form name or job name with the usual options.

You can use **SPOOL header from data** with **Class** to assign a one-character form name. To do this, set **Class** to a unique value, set **SPOOL header from data** to **Yes**, and set **page** to 0. The software uses the one-character **Class** value as the form name and displays it on the spool screen as the form name for the file. You can use the form name as criteria for determining when to print the files or you can create a forms overlay file with the same name to load printer control data. Other header options are available, so use this special feature only as a last resort.

Ignore n lines from start of file.

This option specifies the number of lines (**n**) to delete from the beginning of a file when the software receives the file; for example, the first two records of a punch file (a blank card and a file separator card). The maximum value is 32767 lines.

Strip spool header?

When you write files to disk, you can remove spool headers from the files. This option only displays when the destination is **SPOOL** or **(FILE)**. If you strip the spool header when the destination is **SPOOL**, the file has no header information and is assigned a class of **Z**. The most useful application is to set the option to **Yes** for **SPOOL1-(FILE)** so the print spool uses the header information to route the file by way of a spool printer (**SPOOL1**) but does not preserve the header in the final destination on disk.

No – Default. Do not strip the spool header.

Yes – Remove the spool header from the file. Write the spool header to all files. Use when multiple Barr computers share a spool directory.

3.4 Exit and Save Changes

Select **Exit and Save Changes** from the **Installation Description** menu when you finish specifying software settings.

4. Configure the AS/400 or System/3x

Besides defining printer sessions to the Barr software, you must also define the 5250 printers to the AS/400 or System/3x. This section outlines how to configure and print from the AS/400 or System/3x.

4.1 Configure the AS/400

You must define the 5250 printer sessions as 5250 devices to the AS/400. The AS/400 offers two types of configuration: automatic and manual.

This manual only outlines the installation steps. Use the AS/400 online help feature or refer to the AS/400 documentation for more information.

Automatic Configuration

If you set your AS/400 to automatic configuration, the AS/400 automatically locates and identifies attached devices. You do not have to tell the AS/400 when you attach new devices from the Barr software. The Barr software responds to the AS/400 identification request and tells it what printer is attached for each session you defined.

Manual Configuration

If you do not set your AS/400 for automatic configuration, you must manually define the Barr printer sessions as 5250 printers in the AS/400 configuration. You create a printer description and include the device type, port number, and station address (the AS/400 switch setting) for each 5250 session in the Barr software. You must use the `CRTDEVPRT` command to create the device as discussed in the *OS/400 Communications Configuration Reference* (SC41-0001).

4.2 Configure the System/3x

You must define the 5250 printer sessions as 5250 devices in the System/3x configuration. The System/3x offers two types of configuration: automatic and manual. Use the manual configuration.

Using the `CNFIGSSP` procedure, change or create a configuration member, answer **No** to **Do you have a 3262 printer**, and enter the device codes for each printer on the port. An option on the screen lets you display the device code choices.

See the System/3x manual *Changing Your System Configuration (SC21-9052-4)* for specific instructions.

4.3 Print from the AS/400 or System/3x

You can use the printers attached to the Barr computer as standard AS/400 or System/3x printer devices. You can print data from the AS/400 or System/3x to the computer by setting an application, such as a word processing program, to print files to a specific device or you can issue print commands from the AS/400 or System/3x screens to print a file.

After you receive files to the computer, you can send them directly to the printer or you can print them from the Barr spool. See the “Operation” chapter in your *BARR/RJE* or *BARR/SPOOL* software manual.

5. View Communication Diagnostics

The Barr Communication Scope displays activity between your computer and AS/400. (The scope does not display communication characters for the System/3x.)

With the PRINT/TWINAX communications diagnostics, you can do the following:

- Monitor activity between the computer and AS/400
- Save a copy of memory to disk
- Record a line trace to disk

The Barr Communication Scope appears on the top line of the logon screen. When the software sends a message, green characters appear. When the software receives a message, magenta characters appear. On a monochrome display, the message sent appears in normal type and the message received appears in reverse video.

In this chapter, characters sent display in normal type and characters received display in reverse video. The following example shows scope characters that display during a normal connection with two printers defined.

```
COMMUNICATION SCOPE: I SQR SQR1234
```

SQR displays once for each session as the session begins communicating on the channel. If you use two adapters, one **SQR** displays for each device on each adapter. The numbers indicate the frames of data being received.

Table 5-1 lists scope characters and their meanings.

TABLE 5-1
TWINAX Scope Characters

Character	Meaning
0-7	Information frame. Frame number of information frame.
C	Clear. Clear command received from AS/400.
E	Parity Error. Frame number of information frame.
I	Initialization complete. All sessions on the adapter initialized and online.

Character	Meaning
L	Write Control Data. Received write control data command from AS/400.
Q	End of Queue Delimiter. Received end of queue delimiter command from AS/400.
S	Set Mode. Received set mode command from AS/400.
R	Read. Read device ID from AS/400.

A. AS/400 Printing Enhancements

The AS/400's operating system lacks the following mainframe operating system features, which are critical for various printing capabilities:

1. When it sends data to twinaxial printers, the AS/400 does not clearly identify the end of each job; therefore, PRINT/TWINAX cannot separate jobs for spooling and delivery to different destinations.
2. There is no provision for placing character strings (for job names and form names used to route files and for form overlays) at the beginning of print jobs sent from the AS/400 with twinax.

You can use one of the AS/400-resident programs described in this appendix to add the required features.

A.1 Use XDPE/400 for Xerox Printers

All PRINT/TWINAX customers who use Xerox printers or a combination of Xerox and other printers can use the Xerox Document Print Executive/400 (XDPE/400) product. XDPE/400 provides OS/400 job separation and inserts printer control strings plus other features. You can print multiple copies by sending the file several times.

For the Xerox 4235, XDPE/400 allows the printer to support form overlays in ASCII mode, which is valuable because the 4235 does not support twinaxial SNA Character String (SCS) data streams in the Xerox Print Production Mode (XPPM). XPPM means the printer can accept XPPM escape sequences, which you can use for special functions.

XDPE/400 is available through Xerox's direct sales and through selected channel partners participating in the Xerox Channel Printing Systems Program. Contact your local Xerox sales representative (800-TEAM-XXR) for the latest pricing information.

A.2 Use PRINT RIGHT for Other Printers

If you do not have Xerox printers, use PRINT RIGHT from SOFTCommand, Inc.

Note:

PRINT RIGHT does not work with System/36 printers.

The AS/400 does not automatically provide all necessary information in print jobs. You can use PRINT RIGHT in conjunction with PRINT/TWINAX to add an OUTPUT statement at

the beginning and append an end-of-file string at the end of every job as shown in the following figure.

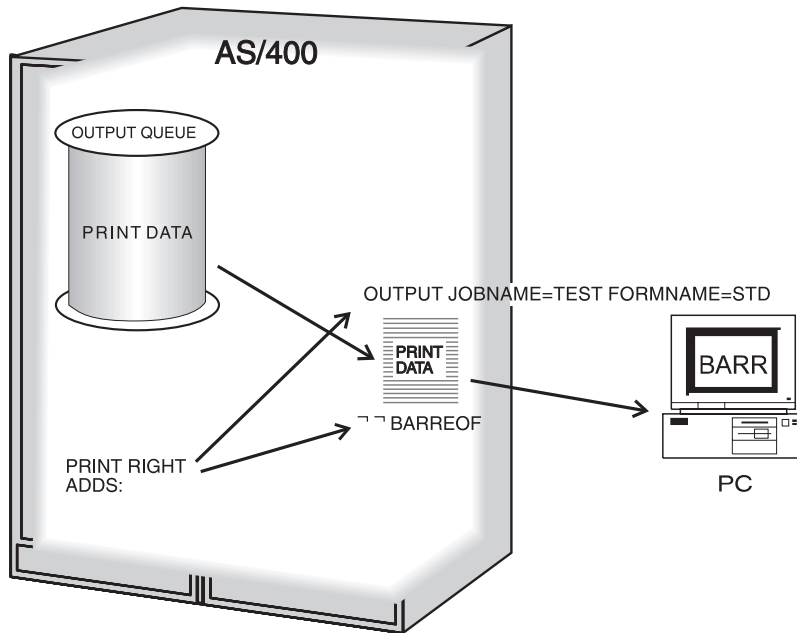


Figure A-1. Using PRINT RIGHT with PRINT/TWINAX.

Barr provides an AS/400 Command Line (CL) program with PRINT/TWINAX to create an OUTPUT statement that tells the Barr software the job name and form name. Barr provides a default setup for PRINT RIGHT, which you can easily modify to add site-specific functions. For Océ printers, PRINT RIGHT allows the printer to support the SNPFORM and SNPIMAGE software that creates form overlays used by the Barr software.

Follow these steps to set up PRINT RIGHT. See your PRINT RIGHT documentation for more details about editing print job definitions. The steps described here assume you have already installed PRINT RIGHT software on the AS/400.

1. Use the EDTPRCTL command to apply PRINT RIGHT to all devices the PRINT/TWINAX software emulates. For example, if PRINT/TWINAX emulates two devices named PRT03 and PRT04, add these two names to the list of devices used with PRINT RIGHT.
2. Use the CHGPJOB command to set up the print job definition named PRTRITSTD. If you create no other print job definitions with PRINT RIGHT, the program always defaults to this PRTRITSTD. Set up the three **Print Job Definition** screens as follows.

▪ **Print Job Definition - Control**

```
1-29-96  9:53:20      Print Job Definition - Control                      S1043953
Print Job Definition name . . . . . PRTRITSTD
Library name . . . . . PRINTRIGHT
Enter values, press ENTER.
Page eject after print job data? . . . . N (Y=Yes, N=No)
Character used to separate lines . . . . \  ==> NL (CR, LF, NL)
Produce Print Right file separator? . . N (Y=Yes, N=No)
Type of job end banner . . . . . *DEV  (*DFT, *NONE, *DEV)
Escape character used in definition . . _  ==> 41 (hex)
F3=Exit          ENTER to continue          F12=Previous
```

Leave the **Character used to separate lines** parameter set to \. Set the **Type of job end banner** field to *DEV to pick up the end-of-file string, which you will create in step 3 of these instructions. The other parameters in this screen are optional.

▪ **Print Job Definition - Form Change**

```
1-29-96  10:04:42    Print Job Definition - Form Change                      S1043953
Print Job Definition name . . . . . PRTRITSTD
Library name . . . . . PRINTRIGHT
Enter data to send only when form type changes (string format):
█
____
____
____
____
____
F3=Exit          ENTER to continue          F12=Previous          F15=Line format
```

Leave this screen blank.

▪ **Print Job Definition - Print Job Setup**

```
1-29-96  9:57:48      Print Job Definition - Print Job Setup      S1043953

Print Job Definition name . . . . . PRTRITSTD
Library name . . . . . PRINTRIGHT

Enter data to send before each print job (string format):

$$PGM=BARRLIB/BARROUT$$
_____
_____
_____
_____
_____

F3=Exit          ENTER to continue          F12=Previous          F15=Line format
```

Enter the following line on this screen.

```
$$PGM=library/BARROUT$$
```

This line calls the BARROUT CL program (listed at the end of this appendix) to generate an OUTPUT statement each time a job prints. The OUTPUT statement contains information about the job (such as job name and form type). The Barr software identifies the job by the OUTPUT statement.

3. Use the CHGPJOB command to create a print job definition once for each device. The software uses these definitions to send an end-of-file string after each job. For instance, if you have two devices called PRT03 and PRT04, create one print job definition called PRT03 and one called PRT04. In each print job definition, set up the three screens as follows:

- **Print Job Definition - Control:** Leave these options at their defaults.
- **Print Job Definition - Form Change:** Leave this screen blank.
- **Print Job Definition - Print Job Setup:** Enter the following line on this screen.

```
¬¬BARREOF
```

Because the PRTRITSTD Print Job Definition is set to *DEV for its job end banner, this string gets sent at the end of every job. The first two characters (↵↵) are logical nots or hexadecimal 5F. An AS/400 terminal keyboard has this character. If you use a computer running PC Support, use SHIFT+6 to generate these two characters.

4. Use the Data Transfer utility provided with the PC Support program to copy the BARROUT CL program to an AS/400 library from the Barr reference directory (C:\BARR\REF\). Then compile the CL program on the AS/400.

You must purchase a separate PRINT RIGHT license for each AS/400. To receive updates, which might be required with new releases of OS/400, you must purchase a maintenance agreement for PRINT RIGHT from SOFTCommand.

Sample BARROUT Program

You can download the BARROUT program from the Barr FTP site. Use your Web browser or FTP program to get to the ftp.barrsystems.com site. The BARROUT program is zipped inside a file called PRIGHT.EXE in the Utility subdirectory.

```

PGM PARM(&SPOOL &RETURN &CONTROL)
/* PROGRAM: BARROUT */
/* AUTHOR : DAVE STAAL */
/* DATE : 4/6/93 */
/* PURPOSE: THIS PROGRAM READS IN INFORMATION ABOUT A SPOOL FILE */
/* AND CREATES AN OUTPUT STATEMENT. THIS IS MEANT TO BE */
/* USED WITH PRINT RIGHT. */
DCL VAR(&SPOOL) TYPE(*CHAR) LEN(900) /* SPOOL ATTRIBUTES */
DCL VAR(&RETURN) TYPE(*CHAR) LEN(700) /* RETURNS OUTPUT DATA */
DCL VAR(&CONTROL) TYPE(*CHAR) LEN(16) /* CONTROL INFO */
DCL VAR(&CURRENT) TYPE(*DEC) LEN(3 0) /* POSITION IN OUTPUT */
/* INITIALIZE THE VARIABLES */
CHGVAR &RETURN ' '
CHGVAR &CURRENT 1
/* */
/* FILL IN RETURN STRING WITH INFO FROM SPOOL ATTRIBUTE TABLE */
CHGVAR %SST(&RETURN &CURRENT 32) '\Job name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10) %SST(&SPOOL 41 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32) '\User name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10) %SST(&SPOOL 51 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32) '\Job number . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10) %SST(&SPOOL 61 6)
CHGVAR &CURRENT (&CURRENT + 6)

```

```

CHGVAR %SST(&RETURN &CURRENT 32)  '\Spooled file name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 67 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Form type . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 81 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\User-specified data . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 91 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Total pages . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %BIN(&SPOOL 141 4)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Total copies. . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %BIN(&SPOOL 165 4)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Output queue name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 183 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Device file name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 216 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Program that opened file name:. . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 236 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Document name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 329 12)
CHGVAR &CURRENT (&CURRENT + 12)
CHGVAR %SST(&RETURN &CURRENT 32)  '\Folder name . . . . . : '
CHGVAR &CURRENT (&CURRENT + 32)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 341 64)
CHGVAR &CURRENT (&CURRENT + 64)
/* */
/* CREATE OUTPUT STATEMENT */
CHGVAR %SST(&RETURN &CURRENT 16)  '\OUTPUT JOBNAME='
CHGVAR &CURRENT (&CURRENT + 16)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 41 10)
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 10)  ' FORMNAME='
CHGVAR &CURRENT (&CURRENT + 10)
CHGVAR %SST(&RETURN &CURRENT 10)  %SST(&SPOOL 81 10)
CHGVAR &CURRENT (&CURRENT + 10)
/* */
/* NOW FILL IN THE CONTROL VARIABLE WITH THE HEX VALUE OF CURRENT */
CHGVAR %BIN(&CONTROL 1 4) VALUE(&CURRENT)
ENDPGM

```

B. Excluding and Checking Memory

You can check your computer's memory to make sure the high memory range (DC00-DFFF, EC00-EFFF, or CC00-CFFF) is available before you select the address in the Barr software. If you have a memory address conflict with other software, you can add a line to your CONFIG.SYS file to exclude other programs from using a region of high memory and thus reserve it for the Barr software. If hardware uses the memory range, you cannot exclude it and must select a different range.

Check a Memory Range

To make sure the memory address you specify in the Barr software is available to the adapter, follow these steps.

1. Enter the DOS `debug` command at the DOS prompt.

```
debug
```

A hyphen prompt displays.

2. Enter the `Display` command and the range of memory you want to check (for example, DC00-DFFF) at the hyphen prompt:

```
D DC00:0000
```

In the example, `D` is the `Display` command, `DC00` is the beginning address, and `0000` is the memory offset.

The hexadecimal values in that memory range display. You can continue entering a `D` at each hyphen prompt to display the entire range from DC00 to DFFF. Each byte must display an `FF`. Any characters other than `FF` mean the range is not available. If the DC00 range is not available, you can check the EC00 or CC00 range.

Exclude Memory for the PRINT/TWINAX Software

A non-IBM VGA adapter or a memory manager with load high capability might cause a memory address conflict with your PRINT/TWINAX software. To exclude the region of high memory used by the PRINT/TWINAX software from the other program, you can enter a line in your CONFIG.SYS file. The following example excludes memory range DC00-DFFF.

```
DEVICE=C:\DOS\EMM386.EXE X=DC00-DFFF
```

Restart your computer and check the memory range again.

Notes:

Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits provide reasonable protection against harmful interference when you operate the equipment in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this equipment in a residential area could cause harmful interference, which you must correct at your own expense.

Note:

You must use a shielded and grounded cable.

Notes:

European Community Statement

This product meets Class B emissions limits and immunity requirements if the conditions of use are met; that is, you must use the supplied cables.



Notes:

Warranty

Software License Agreement: Single-User

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Glossary

adapter

Add-on piece of equipment you can plug into a computer to allow the computer to connect to another device.

ASCII

Acronym for American Standard Code for Information Interchange. A standard used by computers that specifies the correspondence from 128 graphic and control symbols to a 7-bit code.

binary

Describes a system of numbers to the base two. The binary digits are 0 and 1.

BIOS

Acronym for Basic Input/Output System. Code that controls basic hardware operations, such as interactions with disk drives, hard disk drives, and the keyboard.

bit

Binary digit. The name of an elementary unit of information that has two states, usually called 0 and 1.

bps

Abbreviation for bits per second. A unit of measure for the information transfer rate.

Bus & Tag cables

Cables used to connect devices to mainframe channels.

byte

A string consisting of a number of bits treated as a unit and representing a character. Usually a string of eight adjacent binary digits that represent one EBCDIC character.

carriage control

Characters used to control vertical spacing of print lines.

channel-attached

Describes a direct way to attach printers to S/370 mainframes.

character

A single letter, digit, symbol, space, or punctuation mark.

COM1, COM2, COM3, COM4

Asynchronous serial ports 1, 2, 3, and 4 on the computer.

cps

Abbreviation for characters per second for printing speed.

Dataproducts Interface (DPI)

DPI originated with the Dataproducts Corporation and drives high-speed printers and typesetting equipment.

device

An input and output unit connected to the computer such as a printer, plotter, or monitor.

DJDE

Acronym for Dynamic Job Descriptor Entry. Instructions in the job stream that tell the printer the forms, fonts, and graphics to print for Xerox centralized printing.

DOS

Acronym for Disk Operating System. An operating system for computers that uses disks to store programs and data.

driver

Software program that controls a specific device like a printer or a network connection. Drivers load into memory and stay active while you do other work.

EISA

Acronym for Extended Industry Standard Architecture, which is backward compatible with ISA.

emulator

Program that acts like a device.

header

Data at the start of a file that describes the file and how to print it.

ISA

Acronym for Industry Standard Architecture. A standard for the computer's expansion bus (where you plug in add-on adapters). The IBM AT bus became a 16-bit ISA.

Local Area Network (LAN)

A high-speed communications network within a limited geographic area. Typically, several computers link together within a single building or campus. (In contrast, a wide area network can span hundreds or thousands of miles.)

lpm

Abbreviation for lines per minute for printing speed.

LPT1, LPT2, LPT3

Computer parallel printer ports 1, 2, and 3.

operating system

A master program that manages the computer's resources. The operating system provides a set of services to all programs for input/output, data management, program loading, memory allocation, and communication facilities for job entry and output dispatching.

port

Way to connect external devices to computers.

ppm

Abbreviation for pages per minute for printing speed.

PR1

RJE printer 1.

print queue

A list of items waiting to print.

print server

A program or processor attached to a LAN that manages file printing.

print spooling

Way to manage printing files on one or more printers.

printer control data

Data used to specify the printer's operating mode.

printer forms commands

Commands sent to the host to manage special forms printing.

program

Step-by-step instructions for performing a task. You can write instructions for a computer in a high-level language like FORTRAN, BASIC, or C.

queue

A list of items waiting for service in a system.

receive

To obtain data from a communications line.

receive mode

Options that control the way in which files are received.

RS232

EIA Standard RS232C for connecting data communication equipment to data terminal equipment, including connecting terminals and computers to modems. Many computer peripheral devices also use this interface to connect to computers. See serial interface port.

S/370

IBM mainframe machine architecture. See channel attached.

SCS

SNA character string.

serial interface port

Interface ports that send and receive data one bit at a time with the RS232 standard.

serial port input

Files read from a serial port (COM1-COM4). You can print these files, send them to the host, or route them on a LAN.

SNA

Acronym for Systems Network Architecture.

software

Programmable instructions (for example, programs, databases, and files) for operating a computer system's physical machinery.

software disk

A flexible, magnetic-coated mylar disk used to record information. Synonymous with flexible disk or floppy disk.

spooling

Acronym created from Simultaneous Peripheral Operations On-Line. Spooling allows independent flows of data to proceed concurrently. For example, you can send files from disk to the host computer while printing other files.

TCP/IP

Acronym for Transmission Control Protocol/Internet Protocol. A suite of protocols that allow communication between networks, regardless of the technologies implemented in each network.

translation

Process of converting from one coding convention to another.

XPPM

Acronym for Xerox Print Production Mode. Applies to Xerox 4245 laser printers.

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