Personal Communications
AS/400 and 3270 for OS/2

IBM

# Reference

*Version 4.1*

SC31-8259-00

Personal Communications
AS/400 and 3270 for OS/2

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*Version 4.1*

SC31-8259-00

**Note**

Before using this information and the product it supports, be sure to read the general information under “Notices” on page xv.

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This edition applies to Version 4.1 of Personal Communications and to all subsequent releases and modifications until otherwise indicated in new editions or technical newsletters. This edition is a major revision of *S85G-8678 and S85G-8721*, which still apply to Version 4.0 of this product. Make sure you are using the correct edition for the level of the product.

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# About This Book

This book provides information for using IBM Personal Communications AS/400 for OS/2 (hereafter called PC400) and IBM Personal Communications AS/400 and 3270 for OS/2. *PC/3270* refers to the 3270 portion of the combined package. Throughout this book, *workstation* refers to all supported personal computers. When only one model or architecture of the personal computer is referred to, only that type is specified.

## Who Should Read This Book

This book is intended for the person who installs and uses Personal Communications on a workstation.

## How to Use This Book

This book contains reference information that you might need to refer to when installing or operating Personal Communications.

Personal Communications is designed to use various communication adapters and to work with other workstation and host system software. Refer to the appropriate documentation for the products you use.

## Organization

This book has four sections divided into the following chapters:

**Part 1: General Information**

**Chapter 1, Personal Communications Highlights** , describes the functions of Personal Communications.

**Chapter 2, Where to Get More Information** , describes where to find more information and how to report problems to IBM.

**Chapter 3, Printing** , describes how to set up printers.

**Chapter 4, Transferring Files** , describes how to transfer files between a host system and a workstation.

**Chapter 5, Configuration, Installation, and Distribution (CID)** , describes the configuration, installation, and distribution methods of Personal Communications.

**Chapter 6, Modems** , describes how to set up and use modems with Personal Communications.

**Chapter 7, Code Pages** , describes the country codes, code pages and character sets supported by Personal Communications.

**Chapter 8, Keyboards** , describes the keyboards supported by Personal Communications.

**Chapter 9, Messages** , explains information Personal Communications displays in the message window.

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**Part 2: Personal Communications/3270**

**Chapter 10, Building a Printer Definition Table (PDT) for PC/3270** , explains how to create and change the printer definition table (PDT) used for PC/3270.

**Chapter 11, File Transfer Commands for PC/3270** , explains file transfer for PC/3270.

**Chapter 12, Considerations for PC/3270 Installation and Use** , provides technical information, considerations, and restrictions for PC/3270.

**Part 3: Personal Communications AS/400**

**Chapter 13, Building PC400 Printer Definition Tables (PDTs)** , explains how to create and change the printer definition table (PDT) used for PC400.

**Chapter 14, Field Attribute Codes** , describes field attribute codes.

**Chapter 15, Data Transfer for PC400** , explains file description files and data conversion for the PC400 data transfer facility.

**Chapter 16, File Transfer for PC400** , explains file transfer for PC400.

**Chapter 17, Considerations for PC400 Installation and Use** , provides technical information, considerations, and restrictions for PC400.

**Part 4: Appendixes**

**Appendix A, Keyword Mapping and Migration from Communications Manager/2** , explains how Communications Manager/2 keywords map to Personal Communications.

**Appendix B, Deleting Unnecessary Files** , explains how to delete unnecessary Personal Communications files.

This book also contains a glossary and an index.

## Highlighting Conventions

This book uses the following highlighting conventions:

| | |
|---|---|
| UPPERCASE | Uppercase type indicates OS/2 and host programs, commands, and options. |
| **Bold** | Bold type indicates prompts and messages as displayed on the screen.<br><br>It is also used for items you can select, such as the names of buttons, options, check boxes, pull-down menus, commands, and keytops. |
| **Bold Monospace** | Bold monospace type indicates text that you enter to accomplish the actions stated for the example. It is also used for file and directory names. |

| | |
|---|---|
| *Italics Monospace* | Italics monospace type indicates variables for placeholders, parameters, and file names. When you enter a command, replace all variables with the appropriate file name, number, or option. |
| Monospace | Monospace type is also used for examples and variable quantities other than default values on an example display screen. |
| *Italics* | Italic type indicates a book citation or a term that is defined in the immediate context of its use. |
| ***Bold Italics*** | Bold italic type indicates a special emphasis in text. |

## Command Syntax Symbols

Parentheses, brackets, ellipses, and slashes have the following meanings or uses:

**( )** Parentheses enclose operands that govern the action of certain command options.

**[ ]** Brackets indicate an optional command argument. If you do not use the optional item, the program selects a default.

**...** Ellipsis after an argument indicates that you can repeat the preceding item any number of times.

/ For 3270, a slash must precede the TSO/E (Time Sharing Option Extensions) password. A slash must also precede parameters of OS/2 commands entered from the command line. For 5250, a slash must precede parameters of IBM DOS commands entered from the command line.

\ A backslash is included as part of any directory name. An initial backslash indicates the first-level directory, and an additional backslash is inserted in the directory name to indicate another level.

All directives, operands, and other syntax are typed in uppercase or lowercase, unless otherwise indicated.

# General Information

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# Chapter 1. Personal Communications Highlights

Personal Communications provides the following:

**System/390 Connections**

| | |
|---|---|
| **LAN** | LAN via IEEE 802.2 |
| | LAN via NetWare** for SAA |
| | Telnet3270 |
| | 3270 via AS/400 (passthru) |
| | APPC3270 via LAN |
| **COAX** | SNA Distributed Function Terminal |
| | Non-SNA Distributed Function Terminal |
| | Control Unit Terminal (CUT) |
| | 3174 Peer Communication |
| **COM port** | Hayes** AutoSync |
| | SNA-over-Async |
| | IBM Global Network Connection |
| | Advantis (IIN) |
| | Home3270 |
| **SDLC** | Synchronous Data Link Control |
| | 3270 via AS/400 (passthru) |
| | APPC3270 via SDLC |
| **5250** | 3270 via AS/400 (passthru) (twinax) |
| **CM/2** | LUA3270 via Communications Manager (CM/2) or OS/2 Access Feature |
| | APPC3270 via CM/2 or OS/2 Access Feature |

**AS/400 Connections**

| | |
|---|---|
| **LAN** | LAN via IEEE 802.2 |
| | Telnet5250 |
| **SDLC** | Synchronous Data Link Control |
| **5250** | Twinaxial Data Link Control (APPC) |
| | Twinaxial Data Link Control (Console) |
| **COM port** | SNA-over-Async |
| | SNA-over-Async (Console) |
| | Hayes AutoSync |
| **CM/2** | APPC 5250 via CM/2 or OS/2 Access Feature |

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## Highlights

### System/3X Connections

**5250** Twinaxial Data Link Control (Console)

### Installation and Configuration

- Partial installation option
- Program sharing on a network server
- Configuration, installation, distribution (CID)
- Automatic detection of installed communication adapters
- Dynamic change of communication configurations
- Automatic Dial Facility (Async, SDLC, Home3270, SNA-A, Hayes AutoSync)

### Migration

- Migration from Communications Manager/2

### Host Session Function

- Up to 26 sessions
- Variable screen size and automatic font scaling
- Function settings (of the host code page, for example) for each session

### Host Graphics Support

- Built-in vector graphics support for the GDDM product and other graphics applications
- Programmable symbol set (PSS) support

### File Transfer Function

- Easy operation through graphical user interface (GUI) windows
- Batch transfer of multiple files
- Concurrent file transfer through multiple sessions
- Background file transfer
- File transfer invocation by macro
- OfficeVision/MVS Import/Export functions
- ALMCOPY utility provides high-speed file transfers and allows wildcard characters (VM only)

### Edit (Cut and Paste) Function

By using the OS/2 Clipboard, a selected area can be edited as follows:

- Copy
- CopyAppend
- CopyLink
- Cut
- Paste
- Paste Next
- Paste Stop at Protected Line
- Paste to Trim Rectangle
- Support of spreadsheet data format

### Graphical User Interface (GUI)

- Customizable 3D iconic tool bar
- 3D button hotspots
- Pop-up keypad
- Macro function, including record and play
- Keyboard function setup and remapping

- Mouse button function setup and remapping
- Display setup (cursor type, graphics, sound, colors, for example)
- Automatic font size adjustment or fixed font size
- Window appearance setup
- Menu bar setup
- 3270 Light Pen emulation by using a mouse
- *Information Notebook*
- Online help

**Print Function**

- Printer session (for PC/3270: SCS, LU 3, or non-SNA)
- Graphical local print
- Printing with the OS/2 printer drivers
- Print function by printer definition table (PDT) and printer definition file (PDF)
- Multiple host print functions in multiple sessions
- Print job control by SNA bracket timeout
- PFT-to-PDT conversion tool
- PC400 print function by OS/400 Host Print Transform (HPT)
- PC400 printing supported by the AS/400 Advanced Print Support Utility
- ZipPrint

**Programming Interface**

- 32-bit Advanced Program-to-Program Communication (APPC)
- 32-bit Emulator High-Level Language Application Programming Interface (EHLLAPI)
- Dynamic Data Exchange (DDE)
- 32-bit LU Application (LUA)
- Personal Communications API (PCSAPI)
- REXX EHLLAPI
- DOS box or WIN-OS/2 EHLLAPI

**PC400 Client Function**

- Shared folders
- Data transfer
- PC Organizer feature
- Text Assist feature
- Enhanced Programmable Terminal User Interface (ENPTUI)

## Highlights

# Chapter 2. Where to Get More Information

This chapter discusses getting help when you are installing, configuring, or using Personal Communications.

## Online Help

This help facility describes how to install, configure, and use Personal Communications. Online help is very extensive and includes information about every aspect of configuring and using Personal Communications.

Use help to obtain the following information:

- Menu choices
- Operation procedures
- Operations in windows
- Meanings of the terms displayed in windows
- Causes of errors and the corresponding actions to take
- Mouse-based operations
- Operation without a mouse
- Detailed explanations of specific terms
- Further technical information about Personal Communications
- Detailed explanations of operator information area (OIA) messages

## How to Use Online Help

To display online help, select choices from the Help pull-down menu.

You can use Personal Communications online help just as you use the online help for OS/2. Refer to IBM OS/2 information for details.

## Messages

This section describes the Personal Communications online messages. Online messages are displayed during Personal Communications sessions, but a message does not always mean an error occurred. For example, a message might tell you that an operation is in progress or has been completed. A message can also prompt you to wait for the completion of an operation.

Detailed descriptions of the Personal Communications messages are available in Chapter 9 or in the online *Information Notebook*.

## OIA Messages

These messages are displayed in the operator information area (OIA) or in the OS/2 message window. Messages from Personal Communications are displayed in the message window; messages from the host system are displayed in the OIA of the session window.

The bottom line of the session window is the OIA. The OIA indicator indicates the status of Personal Communications as well as information about the workstation, host system, and attachment method.

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### Problem Determination

All of the OIA indicators, reminders, and messages are described in the online help. To view this information:

1. Select **Index** from the Help pull-down menu.
2. Select **The operator information area messages**.

## Personal Communications Library

The Personal Communications library includes the following publications:

*IBM Personal Communications AS/400 and 3270 for OS/2 Version 4.1 Up and Running*

*IBM Personal Communications AS/400 and 3270 for OS/2 Version 4.1 Reference*

*IBM Personal Communications AS/400 and 3270 for OS/2 Version 4.1 Programmer's Guide*

You can use the *Information Notebook* to view topics described in *Up and Running*, the *Reference*, and the *Programmer's Guide*, or you can view each book individually.

From the \PCOMOS2\INFO directory at an OS/2 command prompt, enter:

**VIEW PCSUANR** to display *Up and Running*.

**VIEW PCSREF** to display the *Reference*.

**VIEW PCSPROG** to display the *Programmer's Guide*.

**Note:** The *Reference* and *Programmer's Guide* are optionally installed.

## Related Publications

For more information about NetWare, refer to the publications for the following products:

| | |
|---|---|
| For Client | *NetWare Client for OS/2* |
| For NetWare for SAA | *NetWare for SAA* |

For more information about PC Support/400 refer to the following publications:

*PC/Support/400: OS/2 Installation and Administration Guide*
*PC/Support/400: OS/2 User's Guide*
*PC/Support/400: Application Program Interface Reference*
*PC/Support/400: DOS and OS/2 Technical Reference*

For more information about the AS/400 system, refer to:

*AS/400 Distributed Data Management User's Guide*

*AS/400 NLS Planning Guide*

*AS/400 Programming: Control Language (CL) Reference Guide Version 2*

*AS/400 Guide to Programming for Printing*

For more information about the mouse, refer to the *Mouse Driver User's Guide (OS/2)*.

For more information about OS/2, refer to:

*The User's Guide to OS/2 Warp*
*Using OS/2*, a tutorial
Online books in the Information folder on your desktop.

For the operation of the workstations, refer to your workstation manuals.

For the workstation adapter settings, refer to your adapter's manuals.

For printer operation information, refer to your printer's manuals.

# Problem Determination (PD)

Problem determination (PD) is the first stage in solving your problem.

## Symptoms

Recognize the differences between what you expect to see and what you do see.

## Environment

Recognize the environment in which the problem occurs:

Personal Communications configuration

- Personal Communications version and level
- The name of the workstation profile

Workstation configuration

- The machine type and model, the system memory, the video adapter
- The communication adapter you are using
- Other adapters (especially communication adapters) installed
- The printer type and model
- Other auxiliary devices installed

Software configuration

- OS/2 version and level
- Communication device-driver version and level
- Other communication programs (such as NTS/2, NetWare) that are running and using resources
- Printer driver version and level

Host configuration

- The upstream host connection and configuration

## Problem Type

Categorize your problem into one of the following types:

1. **Installation Problem**. Note the error message and take the required action by consulting Chapter 9.
2. **Configuration or Setup Problem**. If Personal Communications did not connect to the host (that is, if the host screen did not appear) verify that your

hardware, software, and Personal Communications configurations are correctly set up for your host environment. To help you to isolate what is wrong, look up any OIA messages in the online helps, or any error messages in Chapter 9 or in the online help. You might also need to ask your system administrator to verify that your Personal Communications setup values are correctly configured for your host system.

3. **Operational Problem**. Although you were able to connect to the host, you might have difficulty in doing some operations or in using a certain Personal Communications function. Look up any OIA messages in the online help or any error messages in Chapter 9, and study the help and *Up and Running* to see how the operation should be performed.

### Problem Area

You also need to identify where the problem is:

1. Installation and configuration
2. Printer
3. API
4. Other Personal Communications functional area

### Problem Re-Creation

As the final step of the problem determination process, try to re-create the problem; the problem-re-creation procedure and the probability of the recurrence of the problem are key factors in isolating it. If the problem is intermittent, any factor that you think is related to it becomes important information.

## Problem-Source Identification (PSI)

The second stage is to try to identify the real cause of the problem; this depends largely on the problem area:

1. **Installation and Configuration**. Make sure that your personal computer hardware and software are configured correctly. You might also need to contact your system administrator to verify that your Personal Communications setup values are correct for your host system.

2. **Printer**. Identify the operation you are having the problem with:

   Local print
   Host-directed print (LU 1)
   Host-directed print (LU 2)
   Host-directed print (LU 3)
   Host-directed print (non-SNA)

   Also identify which printer mode you are using:

   PDT mode: Personal Communications-proprietary printer-driver mode
   GPI mode: OS/2 printer-driver mode

   Then check that you have installed the correct printer driver and make sure that you have configured the driver appropriately. If you are using PDT mode, check the content of your PDF file, especially if you have customized it. Depending on the problem you are having, you might need to run a link-line trace as described in the Administration Tools online help.

3. **API**. The cause could be in an application that uses an API, or the problem could be in Personal Communications. Identify which of these is causing the problem. The API trace, described in the Administration Tools online help.
4. **Other Personal Communications Functional Area**. Make sure that you can explain why you think that the source of the problem is in Personal Communications.

## Problem Reporting (PR)

If your problem still persists even at this stage, and if you think that the source is in Personal Communications, report the problem to IBM.

When you do this, you need to provide the information you obtained through the problem determination (PD) and problem-source identification (PSI) processes:

1. PD information includes:

   Symptoms
   Environment
   Type of problem
   Problem area
   Problem re-creatability and re-creation procedure

2. PSI information includes:

   OIA messages or error messages (if any)

   Key factors related to the problem

   Personal Communications dump information (PCSUSER.INF) (See the Administration Tools online help for more details.)

   Link-line trace. (See the Administration Tools online help for more details.)

   PDF file (for printer problems in PDT mode)

   API trace if the problem is API-related. (See the Administration Tools online help for more details.)

   PCSDIAL.LOG if the problem occurred while dialing. (This log can be created by re-creating the problem after adding "-p" following parameter **Adffilename=** in the workstation profile.)

   Spool file (for printer problems)

## Contacting IBM

This section lists several ways you can reach IBM for various reasons. Depending on the nature of your problem or concern, we will ask you to be prepared to provide us with some information to allow us to serve you better.

If you have a technical problem, please take the time to review and carry out the actions suggested by the online *Information Notebook* and the *License Information* booklet. Use your local support personnel before contacting IBM. Only persons with in-depth knowledge of the problem should contact IBM; therefore, support personnel should act as the interface with IBM.

If you determine that you need to contact IBM, refer to your *License Information* booklet for a detailed description of the services IBM provides. This booklet also contains information on how to contact IBM.

## Other Ways to Contact IBM

Information about Personal Communications is available from the following sources:

### The PCOMM CFORUM

This forum is monitored by Personal Communications users, and, when possible, by Personal Communications developers.

- In the U.S., access the PCOMM CFORUM on the OS2BBS bulletin board via TalkLink.

  If you do not have access to TalkLink/OS2BBS, call 1-800-547-1283 (U.S.A. only). TalkLink administration personnel will send you a registration package that lists the available features and the current subscription rates. You should receive the registration package approximately 2 weeks after calling. When you return the necessary documents, TalkLink administration personnel will send you a welcome package that contains the software you need to access TalkLink/OS2BBS.

  IBMLink customers can register via SMARTLink's new TalkLink selection.

- In Canada, access the PCOMM CFORUM via IBMLink.
- In Australia, to access the PCOMM CFORUM:

  1. Type NEWMENU to access the pilot menus.
  2. Select FORUMS.

- In Europe, the Middle East, and Africa, use DIAL-IBM to access the PCOMM CFORUM via the CONFER application on OS2BBS.

  If you do not have access to OS2BBS, contact your country DIAL-IBM help desk.

### Internet

IBM Personal Software Services has a home page on the Internet, which has general product information as well as service information about APAR fixes. Using an Internet browser such as IBM Web Explorer, go to the following URL: http://ps.software.ibm.com/www/usa/ps/services/

IBM Networking Software has a home page on the Internet that also has general product information and service information. Using an Internet browser such as IBM Web Explorer, go to the following URL: http://ps.software.ibm.com/www/usa/ps/services/

### IBM Personal Communications Online Customer Support

Access this electronic bulletin board to view information APARs and to obtain APAR fixes. To request that an APAR fix be made available, call 1-800-992-4777 (U.S.A. only).

To access the electronic bulletin board:

- Dial 919-543-8200 (country code: 001 from outside the U.S.A.).
- Use protocol N81.
- Follow the instructions. Entering your first name and last name registers you the first time you use the facility.

### The IBM Software Solutions Center

From the U.S.A., call 800-992-4777. From Canada, call 800-465-2222. Outside the U.S.A., call IBM International Information at 800-426-1774.

### The OS/2 Developer's Assistance Program

Call 407-982-6408 (country code: 001 from outside the U.S.A.).

## Problem Determination

# Chapter 3. Printing

You can use Personal Communications to print from display or printer sessions.

From display sessions, you can print all (**Print Screen**) or part (**Trim Print**) of the screen of your session window on a workstation printer.

From printer sessions, you can direct printing from an S/390, AS/400, or S/3X system to a workstation printer.

Configure a printer session to designate a workstation printer as a system printer that will use either the printer definition tables (PDTs) provided with Personal Communications or the OS/2 printer drivers.

Use PDT files for Personal Communications to print files based on printer control information, such as control codes and the printer output format, defined in the PDT.

Use OS/2 printer drivers for Personal Communications to print files based on printer setup parameters, such as scaling, duplex options, and page orientation, that you define in **Printer Setup**.

When you configure a printer session, refer to the online help for detailed information for each parameter.

From a PC/3270 session, you can also use the ZipPrint utility provided in the Productivity Tools folder to print PROFS or OfficeVision (OV) notes, calendars, documents, CMS files, XEDIT workspaces, and host session screens. See the online help for more information. For considerations and restrictions on printing, refer to Chapter 12 and Chapter 17. The Information notebook also describes configuring for printing.

## Printing from Printer Sessions

Personal Communications lets you direct printouts from both AS/400 and S/390 hosts to your workstation. When you use a printer session, your workstation printer becomes a system printer.

To use a printer session, configure your workstation for a printer session. Refer to the online help for more information when configuring the printer session.

The pop-up keypad on the PC/3270 printer session screen mimics the operation of the printer operation panel. Make all settings from the Use the printer session pop-ups rather than the workstation printer operation panel.

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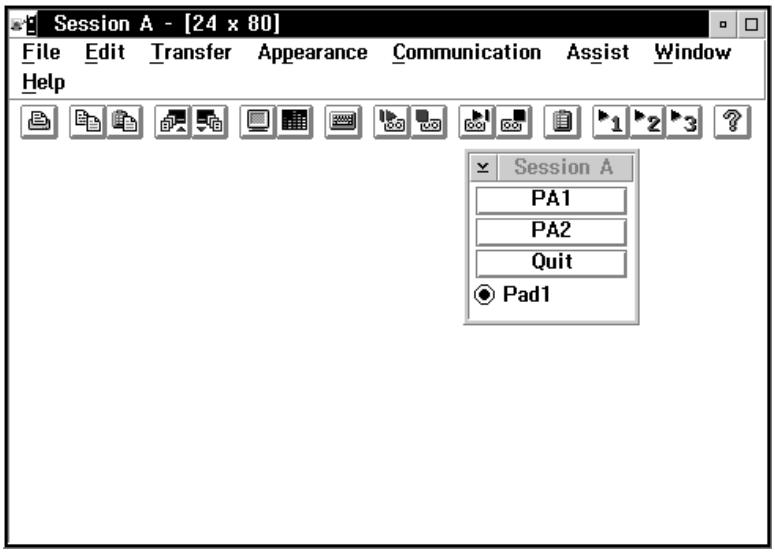


The window for status on the PC400 printer session screen mimics the operation of the system printer operation panel, which displays the status of the printer session and can be used to start, stop, or cancel the current job. Use the Printer Session Status dialog box rather than the workstation printer operation panel.

## Printing from Display Sessions

When display sessions are used, the entire contents of the session window (**Print Screen**) or only part of the session window (**Trim Print**) can be printed.

To print only part of the session window, drag the mouse to create a trimming rectangle around the part of the dialog box you want to print and then select **Print Screen** from the File pull-down menu.

## PC/3270 Printer Functions

## Printing Attribute Bytes

You need to change your workstation profile to specify how attribute bytes should be printed with LU 3 and Print Screen. For example, to prevent a space character from being inserted between two fields when the second character has a reverse attribute, add one of the following parameters to the printers keyword in your profile:

```
[printers]
FAPosDraw=NONE
     or
FAPosDraw=HERE
     or
FAPosDraw=PREV
```

Where:

**NONE** Prints a space character using the default attribute. This is the default.
**HERE** Prints a space character using the attribute that is specified by the attribute byte.

**PREV** Prints a space character using the attribute that was used for the field immediately before the attribute character.

For example: if you have the following series of field attributes and the default attribute for the first string is “ABC”:

"ABC"+Attribute Byte(Underline)+"DEF"+Attribute Byte(Underline)+"GHI"

The print output varies, depending on the setting of FAPosDraw, as follows:

FAPosDraw=NONE

**ABC DEF GHI**

FAPosDraw=HERE

**ABC DEF GHI**

FAPosDraw=PREV

**ABC DEF GHI**

**Note:** Add the **printers** keyword if it does not exist in your workstation profile.

## Printing the Underline Attribute

The underline attribute cannot be printed with some fonts because of a system restriction. If you are not using PDT mode, select another font and then try printing again.

To select another font, complete these steps:

1. Select **File** from the menu bar and then select **Printer Control** and **Text**.
2. Select a generic font; that is, one not shown in brackets ([ ]) from the Font list and then select **OK**.

## Printing the Reverse Attribute

The reverse attribute cannot be printed with some fonts because of a system restriction. To solve this problem, add the following line to the workstation profile:

[printers]
REVERSE=N

After you make this change, all reversed characters print as normal characters.

**Note:** Add the **printers** keyword if it does not exist in your workstation profile.

## Scalable APL Font Support on Printers

When APL characters are printed, Personal Communications uses the APL fonts provided for ***displays*** because special APL characters are not provided for printer devices. Normally, display devices have lower resolution than printers. Therefore, in some cases, and especially when using page printers with high resolution, APL characters print rather small.

To print larger APL characters, install a scalable APL font. To do so, complete these steps:

1. Open the OS/2 System folder.
2. Open the System Setup folder.

3. Start the Font Palette.
4. Select **Edit font...**
5. Select **Add...**.
6. Insert the Personal Communications diskette that contains APL2.AFM and APL2.PFB into the diskette drive (Personal Communications diskette 7 in this release), then select **Add...**.
7. Select **APL2.AFM** in the Font files list box and then select **Add**.

   **Note:** If you are using network printers, install the scalable APL font on the print servers.

## Setting Up the Printer

Select **File** from the menu bar and then select **Printer Setup** to change the printer to be used for both display and printer sessions and to set specific information (forms orientation, resolution, and so on) for each printer driver.

Select **File** from the menu bar and then select **Print Screen** to print the contents of the display session.

Personal Communications can perform printing functions with the OS/2 printer drivers or with the printer definition table (PDT) files provided by Personal Communications.

## Printer Definition Table (PDT) Files

Printer Definition Table (PDT) files define the transfer of characters and control codes to a printer, as well as the printer output format. If a PDT file is selected, the OS/2 printer driver does not generate any data for the output. Instead, Personal Communications generates print output based on printer control information defined in the PDT file.

**Printer driver setup for using a PDT file**

When you use a PDT file, you might not get the expected printout if the printer driver you selected uses the data translation function for base printing. In this case, select the **IBMNULL** driver in the printer object setting.

If the **Use PDT** option is used, the PDT file to be used at printing can be selected.

The PDT files provided by Personal Communications and the corresponding printers are listed in the following table:

| PDT Name (Personal Communications) | Printer Name/Model |
|---|---|
| IBM3812.PDF | IBM 3812 Page Printer Model 2 |
| IBM3816.PDF | IBM 3816 Page Printer II |
| PRN3812.PDF | IBM 3812 Page Printer Model 2<br>IBM 3816 Page Printer II |
| IBM38521.PDF | IBM 3852 Color Printer |
| PRN38521.PDF | IBM 3852 Color Printer |

| PDT Name (Personal Communications) | Printer Name/Model |
|---|---|
| IBM38522.PDF | IBM 3852 Color Jetprinter Model 2 |
| PRN38522.PDF | IBM 3852 Color Jetprinter Model 2 |
| IBM4019.PDF | IBM 4019 LaserPrinter<br>IBM 4019 LaserPrinter E<br>IBM 4029 Laser Printer |
| PRN4019.PDF | IBM 4019 LaserPrinter<br>IBM 4019 LaserPrinter E<br>IBM 4029 Laser Printer |
| IBM4072.PDF | IBM 4072 ExecJet Printer |
| PRN4072.PDF | IBM 4072 ExecJet Printer |
| IBM4201.PDF | IBM 4201 Proprinter<br>IBM 4201 Proprinter II<br>IBM 4201 Proprinter III, Model 3<br>IBM 2380 Personal Printer Series 2 |
| IBM4202.PDF | IBM 4202 Proprinter XL Model 1<br>IBM 4202 Proprinter XL Model 2<br>IBM 4202 Proprinter III XL Model 2<br>IBM 4202 Proprinter III XL Model 3<br>IBM 4216 Personal Pageprinter<br>IBM 2381 Personal Printer Series 2 |
| PRN4202.PDF | IBM 4201 Proprinter<br>IBM 4201 Proprinter II<br>IBM 4201 Proprinter III Model 3<br>IBM 4202 Proprinter XL Model 1<br>IBM 4202 Proprinter XL Model 2<br>IBM 4202 Proprinter III XL Model 2<br>IBM 4202 Proprinter III XL Model 3<br>IBM 4207 Proprinter X24<br>IBM 4207 Proprinter X24E<br>IBM 4208 Proprinter XL24<br>IBM 4208 Proprinter XL24E<br>IBM 4216 Personal Pageprinter<br>IBM 2380, 2381, 2390, 2391 printers |
| IBM4207.PDF | IBM 4207 Proprinter X24<br>IBM 4207 Proprinter X24E<br>IBM 2390 Personal Printer Series 2 |
| IBM4208.PDF | IBM 4208 Proprinter XL24<br>IBM 4208 Proprinter XL24E<br>IBM 2391 Personal Printer Series 2 |
| IBM5152.PDF | IBM 5152 Graphics Printer Model 2 |
| PRN5152.PDF | IBM 5152 Graphics Printer Model 2 |
| IBM5201.PDF | IBM 5201 Quietwriter Printer Model 1<br>IBM 5201 Quietwriter Printer Model 2 |
| IBM5202.PDF | IBM 5202 Quietwriter III<br>IBM 5204 Quietwriter Printer |
| PRN5202.PDF | IBM 5201 Quietwriter Printer Model 1<br>IBM 5201 Quietwriter Printer Model 2<br>IBM 5202 Quietwriter III<br>IBM 5204 Quietwriter Printer |

| PDT Name (Personal Communications) | Printer Name/Model |
|---|---|
| IBM5216.PDF | IBM 5216 Wheelprinter |
| PRN5216.PDF | IBM 5216 Wheelprinter |
| IBM5223.PDF | IBM 5223 Wheelprinter E |
| PRN5223.PDF | IBM 5223 Wheelprinter E |
| HPLJII.PDF | HP LaserJet II<br>HP LaserJet IID<br>HP LaserJet IIP |
| ACTLZR2.PDF | Epson Action Laser2 LQ2500 mode |
| BJ300.PDF | Canon BJ300 CAPSL mode |
| LBP4.PDF | Canon LBP4 ISO mode |
| LQ870.PDF | Epson LQ870/1170 |

The PDT files provided by PC400 and the corresponding printers are listed in the table below:

| PDT Name (PC400) | Printer Name/Model |
|---|---|
| IBM3812.PDT | IBM 3812 Page Printer Model 2 |
| IBM3816.PDT | IBM 3816 Page Printer II |
| IBM4019.PDT | IBM 4019 LaserPrinter<br>IBM 4019 LaserPrinter E<br>IBM 4029 LaserPrinter |
| IBM4070.PDT | IBM 4070 IJ |
| IBM4070E.PDT | IBM 4070 IJ - Epson Mode |
| IBM4212.PDT | IBM 4212 Pro Printer 24P |
| IBM4072.PDT | IBM 4072 ExecJet Printer |
| IBM4201.PDT | IBM 4201 Proprinter<br>IBM 4201 Proprinter II<br>IBM 4201 Proprinter III Model 3<br>IBM 2380 Personal Printer Series 2 |
| IBM4202.PDT | IBM 4202 Proprinter XL Model 1<br>IBM 4202 Proprinter XL Model 2<br>IBM 4202 Proprinter III XL Model 3<br>IBM 4216 Personal Pageprinter<br>IBM 2381 Personal Printer Series |
| IBM4207.PDT | IBM 4207 Proprinter XL24<br>IBM 4207 Proprinter XL24E<br>IBM 2390 Personal Printer Series 2 |
| IBM4208.PDT | IBM 4208 Proprinter X24<br>IBM 4208 Proprinter X24E<br>IBM 2391 Personal Printer Series 2 |
| IBM4226.PDT | IBM 4226-302 Printer |
| IBM5152.PDT | IBM 5152 Graphics Printer Model 2 |
| IBM5182.PDT | IBM 5182 Color Printer |

| PDT Name (PC400) | Printer Name/Model |
|---|---|
| IBM5201.PDT | IBM 5201 Quietwriter Printer Model 1<br>IBM 5201 Quietwriter Printer Model 2 |
| IBM5202.PDT | IBM 5202 Quietwriter III<br>IBM 5204 Quietwriter Printer |
| IBM5216.PDT | IBM 5216 Wheelprinter |
| IBM5223.PDT | IBM 5223 Wheelprinter E |
| IBM38521.PDT | IBM 3852 Color Printer |
| IBM38522.PDT | IBM 3852 Color Jetprinter Model 2 |
| ACTLZR2.PDT | Epson Action Laser2 LQ2500 mode |
| CPQPM20.PDT | Compaq** PageMarq 15 - HP Mode<br>Compaq PageMarq 20 - HP Mode |
| EAP2250.PDT | Epson AP2250 |
| EAP3250.PDT | Epson AP3250 |
| EAP5500.PDT | Epson AP5000<br>Epson AP5500 |
| EFX850.PDT | Epson FX850 |
| EFX1170.PDT | Epson FX1170 |
| EFX5000.PDT | Epson DFX5000<br>Epson DFX8000 |
| ELQ510.PDT | Epson LQ510 |
| ELQ860.PDT | Epson LQ860 |
| ELX810.PDT | Epson LX810 |
| ELQ1070.PDT | Epson LQ570<br>Epson LQ1070 |
| ELQ2550.PDT | Epson LQ2550 |
| EPLPCL4.PDT | Epson EPL7000 - HP Mode |
| EPLPCL5.PDT | Epson EPL8000 - HP Mode |
| ESQ1170.PDT | Epson SQ1170 |
| LQ870.PDT | Epson LQ870/1170 |
| HPLJII.PDT | HP LaserJet Series II**<br>HP LaserJet Series II D<br>HP LaserJet Series II P |
| HPLJIII.PDT | HP LaserJet Series III<br>HP LaserJet Series IIIP<br>HP LaserJet Series IIISi |
| HPLJIIID.PDT | HP LaserJet Series IIID<br>IBM 4039 LaserPrinter - HP Mode |
| HPLJ4.PDT | HP LaserJet 4 |
| HPDJ550C.PDT | HP Desk Jet 550C |
| HPDSKJT.PDT | HP Desk Jet 500 |
| BJ300.PDT | CANON BJ300 CAPSL mode |
| LBP4.PDT | CANON LBP4 ISO mode |

| PDT Name (PC400) | Printer Name/Model |
|---|---|
| NEC6300.PDT | NEC P6200 Pinwriter<br>NEC P6300 Pinwriter |
| PANLBP4.PDT | Panasonic** KX-P4410 - HP Mode<br>Panasonic KX-P4420 - HP Mode<br>Panasonic KX-P4450i - HP Mode |
| PANLBP5.PDT | Panasonic KX-P4430 - HP Mode<br>Panasonic KX-P4451 - HP Mode |
| PAN1123.PDT | Panasonic KX-P1123 - Epson Mode |
| PAN1124.PDT | Panasonic KX-P1124 - Epson Mode<br>Panasonic KX-P1624 - Epson Mode |
| PAN1180.PDT | Panasonic KX-P1180 - Epson Mode<br>Panasonic KX-P1180i - Epson Mode<br>Panasonic KX-P1191 - Epson Mode |
| PAN1695.PDT | Panasonic KX-P1695 - Epson Mode |
| PAN2123.PDT | Panasonic KX-P2123 - Epson Mode |
| PAN2124.PDT | Panasonic KX-P2124 - Epson Mode |
| PAN2180.PDT | Panasonic KX-P2180 - Epson Mode |
| PAN2624.PDT | Panasonic KX-P1124i - Epson Mode<br>Panasonic KX-P1654 - Epson Mode<br>Panasonic KX-P2624 - Epson Mode |

When the PDT files for the printer being used do not exist, you can create your own PDT files. To create PDT files, create printer definition files (PDFs) and then convert them into PDT files.

PDFs are saved to the **PDFPDT** subdirectory in the **PCOMOS2.** directory.

For an explanation of how to create PDFs, refer to the *Information Notebook*.

**Using the PFT Migration Utility**

You can migrate a PC/Support 400 PFT to a PDF by using this utility. For details on the PFT Migration Utility, refer to “PFT Migration Utility” on page 13-18.

# Chapter 4. Transferring Files

Personal Communications File Transfer enables one or more files to be transferred between a host system and workstation at the same time.

For Personal Communications, transfer types and translation tables can be defined in advance to facilitate user processing.

**PC400 Information**

Before files are sent or received, *Personal Communications Tools* (PC400 Program Package with quarter-inch tape, part number 85G8665) must be installed on the host system.

*File Transfer*, described in this chapter, is quite different from the PC400 function, *Data Transfer*, described in Chapter 15. The main differences are listed here:

| Type of Transfer | Products required on an AS/400 system | Access Method | Sending and receiving unit | Type of connection to an AS/400 system |
|---|---|---|---|---|
| File Transfer | Personal Communications Tools (APVAFILE) | Transfer menu in session window | Entire file | Display session |
| Data Transfer | PC Support/400 V2R2 or V2R3 or OS/400 V3R1 or later[1] | Data Transfer icon | Field, record, or file in a database | Router session |
| **Note 1:** OS/400 provides the host transaction program for Data Transfer. | | | | |

## Sending Files to the Host System

For PC400, when a file is transferred from a workstation to the host system, the specified file or member is automatically created if its name cannot be found in the host system.

At this time, the default parameters for the **CL** command executed in the host system are used as the attributes for this file or member. Therefore, preparing a file on the host system in advance is recommended for storing attributes.

For details of the parameters used as the file attributes specified with the **CL** command, see *AS/400 Programming: Control Language (CL) Reference Guide Version 2*.

To send a file from a workstation to the host system, complete these steps:

1. Sign on to the host system.
2. Select **Transfer** from the menu bar of the session window.
3. Select the host system you use in the Transfer pull-down menu.
4. Select **Send File To Host** or the **Send** button on the tool bar.

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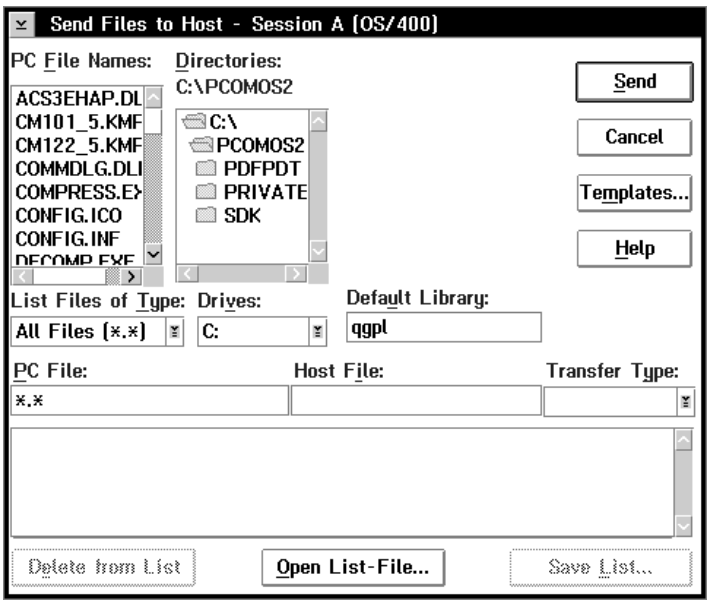
The Send File To Host window appears.




Using List File

Select **Open List-File**; then select the list to be used for transfer. (For details of how to create list files, see 4-4.)

5. Specify the name of the PC file to be sent to the host system.

   Select the name from the list box, or enter the file name in the **PC File** text box. The selected file name is displayed in the list box.

   **Easy mouse operation**

   Move the cursor to the name of the file to be transferred in the **PC File** list box. Double-click the left mouse button. The workstation automatically starts transferring the selected file to the host system. At the same time, the host file name and transfer type are automatically assigned by means of a template.

6. Enter a host file name assigned after the transfer; then select the transfer type.

   If a template is provided, the host file name and the generated transfer type appear automatically. To create a template, refer to “Creating a Template” on page 4-5.

   To specify or change the host file name, highlight the host file name in the list box; then enter the desired file name in the **Host File** text box.

   To specify or change the transfer type, highlight the transfer type in the list box; then select the desired transfer type in the **Transfer Type** drop-down list box. For transfer type, refer to “Setting Transfer Types” on page 4-9.

7. Select **Send**.

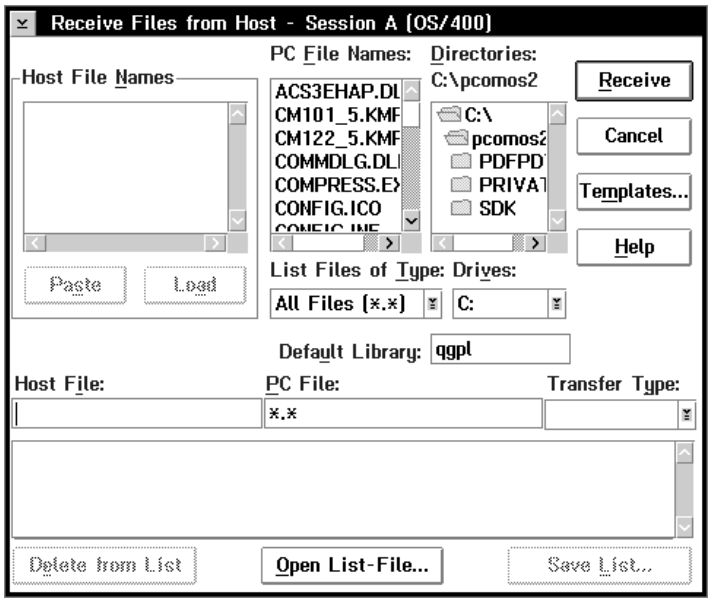
   The file is sent to the host system. The send status appears in the Send a File Status window. After the file has been sent, the session window appears.

## Receiving Files from the Host System

To transfer a file from the host system to a workstation, complete these steps:

1. Sign on to the host system.
2. Select **Transfer** from the menu bar of the session window.
3. Select the host system you use in the Transfer pull-down menu.
4. Select **Receive File from Host** or the **Receive** button from the tool bar.

   The Receive File from Host window appears.




Using List Files

Select **Open List-File**; then select the list to be used for transfer. (For an explanation of how to create list files, see page 4-4.)

5. Specify the name of the host file to be transferred. Enter the name in the **Host File** text box, or specify it by selecting **Paste** or **Load** as follows.

   Using the **Paste** button

   Selecting **Paste** after copying the host file names into the OS/2 clipboard displays the file name in the **Host File Names** list. Select the desired file from the list.

   Using the **Load** button

   If an OS/2 application program that uses Dynamic Data Exchange (DDE) is designed to provide file lists to the workstation, the program can be used for loading the file lists. Select **Load**; then select the desired file from the file list provided by the application program.

   For PC400, to change the name of the library containing the host file to transfer, enter the host file name in the **Default Library** text box.

6. Enter a workstation file name assigned after the transfer in the text box, or select it from the list. After that, select the transfer type from drop-down list box.

If a template is provided, the workstation file name and the generated transfer type appear automatically. The selected file name is displayed in the list box. To create a template, refer to “Creating a Template” on page 4-5.

To specify or change the workstation file name, highlight the workstation file name in the list box; then enter the desired file name in the **PC File** text box.

To specify or change the transfer type, highlight the transfer type in the list box; then select the desired transfer type in the **Transfer Type** drop-down list. For the transfer type, refer to “Setting Transfer Types” on page 4-9.

7. Select **Receive**.

   The file is received. The receive status appears in the Receive a File Status window. After the file has been received, the session window appears.

## Using List Files

You can transfer a large number of files as a single group. If the same files are transmitted frequently, the file list can be saved in a send/receive list file for reuse.

A list file is common to both transmission and reception. The default list file extension is **.SRL**. (To change the extension, see page 4-13.

## Creating List Files

To create a list file, complete these steps:

1. Select **Transfer** from the menu bar of the session window.
2. Select **Send File to Host** or **Receive File from Host**.

   The Send File to Host or Receive File from Host window appears.
3. Select a file to be transferred from the **Host File Name** or **PC File Name** list box using either of the following two methods:

   Select the desired file name in the **PC file name** list box.

   Specify the file name in the **PC file** text box. For more information, refer to “Sending Files to the Host System” on page 4-1 or “Receiving Files from the Host System” on page 4-3.

   Information on the selected file appears in the lower part of the window.
4. After all desired files have been selected, select **Save List**.

   The Save File-Transfer List File as window appears.
5. Enter a list name, and select **OK**.

   The list file is saved, and the window is closed.

## Editing Lists

To edit the contents of a previously created list, complete these steps:

1. As explained in step 1 of the “Creating List Files” procedure, display the Send File to Host or Receive File from Host window.
2. Select **Open List-File**.

   The Open File-Transfer List File window appears.
3. Select the name corresponding to the list file to be edited; then select **OK**.

4. The contents of the selected list appear in the Send File to Host or Receive File from Host window.
5. Edit the contents of the list file.

   Changing the contents of a list

   Select a file to be changed from the list, and overwrite the items to be changed in the text box.

   Deleting a file from the list

   Select a file to be deleted from the list; then select **Delete from List**.

   Adding a file to the list

   Select a file to be added from the list of host or workstation files, or enter the name of the file to be added in the text box.
6. After the contents have been edited, select **Save List**.

   The Save File-Transfer List File as window appears.
7. Enter a list name; then select **OK**.

   The list file is saved, and the window is closed.

## Creating a Template

A *template* is a rule used by the workstation to automatically generate a workstation or host file name and transfer type when a file to be sent or received is selected.

Up to 32 templates can be created. They are automatically numbered from 1 to 32.

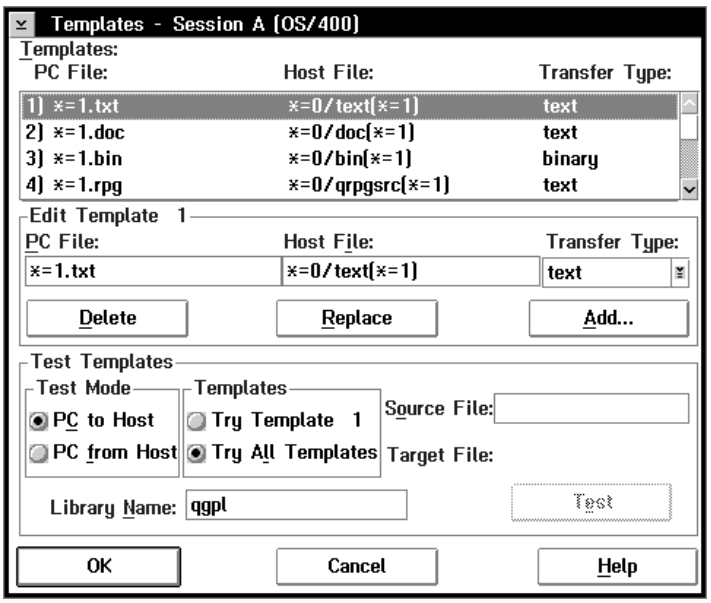
When the user specifies a file to be transferred, the workstation retrieves the templates, starting from template 1. It uses the first matched template to generate a name for the transferred file.

To use a template, complete these steps:

1. Select **Transfer** from the menu bar.
2. Select the host system you use in the Transfer pull-down menu.
3. Select **Send File to Host** or **Receive File From Host**.

   The Send File to Host or Receive File from Host window appears.
4. Select **Templates**.

   The Templates window appears.




(The contents of the window depend on the connected host system.)

## Adding Templates

The list box for the Templates window lists the currently registered templates. The numbers on the left side of the list are the template numbers.

To add a template, complete these steps:

1. Select a template to be used for generation from the list box.

   The contents of the selected template appear under the list box.

2. Change the workstation and host file names by overwriting them; then select the transfer type. (For details of the transfer types, see “Setting Transfer Types” on page 4-9.)

3. Select **Add**.

   The window for determining where in the list to display a template to be added appears.

4. Select a template number. Determine whether to display the template to be added before or after the template having that number. Select **OK**.

   The generated template added to the list appears.

## Replacing and Deleting Templates

To change the contents of a currently registered template, or to delete a template, complete these steps:

1. Select the template to be changed or deleted from the template list box.

   The contents of the selected template appear under the list box.

2. To change the contents, overwrite the changed part; then select **Replace**.

   To delete a template, select **Delete**.

   The selected template is changed or deleted, and the contents of the template list box are changed.

## Testing Templates

To test the contents of an added or changed template without actually transmitting any files, complete these steps:

1. Select a template to be tested from the template list box.

   The number of the selected template appears in the **Test Templates** field in the lower part of the window.

2. Select or enter data for the following items:

   **Test mode** Determine which mode is to be used for the test: the mode in which a file is transmitted from a workstation to the host system, or the mode in which a file is transmitted from the host system to a workstation.

   **Templates** Determine which templates to test: only the template selected in step 1 or all registered templates.

   **Source file** Enter the name of the file to be tested.

3. Select **Test**.

   Using the selected template for **Target File** displays an automatically created file name assigned after the transfer.

**Note:**

Testing templates does not transfer the actual files.

## Import/Export (PC/3270 Only)

*Import/Export* is an office system communication program. It is one of the application programs executed under the IBM Customer Information Control System (CICS).

Executing the *Import/Export* command loads a module to be transferred into memory. Afterward, you can call either Import or Export from the menu on the host screen and run it.

The workstation receives two files using Export. One is the received file, and the other is the *interchange document profile* (**.IDP**), which contains document header information.

When you send a file by using Import, an IDP file that contains transmission information is required. Before importing a file, you can create an IDP file. If you start to import without creating an IDP file, an IDP file is created automatically.

For an explanation of how to create IDP files, refer to “Creating IDP Files” on page 4-8.

## Transferring Files Using Import/Export

To transmit files using Import/Export, complete these steps:

1. Verify that the window of the host session on which files are to be transferred is active and ready for file transfer.
2. Select **Transfer** from the menu bar of the session window and then select **Import/Export**.

   The Import/Export Status icon appears.
3. Select **Import** or **Export** from the host application menu.
4. Specify the host and workstation file names of the file to be transferred, and select Import or Export.

   When Import or Export starts, the **Import/Export Status** icon is maximized, and the Import/Export Status window appears.

   After the file has been transferred, the window is closed.

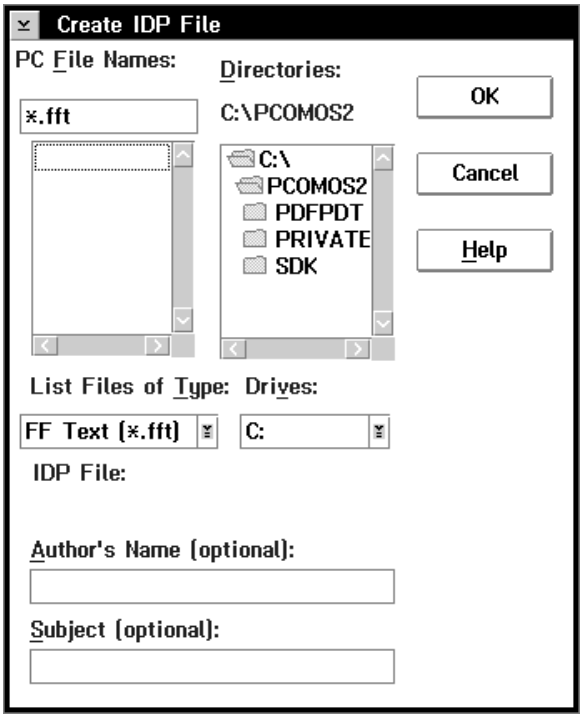
## Creating IDP Files

To send a file to the host system using Import, an IDP file having information about the file is required. To import a file, create an IDP with **Create IDP File**.

To create an IDP file, complete these steps:

1. Select **Transfer** from the menu bar of the session window and then select **Setup**.
2. Select **Create IDP File** from the submenu.

   The Create IDP File window appears.




3. Enter the name of an IDP file to be created in the text box, or select it from the list.

**Note:** Specify the IDP file as the same file name to be transferred, and the extension (***.IDP**).

4. Select **OK**.

   The specified value is saved to an IDP file, and the Create IDP File window is closed.

## Setting Transfer Types

Transfer types define the option information used for controlling File Transfer. Up to 16 transfer types can be defined for each host system. Text, binary, and append are initially set as the transfer types.

Selecting the **Transfer-Type Definition** command enables setting of the following items:

### PC400 File Options

The next table lists the file options and corresponding modes and contents of the data exchange in which the options can be used.

| File Option | Conversion Details |
|---|---|
| **ASCII** | Converts 1-byte workstation codes to EBCDIC codes when a file is sent.<br>Converts EBCDIC codes to 1-byte workstation codes when a file is received. |
| **CRLF** | Converts codes as follows when a file is sent:<br>Does not remove CRLF (X'0D0A') from the end of each line. The code is treated as a delimiter for each record.<br>Removes EOF (X'1A') from the end of the file.<br>Converts codes as follows when a file is received:<br>Adds CRLF (X'0D0A') to the end of each line.<br>Adds EOF (X'1A') to the end of the file. Removes EOF from the existing file, and appends EOF to the end of the added file when APPEND is specified. |
| **APPEND** | Appends the sent file to the existing host file.<br>Appends the received file to the existing workstation file. |
| **SRC** | When a file is sent with this option specified, the host file, the receiver, is recognized as a **source physical file**. With this option unspecified, it is recognized as a **database physical file**.<br>When a file is received, this option is ignored. The host application programs determine the type of the received file. |

## PC/3270 File Options

The file options that can be used depend on the type of the connected host system, and the host code page selected when the workstation is configured. Table 4-1 lists the file options and the host systems and modes in which the options can be used.

| File Option | Host System | Conversion Details |
|---|---|---|
| **ASCII** | VM/CMS<br>MVS/TSO<br>CICS | Converts 1-byte workstation codes to EBCDIC codes when a file is sent.<br>Converts EBCDIC codes to 1-byte workstation codes when a file is received. |
| **CRLF** | VM/CMS<br>MVS/TSO<br>CICS | Converts codes as follows when a file is sent:<br>Does not remove CRLF (X'0D0A') from the end of each line. The code is treated as a delimiter for each record.<br>Removes EOF (X'1A') from the end of the file.<br>Converts codes as follows when a file is received:<br>Adds CRLF (X'0D0A') to the end of each line.<br>Adds EOF (X'1A') to the end of the file. Removes EOF from the existing file, and appends EOF to the end of the added file when APPEND is specified. |
| **APPEND** | VM/CMS<br>MVS/TSO | Appends the sent file to the existing host file.<br>Appends the received file to the existing workstation file. |

*Table 4-1. File Options for Transfer Files*

## PC400 Logical Record Length (LRECL)

Enter the logical record length (host record byte count), used for sending a file to the host system, in the **LRECL** text box. The maximum value is 32,766.

This item is valid only when there are no files in the host system. When a file exists in the host system, the value specified in this item is ignored and the file is sent using the logical record length of the file in the host system.

## Record Format

*Record Format* is valid only for VM/CMS and MVS/TSO. It is valid if APPEND is not specified for file transmission. Any of the following items can be selected:

Default value
Fixed (fixed length)
Variable (variable length)
Undefined mode (for MVS/TSO only)

If the default value is selected, the record format is selected automatically by the host system.

Specifying **Variable** for VM file transfer enables host disk space to be used efficiently.

## Logical Record Length (LRECL)

*Logical record length* is valid only for VM/CMS and MVS/TSO. It is valid if APPEND is not specified for file transmission.

Enter the **logical record length** to be used (host record byte count) in the **LRECL** text box. If **Variable** and **Undefined Mode** are specified as the record format, the logical record length is the maximum record length within a file. The maximum value is 32,767.

The record length of a file sent from a workstation to the host system might exceed the logical record length specified here. If so, the host file transfer program divides the file by the logical record length.

To send a file containing long records to the host system, specify a sufficiently large logical record length.

Because the record length of a workstation file exceeds the logical record length, a message does not appear normally if each record is divided. To display a message, add the following specification to the **[Transfer]** item of the workstation profile:

```
DisplayTruncateMessage = Y
```

### TSO Allocation Parameter (MVS/TSO)

*TSO Allocation Parameter* is valid only for MVS/TSO. It is valid when **APPEND** is not specified for file transmission. The following items can be specified:

**[Allocation Amounts]**

**Allocation amounts**
Enter the number of tracks or cylinders allocated to this file transfer.

**Secondary**
If the primary allocation is not sufficient for the entire file transfer, enter additional storage capacity allocated to the file transfer.

**[Allocation Units]** Ask your system manager whether to use TRACKS, CYLINDERS, or AVBLOCK as the unit.

| | |
|---|---|
| **TRACKS** | Specify this parameter to allocate a host file by track. |
| **CYLINDERS** | Specify this parameter to allocate a host file in units of cylinders. |
| **AVBLOCK** | Specify this parameter to allocate a host file in units of blocks. |

**[Block size]** This item is used only to create a new data set. Enter the block size of a new host data set, in bytes, in the text box. If this item is omitted, the workstation assumes the value that appears in the **Logical Record Length** box. The maximum value is 32,767. If AVBLOCK is selected, the block size is the block size of the new data set.

### Additional Options

The required host command options can be entered in the **Additional Options** text box.

## Adding or Changing Transfer Types

To add or change transfer types, complete these steps:

1. Select **Transfer** from the menu bar of the session window and then select **Setup**.
2. Select **Define Transfer Types** from the submenu.

   The Define Transfer-Types window appears.
3. Enter transfer-type names in the **Transfer-Type Names** text box, or select them from the list.
4. Select or enter the required items.

To add transfer types, select **Add**. To replace them, select **Replace**. To delete transfer types, after selecting them from the transfer-type name list, select **Delete**.

5. After the transfer types have been added, replaced, or deleted, select **OK**.

   After you have selected the transfer types, the Define Transfer-Types window is closed.

## Setting Transfer Options

The following sections describe the file transfer options you can define.

## File Transfer Timeout

The interval during which the workstation waits for a response from the host system can be entered (in seconds). If the host system does not respond, transfer is canceled and an error message appears. You can specify a number from 20 to 65535. The default is 30. Specify an appropriate value such that the error message does not appear too early.

If a packet size is relatively large for low-speed lines, such as SDLC or asynchronous communication, specify 150 seconds.

## Extension for PC400 List Files

You can specify the default extension for **List** used for File Transfer. Up to three alphanumeric characters can be entered. The default value is **.SRL**.

## Status Window

The method of displaying the File Transfer progress status can be selected. Select one of the following option buttons. The default value is **Show in Session**.

**Show in Session** When File Transfer starts, the status window appears. The name of the file being transferred and the transfer progress appear.

**Show in icon** When File Transfer starts, the status icon appears on the screen. When the status icon is restored, the status window appears.

## PC Code Page

When a file is transferred, EBCDIC codes are converted to 1-byte workstation codes, and vice versa. A default value is 437.

## Host Command

The host command to be called when file transfer starts can be entered. If nothing is entered in this text box, **APVAFILE** is used.

## File Transfer Directory

The directory that appears first in the Send File to Host or Receive File from Host window can be specified.

## Clearing Sessions before Transfer (PC/3270 only)

Before a file is transferred, whether to transfer a Clear command to the host system can be specified. Select any of the following option buttons:

**Default value** The Clear command is not sent.

**Yes** Before a file is transferred, a Clear command is sent.

**No** The Clear command is not sent.

## File Transfer Packet Size (PC/3270 only)

The amount of memory (in bytes) used by the workstation for transmission and reception. If a large value is entered, a file is transferred more quickly, but the memory overhead is larger. The range you can set is from 256 to 32,000. The default value is 2,500.

## Extension for PC/3270 List Files

The default extension for **List** used for file transfer can be specified. Up to three alphanumeric characters can be entered. The default value is **.SRL**.

## Status Window

The method of displaying the file transfer progress status can be selected. Select any of the following option buttons. The default value is **Show in Session**.

**Show in Session**
When file transfer starts, the status window appears. The name of the file being transferred and the transfer progress appear.

**Show in icon** When file transfer starts, the status icon appears on the screen. When the status icon is restored, the status window appears.

## PC Code Page

When a file is transferred, EBCDIC codes are converted to 1-byte workstation codes, and vice versa. A valid value is automatically selected from among 437, 819, 850, 860, 861, 863, and 865 depending on the current PC code page setting. (For an explanation of how to select host code pages, see the help for host code page.)

## Host Command

The host command to be called when file transfer starts can be entered. If nothing is entered in this text box, **IND*x*FILE** is used for 3270 sessions; APVAFILE is used for 5250 sessions.

## File Transfer Directory

The directory that appears first in the Send File to Host or Receive File from Host window can be specified.

## Changing Transfer Options

To change miscellaneous items, complete these steps:

1. Select **Transfer** from the menu bar of the session window and then select **Setup**.
2. Select **Miscellaneous Settings** from the submenu.

   The Miscellaneous Settings window appears.
3. Change the required settings.
4. Select **OK**.

   After all the settings have been changed, the Miscellaneous Settings window is closed.

---

## Setting Translation Tables

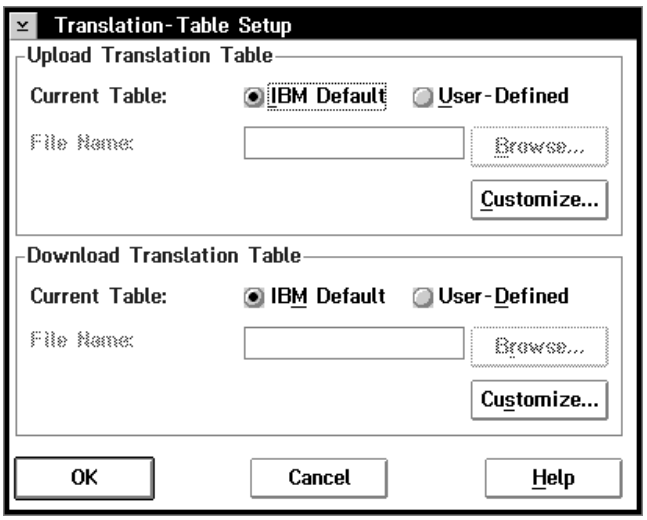
The translation tables used for sending or receiving files can be changed or customized.

## Changing Translation Tables

To change a translation table, complete these steps:

1. Select **Transfer - Setup** from the menu bar of the session window.
2. Select **Translation Table** from the submenu.

   The Translation-Table Setup window appears.




3. The table currently being used for file transfer appears in the selection status. Select **IBM Default** or **User-Defined**.
4. If **User-Defined** is selected, enter a translation table name in the text box, or select a file name by selecting **Browse**.
5. Select **OK**.

After the translation table has been set, the Translation-Table Setup window is closed.

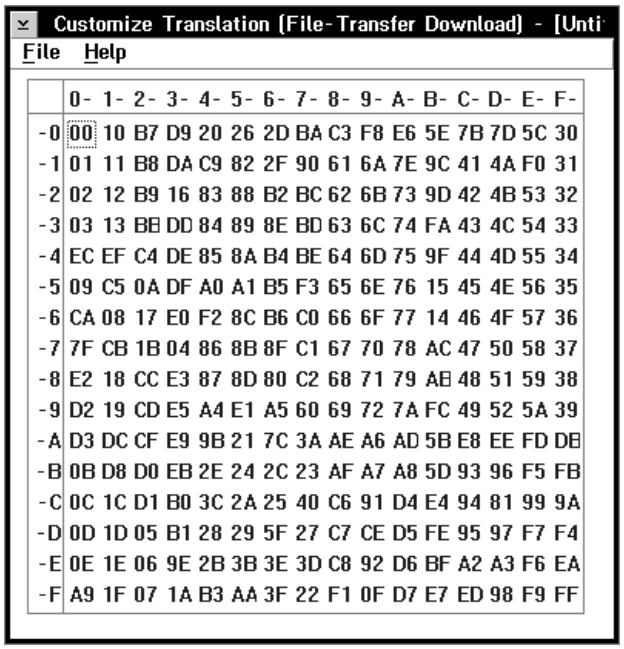
## Customizing Translation Tables

A user-specific translation table for transmission or reception can be created, or an existing translation table can be edited.

To create or edit a translation table, complete these steps:

1. Select **Customize** for the transmitting (upload) or receiving (download) translation table in the Translation-Table Setup window.

   The Customize Translation window appears.




   If a translation table is not selected, or if **New** is selected from the **File** menu, the default values appear in the table.

   **Translation source codes**
   Workstation code point codes when an upload translation table is edited. Host code point codes when a download translation table is edited.

   **Translation target codes**
   Host code point codes when an upload translation table is edited. Workstation code point codes when a download translation table is edited.

2. Double-click on the code to be changed in the table, and change the value in the window that subsequently appears.
3. Select **Save** for editing, or **Save As** for creation from the **File** pull-down menu.
4. If **New** is selected, enter a translation table name in the Save Translation File as window, and select **OK**.

   The translation table is saved, and the Save Translation File as window is closed.

## Transferring Files

# Chapter 5. Configuration, Installation, and Distribution (CID)

This chapter describes configuration, installation, and distribution (CID) for Personal Communications, including its remote and local configuration and installation. Personal Communications supports CID, as do other OS/2 products such as OS/2 Version 2.1 and Communications Manager/2 (or OS/2 Access Feature).

CID is a tool used by network administrators to enable efficient configuration, installation, and distribution for multiple distributed workstations. A network administrator can prepare response files for a group of workstations and distribute the response files by diskettes or through a LAN server. The administrator can install Personal Communications in each of the workstations through the network, and receive the results of the installation. This process is called the *response file preparation*.

Response file installation can preserve personalized features on a workstation during an upgrade migration. However, the response file installation does not change the workstation configuration unless the process completes without any errors.

See Appendix A for information on migrating your Communications Manager/2 configuration to Personal Communications.

The figure Figure 5-1 on page 5-2 below shows the CID flow. A shows the private files being created by workstation users using the panel process after Personal Communications is installed. B shows the process of creating response files, which is required if you want to perform response file installation. C shows the process performed by the network administrator and the workstation user. The process performed by the network administrator is either:

Installation using the response file
Installation without using the response file

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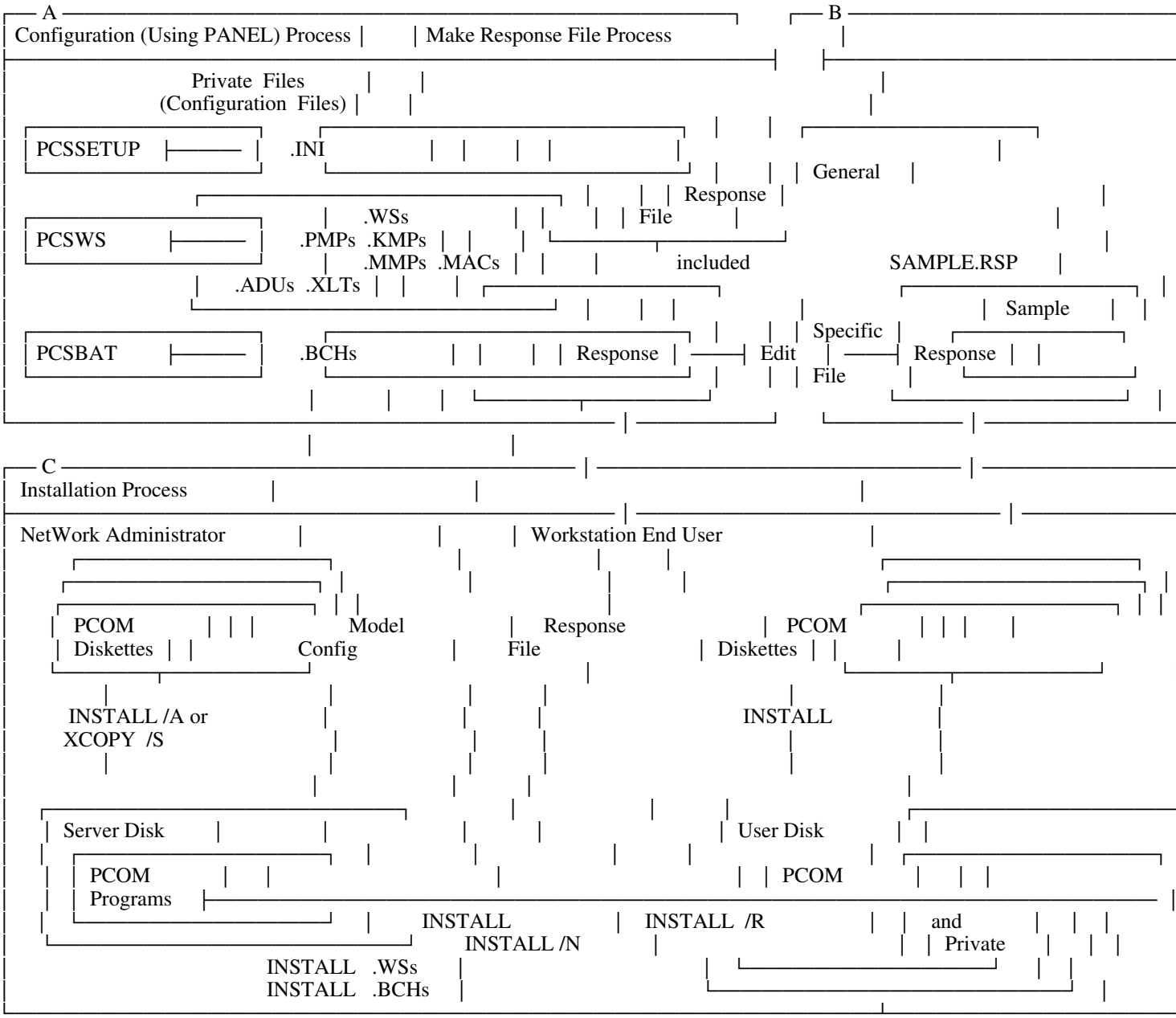



*Figure 5-1. Configuration, Installation, and Distribution Process Flow*

## Software Distribution Manager (SDM) Considerations

To install Personal Communications by CID, perform the procedures explained in this section before the actual installation.

## Determine the Type of Code Server and Client

Before transferring the product diskette data to the hard disk, you must determine the type of code server you wish to create and the type of clients you will be installing.

There are two types of CID servers:

| Type | Command | Description |
|---|---|---|
| I | xcopy /S | This will create a server that does not have emulation selected. |
| II | install /a | This will create a server with emulation selected. |

Create Type I servers if:

Clients can select the emulation type

Clients do not share code in the server

Create Type II servers if,

Clients should have the same emulation as the server and cannot change the emulation type.

Clients will share code (executable files) in the server.

## Transferring Product Diskette Data

Transfer the product diskette data to the hard disk according to the type of code server you wish to create.

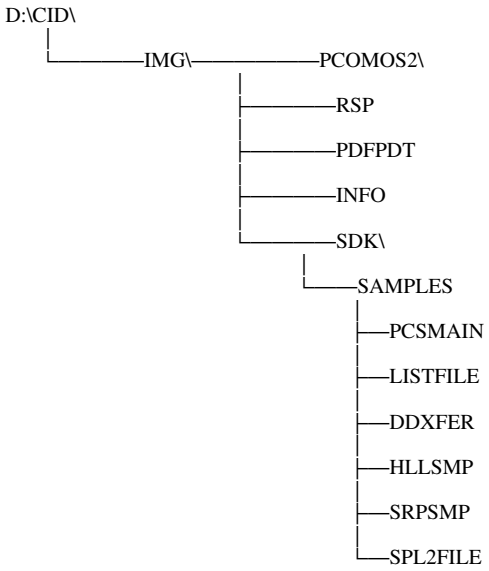
### Type I Servers (XCOPY Command)

If you wish to create a Type I code server, use the **XCOPY** command to copy Personal Communications files from diskettes to a directory that becomes the source path for performing a remote installation.

For example:

```
XCOPY A:\ D:\CID\IMG\PCOMOS2 /S
```

This command copies files (from the diskette in drive A to a directory in drive D) structured as follows:

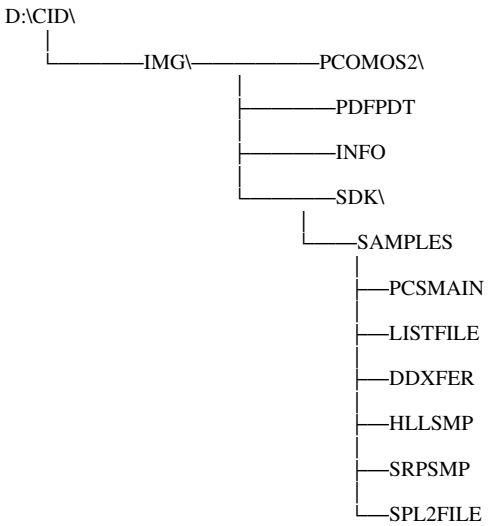



## Type II Servers (INSTALL Command)

Use the Personal Communications INSTALL command to create a Type II code server. The directory in which the code server will be created and the type of emulation selected will be prompted from the installation dialogs. The response file templates provided by Personal Communications will not be copied to the code server. For example:

```
A:\INSTALL /A
```

If you specify *D:\CID\IMG\PCOMOS2* as the target directory in the installation dialog, this command copies files (from the diskette in drive A to a directory in drive D) structured as follows:



# Preparing Response Files

A sample response file (PCOMOS2.RSP) is provided with Personal Communications; you can modify it for your own environment. This response file contains lower-level (“child") response files that can be used to establish the host connection, customize the graphical user interface (GUI) of the session window, and customize the Personal Communications main module (PCSWS.EXE).

## CID Client Installation

This section describes the installation of clients from the two types of code servers. Each example assumes the following values:

Source path (/S) D:\ CID\ IMG\ PCOMOS2
Target path (/T) C:\ PCOMOS2
Response file (/R) D:\ CID\ RSP\ PCOMOS2\ PCOMOS2.RSP

General response file path (/G) D:\ CID\ RSP\ PCOMOS2\ GNL
Error log file (/L1) D:\ CID\ LOG\ PCOMOS2\ ERROR.LOG
History log file (/L2) D:\ CID\ LOG\ PCOMOS2\ HISTORY.LOG

## Client Installation from Type I (XCOPY) Servers

If you used the **XCOPY /S** command to copy the diskette files, enter the following command:

```
INSTALL /R:D:\ CID\ RSP\ PCOMOS2\ PCOMOS2.RSP /S:D:\ CID\ IMG\ PCOMOS2
 /T:C:\PCOMOS2 /G:D:\CID\RSP\PCOMOS2\GNL /L1:D:\CID\LOG\PCOMOS2\ERROR.LOG
 /L2:D:\CID\LOG\PCOMOS2\HISTORY.LOG
```

The emulation type to install will be determined by the response file

The clients will not share executable code with the server.

You can also install clients without using response files. In this case, the target directory and the emulation type will be prompted for each client.

## Client Installation from Type II (INSTALL) Servers

If you do not want clients to share executable files with the server, enter the following command:

```
INSTALL /R:D:\ CID\ RSP\ PCOMOS2\ PCOMOS2.RSP /S:D:\ CID\ IMG\ PCOMOS2
 /T:C:\PCOMOS2 /G:D:\CID\RSP\PCOMOS2\GNL /L1:D:\CID\LOG\PCOMOS2\ERROR.LOG
 /L2:D:\CID\LOG\PCOMOS2\HISTORY.LOG
```

If you want clients to share executable files with the server, enter the following command:

```
INSTALL /N /R:D:\ CID\ RSP\ PCOMOS2\ PCOMOS2.RSP /S:D:\ CID\ IMG\ PCOMOS2
 /T:C:\PCOMOS2 /G:D:\CID\RSP\PCOMOS2\GNL /L1:D:\CID\LOG\PCOMOS2\ERROR
 /L2:D:\CID\LOG\PCOMOS2\HISTORY.LOG
```

The emulation type installed in clients will be the same as the server. The installation keyword for the emulation type will be ignored.

## Directories Created by the Installation Program

After installing, the program creates the following subdirectories in the root of the Personal Communications directory:

**PRIVATE**
**SDK**
**PDFPDT**
**INFO**

Subdirectories other than PRIVATE can contain files only when they are selected to be installed.

### The PRIVATE Subdirectory

This is almost empty when you first install Personal Communications, but if you create and save configurations, the following types of files are stored here:

Personal files in the PRIVATE subdirectory:

Workstation (session) profiles (***.WS**)
Batch files (to start multiple sessions) (***.BCH**)
Keyboard files (***.KMP**)
Pop-up keypad files (***.PMP**)
Mouse files (***.MMP**)
Macro files (***.MAC**)
File-transfer translation files (***.XLT**)
Automatic dial facility files (***.ADU**)
User profile (***.UPR**) (for PC400 only)

### The SDK Subdirectory

This has several subdirectories, each of which contains the executable and source files for a sample program. These programs are designed only to illustrate the use of a programming interface, but they are usable. Try them.

### The PDFPDT Subdirectory

This directory contains PDF and PDT files used by the Personal Communications Print function in PDT mode.

### The INFO Subdirectory

This directory contains the Information Notebook, including the contents of Up and Running, Programmer's Guide for OS/2, and this manual.

## Sample Software Distribution Manager (SDM) Profile for NetView DM/2 Server

Following is a sample SDM profile for NetView DM/2 Server. NetView DM/2 is a product in the IBM SDM family of products.

```
 TargetDir  =  C:\PCOMOS2

Section Catalog
Begin
     ObjectType  =  Software
     GlobalName  =  PCOMOS2.CLIENT.WKSTNAME.REF.4.
     Description  =  "Personal Communications for OS/2 Version 4. "
End

Section Install
Begin
     Program  =  SA:\IMG\PCOMOS2\INSTALL.EXE
     Parms  =  /R:$(ResponseFile)  /S:$(SourceDir)  /L1:$(LogFile1)  /L2:$(LogFile2)
     ResponseFile  =  SB:\RSP\PCOMOS2\$(WorkStatName).RSP
     SourceDir  =  SA:\IMG\PCOMOS2
     LogFile1  =  SB:\LOG\PCOMOS2\$(WorkStatName).L1
     LogFile2  =  SB:\LOG\PCOMOS2\$(WorkStatName).L2
End
```

# Configuration

Personal Communications provides three types of configuration:

1. System configuration
2. Session configuration
3. Multiple session configuration

## System Configuration (PCSSETUP.EXE)

System configuration is set up automatically when Personal Communications is running. For example, the device drivers used by Personal Communications are added to the **CONFIG.SYS** file. Personal Communications provides **PCSSETUP** (the System Setup Program) to let you change these settings after the installation.

## Session Configuration (PCSWS.EXE)

Session configuration is set up from each workstation (session) window by PCSWS after Personal Communications has been installed. These settings are saved in the workstation profile (*filename***.WS**) in the **PRIVATE** subdirectory. Refer to *Up and Running* for setting up the session configuration.

## Multiple Session Configuration (PCSBAT.EXE)

Personal Communications provides **PCSBAT** to start multiple host session windows and other OS/2 Presentation Manager programs simultaneously. These settings are saved in the batch file (*filename***.BCH**) in the **PRIVATE** subdirectory. Refer to *Up and Running* for setting up the multiple session configuration.

## Private Files (Configuration Files)

The following types of files are Personal Communications private files. They are generated by **PCSSETUP.EXE**, **PCSWS.EXE**, and **PCSBAT.EXE**. All private files created by the Personal Communications configuration process are flat ASCII files and can be delivered to the clients as model configuration files. The specific changes for the clients are made by configuring at the clients' side.

**PCSSETUP.EXE**

- Installation control file (*install***.INI**)

**PCSWS.EXE**

- Workstation (session) profiles (*filename***.WS**)
- Session control file (*pcswin***.INI**)
- Keyboard files (*filename***.KMP**)
- Pop-up-keypad files (*filename***.PMP**)
- Mouse files (*filename***.MMP**)
- Macro files (*filename***.MAC**)
- Automatic Dial Facility files (*filename***.ADU**)
- File-transfer translation files (*filename***.XLT**)

**PCSBAT.EXE**

- Batch files (to start multiple sessions) (*filename***.BCH**)

## Installation (INSTALL.EXE)

When installing Personal Communications, you answer prompts in several dialogs. However, if you want to install it with the default options, just click on the **OK** button in each dialog.

The installation process is as follows:

1. You are prompted to specify the target directory. The system checks the free disk space.
2. You are prompted to specify the type (full or partial) of installation you want.

   Program files are copied to the target directory according to the type of installation you selected. The **PRIVATE** subdirectory is created in the target directory. A Personal Communications folder is created, and icons are added to it on the OS/2 Desktop.

## Parameters

The installation program **INSTALL.EXE** supports the following parameters. Any combination of these parameters can be specified except for CID parameters. Parameters must be delimited by spaces.

**No parameter.** Specify no parameter when you want to install all Personal Communications programs from the diskettes or through the network server.

/**A (for centralized installation).** Use this parameter to install Personal Communications in a network server from diskettes. This parameter does not create the **PRIVATE** subdirectory and does not set up the system settings.

/**N (for centralized installation).** Use this parameter when installing Personal Communications in a network server using the /A parameter, and when the installed programs must to be shared by the client workstations. The **PRIVATE** subdirectory is created, and the system settings are set up, but the program files are not copied to the target directory.

**Workstation (session) profiles.** Workstation (session) profiles are profiles (*filename*.**WS**) provided by the system administrator to install Personal Communications. The profile contains the descriptions of all the settings that feature each Personal Communications workstation. Each profile specified can cause a PCSWS icon to be added to the Personal Communications folder.

**Batch files (to start multiple sessions).** Batch files (to start multiple sessions) are files (*filename*.**BCH**) offered by the system administrator to install Personal Communications. The batch file contains single or multiple profiles. Each batch file specified can cause a PCSBAT icon to be added to the Personal Communications folder.

**CID parameters.** Following are CID parameters (full path specification is required):

| ***Parameters*** | ***Usage*** |
|---|---|
| /**R:***response_file_name* | Specifies the drive, path, and name of the user-specific response file. |
| /**S:***source_path* | Specifies the drive and path of the product code image files on the code server. Product code images are created by **INSTALL** /**A** or **XCOPY** |

| | |
|---|---|
| | /**S**. This parameter overrides the value specified by the keyword **SourcePath** in the response file. |
| /**G:***general_path* | Specifies the drive and path of the general response file on the SDM code server. A general response file is referred to by an **include** keyword within specific response files. |
| /**T:***target_path* | Specifies the target drive and the root path where to install, configure, or maintain at the client workstation's side. This parameter overrides the value specified by the keyword **TargetPath** in the response file. |
| /**L1:***path\filename* | Specifies the drive, the path, and the name of the product-specific log files on the SDM code server. The parameter /**L1** is required for the error log file. |
| /**L2:***path\filename* | Specifies the drive, the path, and the name of the product-specific log files on the SDM code server. The parameter /**L2** is required for the history log file. |
| /**M** | Specifies, when used along with /**R:**, the target communication stack to be used for CID migration. If /**M:S**, the migration is to standalone Personal Communications V4.1. If /**M:C**, the migration is to Personal Communications V4.1 using CM/2 communication. |

/**D**. Deletes all files for Personal Communications, including the personal files in the Personal Communications PRIVATE directory. This parameter will also remove the Personal Communications folder and any changes made in CONFIG.SYS.

/**Q**. Suppresses information windows. This parameter is valid with the /**D** and /**R** parameters.

## Return Codes

Personal Communications returns the following return codes:

| ***Return code*** | ***Explanation*** |
|---|---|
| **FE 00** | Successful program termination. Reboot the system and do not run the program again. |
| **00 00** | Successful program termination. Do not reboot the system. |
| **08 00** | The data resource was not found. Do not reboot the system. |
| **08 04** | Access to the data resource is denied, because it is already in use. |
| **08 08** | Access to the data resource is denied, because it is not authorized. |
| **08 12** | A data path was not found. |
| **08 16** | The product is not configured. |

| | |
|---|---|
| **12 00** | A storage medium exception (I/O error) took place. |
| **12 04** | The device is not ready. |
| **12 08** | There is not enough disk space. |
| **16 00** | The program was started incorrectly. |
| **16 04** | An unexpected condition took place. |

## Creating Response Files

Personal Communications provides a complete ASCII configuration response file, which you can use as a template to prepare a response file for your configuration; edit it to match your configuration needs. Use any editor that creates an ASCII file, such as the OS/2 system editor.

This section describes the structure and syntax of a response file, and it explains how to prepare your own. The tables in the following sections show how to specify values for each of the keywords.

"Installation Record Keywords" on page 5-22
"Session-Oriented Record Keywords" on page 5-24
"Connection- and Communication-Oriented Record Keywords" on page 5-30
"GUI and Miscellaneous Record Keywords" on page 5-48

A ***response file*** is a product-specific flat ASCII file containing *keyword=value* statements that are interpreted by the Personal Communications installation program. It contains the values that you need to specify during the installation and configuration processes. It has the file extension **RSP**.

The response files contains:

The control information that determines the type of operations performed during remote installation

The names of files and directories needed during the process

The parameters for customizing Personal Communications during the configuration process

The parameters for selecting optional Personal Communications features

The names of the included response files

The user-exit information: an optional exit to a user-supplied program that is called before the files are copied during the installation

There are two kinds of response files in Personal Communications CID:

General response file
Specific response file

### General Response File

The ***general*** (or ***group***) ***response file*** is optionally used and contains all the common keywords used for a group of similar client workstations. You can include the general response files in the specific response file by using the **INCLUDE** keyword.

### Specific Response File

The ***specific response file*** contains information specific for each client workstation, such as communication-related information.

A sample of the specific response file (**SAMPLE.RSP**) is shown in this manual as a template for creating specific response files. See Figure 5-3 on page 5-16 through Figure 5-6 on page 5-19. The /**R:** CID parameter of **INSTALL.EXE** specifies the specific response file name used for remote installation and configuration.

## File Format

Each entry in the response file is generally in the form *keyword=value*, where the *keyword* is on the left side of the statement and identifies the configuration or the installation parameter, and *value* is on the right side of the statement and is either a character string or a list of one or more *keyword=value* statements:

```
keyword = value

keyword = (
                keyword = value
                keyword = value
               ...
          )
```

Note that the following representation causes a syntax error:

```
keyword = value

keyword = ( keyword = value
                keyword = value )
```

### Response File Keyword Types

The keyword types are:

**Record and field keywords.** Keywords that set configuration values are referred to as record and field keywords. The record keyword identifies the record and is followed by a list of *keyword=value* pairs (field keywords) that assign values to the parameters.

**List keywords.** List keywords provide keywords to name, copy, or delete response file records.

**Installation keywords.** Installation keywords manipulate installation and configuration files and control the response file installation.

### Response File Syntax Rules

A response file has the following syntax rules:

Blank lines and lines whose first nonblank characters is an asterisk (*), a number sign (#), or a semicolon (;) are considered comment lines and are ignored. The space characters are defined as tabs, blanks or spaces, and new lines. Following are examples of valid comment lines:

```
This line has an asterisk in column 1
        This line has an asterisk in column 1
The line above uses a new line sequence
          This is also a valid comment line
```

Comments are not allowed on the same line as a *keyword=value* pair.

A comment line can contain up to 384 bytes.

In some cases, *value* or *=value* is optional; these cases are explicitly defined in the context.

You cannot have more than one *keyword=value* pair in a single line.

Keywords begin with alphanumeric characters and do not contain embedded blanks or equal signs (=).

Keywords are not case sensitive.

Blanks leading and trailing the values are removed.

You cannot use left parenthesis—(—for a value because it is used as a delimiter of a list. A left parenthesis is used to delimit the list following the *keyword = ...* on the same line.

A right parenthesis—)—is used to delimit a list. It must be on a line by itself.

Response files do not have indentation restrictions. You can start and end at any column in the file.

Response files can be nested using include statements.

If you specify more than one statement for a single keyword, the last value specified is used.

If you specify **include** statements, they are processed in the order they are specified within the response file. Therefore, in the case below, the included response file (a) is processed before the included response file (b).

```
        :
include = filename   (a)
include = filename   (b)
        :
```

## Assigning Values to Response File Keywords

A *value* is a string of characters that is placed on the right of a response file assignment statement. The value can also be a list of one or more *keyword=value* pairs as shown below.

```
keyword = (
            keyword = value
            keyword = value
                    :
                    :
          )
```

The data type of the values you specify for the keywords can be one of the following types:

***Boolean value***

```
    n or N = No
1   y or Y = Yes
```

**Note:** You cannot specify the words *NO* and *YES*.

***Characters:*** You can specify characters.

***Integers:*** You can specify integers.

***Special Characters:*** The value can be a special character such as a blank or an asterisk (*). These values are explicitly defined when used.

## WSName and Deleting and Copying Record Values

You can use the response file list keywords to name (with the WSName keyword) or to copy values in a record. Not all record keywords can be used for the list keywords.

**WSName Record Values:** The WSName keyword is used when multiple instances of a record keyword are allowed. It identifies which record is to be created or modified. It is usually required. The following example shows the format of the **WSName** keyword:

```
keyword  = (
 WSName = value
keyword  = value
keyword  = value
...
)
```

**Deleting Record Values:** The **delete** keyword causes all information associated with keywords to be removed. When the **delete** keyword is encountered in a list, all keywords in the list except for the **WSName** keyword are ignored. The following example shows the format of the **delete** keyword.

```
keyword  = (
WSName  = a.ws
delete
              )
```

To reset the values in a record, first delete the record with the **delete** keyword. Then, create it using the necessary keywords.

The **delete** keyword is not in the **keyword = value** format.

**Copying Record Values:** The **copy** keyword allows you to reset one instance of a record using another. Most configuration lists that accept the **WSName** keyword to identify records accept the **copy** keyword. The following example of the **copy** keyword shows a record named *a.ws* being reset or initialized with the information of the record *b.ws*.

```
keyword  = (
                WSName   = a.ws
                copy   = b.ws
                           )
```

You must add **keyword=value** pairs to override the values set by the **WSName** and **copy** keywords.

The **copy** keyword works differently when used outside the lists.

### Specifying Controls for Response File Installation

You can use the installation keywords to manipulate installation and configuration files and to control the installation of Personal Communications functions. The installation keywords do not appear as lists. Each **keyword = value** pair is treated separately.

**Copy:** This keyword names the source file and destination file to be copied during installation. Response file installation continues if it encounters an error using this keyword and logs the error in the response file installation log. You can use this keyword more than once in a response file.

The **copy** keyword used inside lists differs from its usage outside lists. Outside lists, the **copy** keyword is used to copy files. Inside lists, the **copy** keyword (a list keyword) allows you to create or modify one instance of a record using another instance to initialize the data.

**Include:** This keyword specifies another response file to include in the current response file. The included response file is processed entirely before proceeding with the including response file. The included response files are processed in order as if their contents were substituted for the **include** keyword in the including response file. When the end of an included file is reached, processing resumes at the next line of the response file that contained the **include** keyword. This keyword can appear more than once in a response file.

During processing, response file installation searches for **filespec**, if it is not the fully qualified file specification in the current directory, in the directory specified with /G:, and in the directories specified in the PATH and DPATH environment variables. The failure of response file installation to find an include file is a critical error.

## CID Examples

The following figure shows how the workstation profiles and the batch file are created from the example response file when you configure two sessions at the target workstation.

```
SAMPLE.RSP    ..... Response file to create two sessions

( CID )    .....    INSTALL /R:d:\path\SAMPLE.RSP

     (at the target workstation)

SAMPLE.BCH      ..... Batch file to create multiple sessions
SESSION1.WS     ..... Workstation profile for session 1
SESSION2.WS     ..... Workstation profile for session 2
```

*Figure 5-2. An Example of Configuration, Installation, and Distribution*

The files used in this example are listed below:

| | |
|---|---|
| SAMPLE.RSP | An example of a specific response file.Figure 5-3 on page 5-16 through Figure 5-6 on page 5-19. |
| SESSION1.WS<br>SESSION2.WS | Examples of the workstation profiles.Figure 5-7 on page 5-20 and Figure 5-8 on page 5-20. |
| SAMPLE.BCH | An example of the batch file created from the response file.Figure 5-9 on page 5-20 . |

```
================================================================================

                              Personal  Communications
                                 Sample Response File

 Name:       SAMPLE.RSP

 ------------------------------------------------------------------------
 Comment lines are lines that contain only white space characters,
    or have an asterisk ( ) (or, number sign (#)) as the first no-white
   space  characters.
================================================================================

================================================================================

 Start of installation functions

 ================================================================================
 -------- ---------------------------------------------------------------
              NOP              - Used to specify if no operation is required.
                                 This keyword has the highest priority.
                                Value:     , N=NO    1,  Y=YES
                                Default:
             ---------------------------------------------------------------
NOP=
 -------- ---------------------------------------------------------------
              TargetPath - Path where to install Personal Communications.
                                 Value:    Fully-qualified Path Name
                                 If the value is not specified, the default is used.
                                Default:  bootdrive:\PCOMOS2\
             ---------------------------------------------------------------
TargetPath=
 -------- ---------------------------------------------------------------
              SourcePath - Path where Personal Communications product images
                                  exist.
                                 Value:      Fully-qualified Path Name
                                 Default: The directory of running INSTALL.EXE
             ---------------------------------------------------------------
SourcePath=
 -------- ---------------------------------------------------------------
              ReMove           - Specifies if Removal of Code code
                                  and/or other files are necessary.
                                  Value:       =No, 1=Remove Code    2=Remove All
                                 Default:
             ---------------------------------------------------------------
ReMove=
 -------- ---------------------------------------------------------------
              Reinstall    - Specifies if Reinstall is required when current
                                  version already exists on TargetPath.    Not
                                  referenced if Remove=1 or 2.
                                 Value:   ,N=No      1,Y=Yes
                                 Default:
             ---------------------------------------------------------------
Reinstall=
```

*Figure 5-3. An Example of a Specific Response File (SAMPLE.RSP): 1 of 4*

```
-------- ------------------------------------------------------------------
            ReConfigure- Specifies whether to reconfigure an already created
                         configuration file or to configure a new
                        configuration  file.
                         Not referenced if Remove=1 or 2.
                        Value:   ,N=No      1,Y=Yes
                        Default:  1
            ------------------------------------------------------------------
Reconfigure=
 -------- ------------------------------------------------------------------
            Migrate       - Specifies whether or not to merge configuration.
                            Not referenced if Remove=1 or 2.
                            Value:   ,N=No      1,Y=Yes
                            Default:  1
            ------------------------------------------------------------------
Migrate=
 -------- ------------------------------------------------------------------
            SelectFile - Selective installation files.
                              Value:      Personal Communications product files
                                           not to be installed with preceding "!"
                                           (eg. !ALTANSI.FON !ALTAPL.FON !PDFPDT\ . )
                              Default: Blank (=Full installation)
            ------------------------------------------------------------------
SelectFile=
 -------- ------------------------------------------------------------------
            Administrator - Administrator option (same as /A option)
                            Value:      ,N=No  1,Y=Yes
                            Default:
            ------------------------------------------------------------------
Administrator=
 -------- ------------------------------------------------------------------
            EmulType      - Emulation type to install
                            Value:      =Both,1=327 ,2=525
                             Default: Version of Personal Communications already installed.    If
                                       Personal Communications is not installed, default is 1.
            ------------------------------------------------------------------
EmulType=
 -------- ------------------------------------------------------------------
            NetWork       - NetWork option (same as /N option)
                            Value:      ,N=No  1,Y=Yes
                            Default:
            ------------------------------------------------------------------
NetWork=
 -------- ------------------------------------------------------------------
            ServerPath - Path where Personal Communications product files are
                          installed by INSTALL with administrator (/A) option
                          It should be specified if selected NetWork=1.
                          Value:    Fully-qualified Path Name
                          Default: The directory of running INSTALL.EXE
            ------------------------------------------------------------------
ServerPath=
 -------- ------------------------------------------------------------------
            Folder        - Indicates whether to create product folder on OS/2
                            desktop.
                            Value:      ,N=No  1,Y=Yes
                            Default:  1
            ------------------------------------------------------------------
Folder=
```

*Figure 5-4. An Example of a Specific Response File (SAMPLE.RSP): 2 of 4*

```
================================================================================

 Start of configuration functions

       This is a sample response file to create 2 sessions as follows:
            Session-1: LAN, 43x8 , Display
            Session-2: DFT, 32x8 , Printer

================================================================================
 -------- ------------------------------------------------------------------
                Session - Creates .WS file and Icon for the session
               ------------------------------------------------------------
Session= (
                 ------------------------------------------------------------
                   WSName          - Workstation profile name which you create.
                                     Value:      file  name
                                     Default:  MY.WS
                 ------------------------------------------------------------
                 WSName=session1.ws
                 ------------------------------------------------------------
                   IconName      - The title of Icon
                                     Value:      Text
                                     Default:  WSName
                 ------------------------------------------------------------
                 IconName=LAN  session
              )

               ------------------------------------------------------------
                Specify your configuration to be changed or added
                     to the .WS file specified by WSName.    (Default is MY.WS)

               ------------------------------------------------------------
Communication= (
                 WSName=session1.ws
                 AutoConnect=Y
                 Link=slan
                 Session=327
              )
SLAN=       (
                 WSName=session1.ws
                 GatewayAddress=4   3745
                 Identifier=       1
              )
327 =       (
                 WSName=session1.ws
                 ScreenSize=43x8
                 SessionType=Display
              )
```

*Figure 5-5. An Example of a Specific Response File (SAMPLE.RSP): 3 of 4*

```
-------- ------------------------------------------------------------------
                Session - Creates .WS file and Icon for the session
               ------------------------------------------------------------------
Session= (
                  WSName=session2.ws
                  IconName=DFT  session
              )

               ------------------------------------------------------------------
                Specify your configuration to be changed or added
                     to the .WS file specified by WSName.    (Default is MY.WS)
               ------------------------------------------------------------------
Communication= (
                  WSName=session2.ws
                  AutoConnect=N
                  Link=csdft
                  Session=327
              )
327 =       (
                  WSName=session2.ws
                  ScreenSize=32x8
                  SessionType=Printer
              )
```

*Figure 5-6. An Example of a Specific Response File (SAMPLE.RSP): 4 of 4*

```
[Profile]
ID=WS
Description=LAN  session

[Communication]
AutoConnect=Y
Link=slan
Session=327

[SLAN]
GatewayAddress=4   3745
Identifier=      1

[327 ]
ScreenSize=43x8
SessionType=Display
```

*Figure 5-7. An Example of a .WS File Created at the Target (SESSION1.WS)*

```
[Profile]
ID=WS
Description=DFT  session

[Communication]
AutoConnect=N
Link=csdft
Session=327

[327 ]
ScreenSize=32x8
SessionType=Printer
```

*Figure 5-8. An Example of a .WS File Created at the Target (SESSION2.WS)*

```
[Profile]
ID=BCH
Description=

[Batch]
Run1=C:\PCOMOS2\PCSWS.EXE  C:\PCOMOS2\PRIVATE\SESSION1.WS
Run2=C:\PCOMOS2\PCSWS.EXE  C:\PCOMOS2\PRIVATE\SESSION2.WS
```

*Figure 5-9. An Example of a .BCH File Created at the Target (SAMPLE.BCH)*

## Sample Response File

Personal Communications provides sample response file templates which you can copy and fill in. You can find these files in the product diskette under the subdirectory RSP. The following table lists the response file templates.

| File Name | Feature Configured or Illustrated |
|---|---|
| PADLC.RSP | 3270 SNA-over-Async parameters |
| PADLC5.RSP | 5250 SNA-over-Async parameters |
| PADLCC.RSP | Async console SNA-over-Async parameters |
| PAEA.RSP | Home3270 parameters |
| PAPPC.RSP | APPC parameters |
| PASYNC.RSP | Advantis** (IIN) parameters |
| PCNDFT.RSP | Non-SNA DFT parameters |
| PCOMOS2.RSP | Installation and session parameters |
| PCSDFT.RSP | SNA DFT parameters |
| PCT.RSP | Communication tower parameters |
| PCUT.RSP | 3270 CUT parameters |
| PCUT5.RSP | 5250 CUT parameters |
| PFILE.RSP | Workstation file parameters |
| PHAM.RSP | 3270 Hayes** AutoSync parameters |
| PHAM5.RSP | 5250 Hayes AutoSync parameters |
| PHPO.RSP | IBM Global Network Connection parameters |
| PLU.RSP | SNA logical unit parameters |
| PNW4SAA.RSP | NetWare** for SAA parameters |
| PRUI.RSP | LUA interface parameters |
| PSDLC.RSP | 3270 SDLC parameters |
| PSDLC5.RSP | 5250 SDLC parameters |
| PSDLCA.RSP | APPC SDLC parameters |
| PSDLCP.RSP | AS/400 passthrough SDLC parameters |
| PSLAN.RSP | 3270 IEEE 802.2 parameters |
| PSLAN5.RSP | 5250 IEEE 802.2 parameters |
| PSLANA.RSP | APPC IEEE 802.2 parameters |
| PSLANP.RSP | AS/400 passthrough IEEE 802.2 parameters |
| PTDLC.RSP | Twinaxial data link parameters |
| PTDLCP.RSP | AS/400 passthrough twinaxial data link parameters |
| PTELNET.RSP | TCP/IP Telnet3270 parameters |
| PTELNET5.RSP | TCP/IP Telnet5250 parameters |
| PAPI.RSP | Application programming interface parameters |
| PCOLORS.RSP | Workstation colors parameters |
| PDIAL.RSP | Automatic Dial utility parameters |
| PGRAPH.RSP | 3270 host graphics colors parameters |
| PHOTSPT.RSP | Workstation hot spot parameters |
| PKBD.RSP | Workstation keyboard parameters |
| PMACRO.RSP | Workstation macro parameters |
| PMOUSE.RSP | Workstation mouse parameters |

| File Name | Feature Configured or Illustrated |
|---|---|
| PPOPPAD.RSP | Workstation pop-up keypad parameters |
| PPRT.RSP | Workstation printers parameters |
| PTBAR.RSP | Tool-bar parameters |
| PXFER.RSP | Workstation transfer parameters |
| PXLATE.RSP | Workstation translation parameters |
| PWINDOW.RSP | Workstation window parameters |

In the following sections, the variable values of keywords are denoted using the following symbols:

| Symbol Used | Meaning |
|---|---|
| Character “c” as in *ccccc* | Character variable The number of “c”s represents the number of characters. |
| Character “n” as in *nnnnn* | Integer variable. The number of “n”s represents the number of digits. |
| Character “x” as in *xxxxx* | Hexadecimal variable. The number of “x”s represents the number of digits. |
| Character “d” as in *ddddd* | The number of “d”s represents the number of digits. |
| – | Value does not exist. |

## Installation Record Keywords

This section lists and shows what to specify for each installation record keyword.

The following table describes an overall Personal Communications response file syntax.

*Table 5-1 (Page 1 of 2). Summary of Response File Installation Functions and Keywords*

| Keyword | Description | Value | Default |
|---|---|---|---|
| NOP | No operation | 0,N=NO<br>1,Y=Yes | 0 |
| TargetPath | Where to install the code | Fully qualified path name | *bootdrive*:\PCOMOS2 |
| SourcePath | Path to the source code | Fully qualified path name | Path of INSTALL.EXE |
| SelectFile | Selective installation | File names,“!”with file names means do not install | BLANK (=Full) |
| EmulType | Emulation type to install | 0=Both<br>1=3270<br>2=5250 | Defaults to the version of Personal Communications that is already installed. If Personal Communications is not installed, the default is 1. |
| Administrator | Administrator option | 0,N=No<br>1,Y=Yes | 0 |
| NetWork | Network installation | 0,N=No<br>1,Y=Yes | 0 |

*Table 5-1 (Page 2 of 2). Summary of Response File Installation Functions and Keywords*

| Keyword | Description | Value | Default |
|---|---|---|---|
| ServerPath | Path to the source code on a server | Fully qualified path name | SourcePath |
| Folder | Folder creation | 0,N=No<br>1,Y=Yes | 1 |
| Remove | Remove code or remove all | 0=No,<br>1=Remove Code,<br>2=Remove All | 0 |
| Reinstall*1 | Reinstall when the same version already exists on TargetPath | 0,N=No<br>1,Y=Yes | 0 |
| Reconfigure*1 | Specifies whether to reconfigure an already created configuration file or to configure a new configuration file | 0,N=No<br>1,Y=Yes | 1 |
| Migrate*1 | Specifies whether to merge the configuration file | 0,N=No<br>1,Y=Yes | 1 |
| Copy | Copies one file to another | filespec path, where filespec specifies the source file and path specifies the target file and path | – |
| Include | Includes other response files | filespec, where filespec specifies the file to include | – |
| Version*2 | Associates a response file with a version of the product | namespec | – |

**Note:**

***1** For more details, see Table 5-2 on page 5-24 and Table 5-3 on page 5-24.
***2** namespec must be as follows:

IBM Personal Communications OS/2 Product 4.1

The last string "4.1" should be the version of package. If it is greater than the version of package, CID fails.

Table 5-2 on page 5-24 shows what happens when you try to install Personal Communications, using each Reinstall keyword value, to a system that has Personal Communications already or not already installed in the target directory

| *Table 5-2. Installation Process Performed by Each Reinstall Keyword Value* | | |
|---|---|---|
| **Reinstall value** | **Personal Communications Is Not Installed** | **Personal Communications Is Already Installed** |
| 1 (Yes) | Installation is performed | Installation is performed |
| 0 (No)* | Installation is performed | Installation is ***not*** performed |
| **Note:**<br>* Default | | |

Table 5-3 shows what happens when you try to reconfigure Personal Communications, using each Reconfigure keyword value in combination with each Migrate keyword value.

| *Table 5-3. Reconfiguration Process Performed by Each Reconfigure Keyword Value* | | |
|---|---|---|
| | **Migrate = 1 (Yes) *** | **Migrate = 0 (No)** |
| Reconfigure = 1 (Yes)* | Data in the response file is merged with data in an existing WS file, or a new WS file is created from data in the response file if the WS file does not exist in the target directory. | An existing WS file is replaced with only data in the response file, or a new WS file is created from data in the response file if the WS file does not exist in the target directory. |
| Reconfigure = 0 (No) | Configuration is ***not*** performed | Configuration is ***not*** performed |
| **Note:**<br>* Default | | |

# Session-Oriented Record Keywords

This section lists and shows what to specify for each session-oriented record keyword.

## 3270 Record

The field keywords described in the following table are used to configure the 3270 session.

To define the 3270 record, use the **3270** keyword.
For example:

```
327 = (
        WSName = MY.WS
        ScreenSize = 24×8
        SessionType = Display
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ScreenSize | *nn×nn* | 24x80 | Screen size of the host session<br>24x80, 32x80, 43x80, 27x132, 48x80, 62x160, 24x132 |
| SessionType | Display, Printer | Display | Use the workstation for the display or printer emulation |
| HostGraphics | 1/0 or Y/N | N | Host Graphics support |
| HostCodePage | *nnn–c* | 037–U | Host code page<br>273–A : Austria<br>037–B : Belgium<br>870–BH : Bosnia/Herzegovina<br>037–Z : Brazil<br>1025–B : Bulgaria<br>037–C : Canada<br>870–CR : Croatia<br>870–CZ : Czech<br>277–D : Denmark<br>278–F : Finland<br>297–F : France<br>1025–M : FYR Macedonia<br>273–G : Germany<br>875–G : Greece<br>870–H : Hungary<br>871–I : Iceland<br>280–I : Italy<br>930–JK : Japan Katakana<br>930–JKE: Japan Katakana–Extended<br>939–JLE: Japan Latin-Extended<br>284–L : Latin America<br>500–M : Multinational<br>037–N : Netherlands<br>277–N : Norway<br>870–P : Poland<br>037–P : Portugal<br>870–R : Romania<br>1025–R : Russia<br>1025–S : Serbia/Montenegro<br>870–SK : Slovakia<br>870–SV : Slovenia<br>284–S : Spain<br>278–S : Sweden<br>1026–T : Turkey<br>285–U : U.K.<br>037–U : United States |
| LtNumber | *xx* | FF[1] | LT number |
| LuNumber | *xx* | FF[1] | LU number |
| NativeGraphics | 1/0 or Y/N | N | Enable the native graphics feature |
| QueryReplyMode | Auto, Fixed | Auto | Query replay that is usable is sent according to the workstation window sizes |
| CharacterCellSize | *nn* × *nn* | 9 × 16 | Specify the dimensions of the character cell |
| LoadPSS | 1/0 or Y/N | N | Specifies whether the Programmed Symbol Set function is enabled. |

**Note:**

**1** When FF is specified, the value is automatically set.

## 5250 Record

The field keywords described in the following table are used to configure the 5250 session.

To define the 5250 record, use the **5250** keyword.
For example:

```
525 = (
        WSName = MY.WS
        ScreenSize = 24×8
        SessionType = Display
      )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ScreenSize | *nn*×*nn* | 24x80 | Screen size of the host session<br>24x80, 27x132 |
| SessionType | Display, Printer, Router | Display | Session type |

| Keyword | Values | Default | Description |
|---|---|---|---|
| HostCodePage | *nnn–c* | 037–U | Host code page<br>273–A : Austria<br>500–A : Austria MNCS<br>500–B : Belgium MNCS<br>870–BH : Bosnia/Herzegovina<br>037–Z : Brazil<br>1025–B : Bulgaria<br>500–C : Canada MNCS<br>870–CR : Croatia<br>870–CZ : Czech<br>277–D : Denmark<br>500–D : Denmark MNCS<br>278–F : Finland<br>500–FI : Finland MNCS<br>297–F : France<br>500–F : France MNCS<br>1025–M : FYR Macedonia<br>273–G : Germany<br>500–G : Germany MNCS<br>875–G : Greece<br>870–H : Hungary<br>871–I : Iceland<br>280–I : Italy<br>500–I : Italy MNCS<br>930–JK : Japan Katakana<br>931–JL : Japan Latin<br>939–JLE: Japan Latin-Extended<br>284–L : Latin America<br>037–N : Netherlands<br>500–N : Netherlands MNCS<br>277–N : Norway<br>500–NO : Norway MNCS<br>870–P : Poland<br>037–P : Portugal<br>500–P : Portugal MNCS<br>870–R : Romania<br>1025–R : Russia<br>1025–S : Serbia/Montenegro<br>870–SK : Slovakia<br>870–SV : Slovenia<br>284–S : Spain<br>500–SP : Spain MNCS<br>278–S : Sweden<br>500–SW : Sweden MNCS<br>500–SF : Switzerland/French<br>500–SG : Switzerland/Germany<br>1026–T : Turkey<br>285–U : U.K.<br>500–UK : U.K. MNCS<br>037–U : United States<br>500–US : United States MNCS |
| WorkStationID | (string) | –[1] | Workstation ID |
| PartnerLU | *caaaaaaa.caaaaaaa* Where c is A–Z, a is A–Z, #, @, $ | APPN.– | Fully qualified partner LU name (system location name) |
| LocalLU | *caaaaaaa.caaaaaaa* Where c is A–Z, a is A–Z, #, @, $ | APPN.– | Fully qualified local LU name (workstation location name) |
| StatusIcon | Show, Hide | Hide | Display Router Session status icon or not |
| AutoLogon | 1/0 or Y/N | N | Bypass APPC logon panel |
| UserProfile | (string) | –[2] | Name of the user profile that includes the user ID and password |
| MsgQueue | (string) | QSYSOPR | Message queue |

| Keyword | Values | Default | Description |
|---|---|---|---|
| MsgLibrary | (string) | *LIBL | Message library |
| HostFont | (string) | Courier10 | Host font |
| HostPrintTransform | 1/0 or Y/N | N | Host print transform |
| ASCII899 | 1/0 or Y/N | N | ASCII899 support (HPT) |
| ManufacturerType | (string) | *IBM 3812 | Manufacturer type and model (HPT) |
| PaperSource1 | *NONE<br>*MFRTYPMDL<br>*LETTER<br>*LEGAL<br>*EXECUTIVE<br>*A4<br>*A5<br>*B5<br>*CONT80<br>*CONT132 | *MFRTYPMDL | Size of the paper source (HPT) |
| PaperSource2 | *NONE<br>*MFRTYPMDL<br>*LETTER<br>*LEGAL<br>*EXECUTIVE<br>*A4<br>*A5<br>*B5<br>*CONT80<br>*CONT132 | *NONE | Size of the paper source (HPT) |
| EnvelopType | *NONE<br>*MFRTYPMDL<br>*EXECUTIVE<br>*B5<br>*C5<br>*DL<br>*MONARCH<br>*NUMBER9 | *NONE | Size of the paper source (HPT) |
| WsObject | (string) | QWPDEFAULT | Workstation customization object (HPT) |
| WsLibrary | (string) | *LIBL | Workstation customization library (HPT) |

**Note:**

**1** When no value is specified, the values is set as follows:

**For display** S*nn*

**For printer** P*nn*

**2** If you do not specify this value, the User Profile Panel, where you can specify a value, is displayed.

# Communication Record

The field keywords described in the following table are used to specify the type of communication link to select to establish the host session.

To define the communication record, use the **Communication** keyword. For example:

```
Communication = (
        WSName = MY.WS
        AutoConnect = 1
        Link = slan
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| AutoConnect | 1/0 or Y/N | Y | The host connection is established automatically or not |
| Link | aea, adlc, apacs32, apacs52, ascon, async, csdft, cndft, cut, cut52, ham, hpo, nw4saa, peer, rui, slan, sdlc, slanpass, sdlcap32, sdlcpass, slanap32, tdlc, tdlcpass, telnet3270, telnet5250 | *1 | Link type*2 |
| Session | 3270 5250 | *1 | Session type |

**Note:**

***1** Must be specified.

***2**

***For 3270 session:***

| Value (corresponding field keyword) | Description |
|---|---|
| **slan (SLAN )** | IEEE 802.2 |
| **nw4saa (NW4SAA)** | NetWare for SAA |
| **telnet3270 (Telnet3270 )** | TCP/IP |
| **slanpass (SLANPASS)** | IEEE802.2 via AS/400 pass-through |
| **slanap32 (APPC3270)** | APPC3270 via IEEE802.2 |
| **csdft (CSDFT)** | SNA DFT |
| **cndft (CNDFT)** | non-SNA DFT |
| **cut (CUT)** | CUT |
| **peer (SLAN )** | 3174 Peer Communication |
| **async (ASYNC)** | Advantis(IIN) |
| **aea (AEA)** | Home3270 |
| **ham (HAM)** | Hayes AutoSync |
| **adlc (ADLC )** | SNA-Over-Async |
| **sdlc (SDLC )** | SDLC |
| **sdlcpass (SDLCPASS)** | SDLC via AS/400 pass-through |
| **sdlcap32 (SDLCAPPC)** | APPC3270 via SDLC |
| **tdlcpass (TDLCPASS)** | Twinax via AS/400 pass-through |
| **rui (RUI)** | LU-0/1/2 via CM/2 |
| **apacs32 (APPC3270)** | APPC3270 via CM/2 |
| **hpo (HPO)** | IBM Global Network Connection |

***For 5250 session:***

| Value (corresponding field keyword) | Description |
|---|---|
| **slan (SLAN5250)** | IEEE802.2 |
| **telnet5250 (Telnet5250)** | TCP/IP |
| **sdlc (SDLC5250)** | SDLC |
| **tdlc (TDLC5250)** | Twinax |
| **cut52 (CUT5250)** | Twinax Console |
| **adlc (ADLC5250)** | SNA-Over-Async |
| **ascon (ADLCASCON)** | Async Console |
| **ham (HAM5250)** | Hayes AutoSync |
| **apacs52 (CT)** | APPC5250 via CM/2 |

## Session Record

The field keywords described in the following table are used to define the workstation profile.

To define the session record, use the **Session** keyword.
For example:

```
Session =(
        WSName = MY.WS
        IconName = Session
)
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| IconName | (string) | WSName | The title of the icon |

## File Record

The field keywords described in the following table are used to define the workstation profile.

To define the file record, use the **File** keyword.
For example:

```
File =(
        WSName = MY.WS
        SaveOnExit = 1
)
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| SaveOnExit | 1/0 or Y/N | Y | Save the workstation profile when the session is terminated |

# Connection- and Communication-Oriented Record Keywords

This section lists and shows what to specify for each of the connection- and communication-oriented record keywords.

## ADLC Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the SNA-Over-Async attachment.

To define the ADLC record, use the **ADLC** keyword.
For example:

```
ADLC = (
        WSName = MY.WS
        ComPort = 1
        Speed = 12
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPort | 1, 2, 3, 4 | 1 | Communication port number |

| Keyword | Values | Default | Description |
|---|---|---|---|
| Speed | 300, 1200,<br>2400, 4800,<br>9600, 14400,<br>19200, 28800,<br>38400 | 1200 | Line speed |
| BitsParity | 8N, 7E, 7O, 7M | 8N | Bits per character and parity |
| LineType | NonSwitched<br>Switched | Switched | Line type |
| TransparencyMode | Basic<br>Flow<br>Full | Flow | Transparency level |
| Transparency-Negotiation | 1/0 or Y/N | N | Enable transparency negotiation<br>yes/no |
| BlockID | *xxx* | 061 | BlockID (3 hex digits) |
| PuID | *xxxxx* | 00000 | PUID (5 hex digits) |
| LinkAddress | *xx* | C1 | Link station address (2 hex digits) |
| MaxSegmentSize | 265 ... 2057 | 265 | Maximum segment size |
| AutoDial | 0, 1 | 1 | Auto Dial<br>0=None, 1=DIRECT |
| ADFfilename | (string) | PCSDIAL.ADU | File name to store auto-dial parameters |
| InactiveTimeout | 0, 5, 10, 30, 60, 120 | 0 | Inactive timer in minutes |

## ADLC5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the SNA-Over-Async attachment.

To define the ADLC5250 record, use the **ADLC5250** keyword.
For example:

```
ADLC525 = (
        WSName = MY.WS
        ComPort = 1
        Speed = 12
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPort | 1, 2, 3, 4 | 1 | Communication port number |
| Speed | 1200, 2400,<br>4800, 9600,<br>14400, 19200,<br>28800, 38400 | 1200 | Line speed |
| BitsParity | 8N, 7E, 7O, 7M | 8N | Bits per character and parity |
| LineType | NonSwitched<br>Switched | Switched | Line type |
| TransparencyMode | Basic<br>Flow<br>Full | Flow | Transparency level |
| Transparency-Negotiation[1] | 1/0 or Y/N | Y | Enable transparency negotiation<br>yes/no |

| Keyword | Values | Default | Description |
|---|---|---|---|
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name (char 16) |
| LinkAddress | *xx* | C1 | Link station address (hex 2 digits) |
| MaxSegmentSize | 265 ... 2057 | 265 | Maximum segment size |
| AutoDial | 0, 1 | 1 | Auto Dial<br>0=None, 1=DIRECT |
| ADFfilename | (string) | PCSDIAL.ADU | File name to store auto-dial parameters |
| **Note 1:** Do not include the hyphen when using the TransparencyNegotiation keyword. | | | |

## ADLCASCON Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the Async Console attachment.

To define the ADLCASCON record, use the **ADLCASCON** keyword.
For example:

```
ADLCASCON = (
        WSName = MY.WS
        ComPort = 1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPort | 1, 2, 3, 4 | 1 | Communication port number |
| TraceBufferSize | *dddd* | 0 | Trace buffer size (KB) |
| TraceEntrySize | *dddd* | 0 | Trace entry size (bytes) |

## AEA Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the Home3270 attachment.

To define the Home3270 record, use the **AEA** keyword.
For example:

```
AEA = (
        WSName = MY.WS
        ComPortNumber = 1
        LineSpeed = 12
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPortNumber | 1, 2, 3, 4 | 1 | Communication port number. 1:COM1. 2:COM2. |

| Keyword | Values | Default | Description |
|---|---|---|---|
| LineSpeed | 110, 150,<br>300, 600,<br>1200, 2400*,<br>4800*, 9600*,<br>19200**, 14400,<br>38400, 57600 | 1200 | Line speed in bits per second. |
| DataBits | 7,8 | 7 | Data bits |
| Parity | NONE, ODD,<br>EVEN, MARK<br>SPACE | ODD | Parity |
| StopBits | 1, 2 | 1 | Stop bits |
| Pacing | 1/0 or Y/N | Y | XON/XOFF pacing |
| RolmPhone | 1/0 or Y/N | N | Attached to a ROLM** phone with DCM or not |
| ProtocolConv | 9370, 3174, 7171, 3708,<br>3708A | 3708 | Attached protocol converter type |
| AutoDial | 1/0 or Y/N | N | Use auto-dial facility |
| EnableA0 | 1/0 or Y/N | Y | Display X'A0'–X'FF' characters as they are, or convert to X'20'–X'7F' |
| ADFfilename | (string) | PCSDIALADU | Name of file to store auto-dial facility parameters |

## APPC3270 Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the SNA LU 6.2 session for APPC3270 connection.

To define the APPC3270 record, use the **APPC3270** keyword.
For example:

```
APPC327 = (
        WSName = MY.WS
        StartCM = Y
        StopCM = Y
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| PLUName | *cccccccc*<br>or<br>*cccccccc.cccccccc* | –<br>or<br>–.– | Partner LU name (partner LU alias or fully qualified partner LU name) |
| ModeName | *cccccccc* | – | Mode name (#INTER) (via CM/2 only) |
| LocalLUName | *cccccccc.cccccccc* | –.– | Fully qualified local LU name (except via CM/2) |
| StartCM | 1/0 or Y/N | Y | Automatically start CM/2 at startup (via CM/2 only) |
| StopCM | 1/0 or Y/N | Y | Automatically stop CM/2 at last session stop (via CM/2 only) |
| AutoReconnect | 1/0 or Y/N | Y | Reconnect session automatically (via CM/2 only) |

## ASYNC Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the Advantis(IIN) attachment.

To define the ASYNC record, use the **ASYNC** keyword.
For example:

```
ASYNC = (
        WSName = MY.WS
        ComPortNum = 1
        Speed = 12
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPortNum | 1, 2, 3, 4 | 1 | Communication port number |
| Speed | 300, 1200,<br>2400, 4800,<br>9600, 14400,<br>19200, 28800,<br>38400 | 1200 | Line speed |
| X25 | *xx* | 80 | Bits and parity<br>Most significant bit shows the word length<br>bbbb bbbb<br>\| \| \|<br>\| \|<br>\| 8N= , 7O=2 , 7E=6<br>\└── 1=8 bits, :7 bits<br>8 =8N, 2 =7O, 6 =7E |
| BlockID | *xxx* | F02 | Block ID (3 hex digits) |
| PuID | *xxxxx* | 00000 | PUID (5 hex digits)<br>The 3rd bit of PuID reflects the compression bit |
| LinkAddress | *xx* | C1 | Link station address (hex 2 digits) |
| ADF | 0, 1, 2 | 0 | Auto Dial<br>(0=None, 1=DIRECT, 2=PAD) |
| PCSDIALfile | (string) | PCSDIAL.ADU | File name to store auto-dial parameters |
| PADResponseTimeout | 03 ... 18 | 03 | PAD response timeout (seconds) |
| PADPollDelay | 00, 05, ... 70, 75 | 00 | PAD poll delay |
| PADBufferSize | 272 ... 2000 | 1904 | PAD buffer size |
| InactiveTimeout | 0, 5, 10, 30, 60, 120 | 0 | Inactivity timer in minutes |

## CNDFT Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the non-SNA DFT attachment.

To define the CNDFT record, use the **CNDFT** keyword.
For example:

```
CNDFT = (
        WSName = MY.WS
        Adapter = 1
        BufferAddress = CE
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1, 2, 3 | 0 | Adapter number |
| BufferAddress | C0 ... DE | CE | First two hex digits of RAM address; CE means CE000h. |
| CCA | 1/0 or Y/N | N | Y means using CCA3270 card |

## CSDFT Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the SNA DFT attachment.

To define the CSDFT record, use the **CSDFT** keyword.
For example:

```
CSDFT = (
        WSName = MY.WS
        Adapter = 1
        BufferAddress = CE
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1, 2, 3 | 0 | Adapter number |
| BufferAddress | C0 ... DE | CE | First two hex digits of RAM address; CE means CE000h |
| CCA | 1/0 or Y/N | N | Y means using CCA3270 card |

## CT Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session via CM2.

To define the 5250 via CM2 record, use the **CT** keyword.
For example:

```
CT = (
        WSName = MY.WS
        AutoRecovery = Y
        trace  =  1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| LocalLUName | (string) | —[1] | Local LU name |
| LocalLUalias | (string) | —[1] | Local LU alias name |

| Keyword | Values | Default | Description |
|---|---|---|---|
| PartnerLUName | (string) | —[1] | Fully qualified partner LU name |
| PartnerLUalias | (string) | —[1] | Partner LU alias |
| ModeName | (string) | —[1] | Mode name |
| AutoRecovery | 1/0 or Y/N | Y | Automatic recovery facility |
| trace | 1/0 or Y/N | N | Trace facility |
| PLU_IS_ALIAS | 1/0 or Y/N | Y | Alias name is used for partner name |
| **Note:** | | | |
| **1** When the value is not specified, the CM/2 values are set. | | | |

## CUT Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the CUT attachment.

To define the CUT record, use the **CUT** keyword.
For example:

```
CUT = (
        WSName = MY.WS
        Adapter =
        BufferAddress  =  CE
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1, 2, 3 | 0 | Adapter number |
| BufferAddress | C0 ... DE | CE | First two hex digits of RAM address;<br>CE means CE000h |
| CCA | 1/0 or Y/N | N | Y means using CCA3270 card, |
| NumLock | 1/0 or Y/N | N | Y means Numeric Lock is on (seconds) |
| KeyboardType | E, (S) | E | Keyboard type (Emulation/Standard);<br>PC/3270 supports only emulation type |
| CULanguage | 0, 1 | 0 | Control unit language; 0:US 1:AG<br>PC/3270 supports US or AG |

## CUT5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the CUT attachment.

To define the CUT5250 record, use the **CUT5250** keyword.
For example:

```
CUT525  = (
        WSName = MY.WS
        StationAddress =
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |

| Keyword | Values | Default | Description |
|---|---|---|---|
| StationAddress | 00 ... 06 | 00 | Station address |

## HAM Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the Hayes AutoSync attachment.

To define the HAM record, use the **HAM** keyword.
For example:

```
HAM = (
        WSName = MY.WS
        ComPort = 1
        MaxSegmentSize = 265
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPort | 1, 2, 3, 4 | 1 | COM port number |
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |
| LinkAddress | *xx* | C1 | Station address (2 hex digits) |
| BlockID | *xxx* | 061 | Block ID (3 hex digits) |
| PuID | *xxxxx* | 00000 | PU ID (5 hex digits) |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| RequestDiscontact | 1/0 or Y/N | N | Send REQDISCONT yes/no |
| AutoDial | Y (fix) | Y | AutoDial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSHAM<br>.ADU | File name to store auto-dial parameters |
| InactiveTimeout | 0, 5, 10, 30, 60, 120 | 0 | Inactivity timer in minutes |

## HAM5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the Hayes AutoSync attachment.

To define the HAM5250 record, use the **HAM5250** keyword.
For example:

```
HAM525  = (
        WSName = MY.WS
        ComPort = 1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPort | 1, 2, 3, 4 | 1 | COM port number |
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |

| Keyword | Values | Default | Description |
|---|---|---|---|
| LinkAddress | *xx* | C1 | Station address (2 hex digits) |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name (17 characters) |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| AutoDial | Y (fix) | Y | Auto Dial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSHAM<br>.ADU | File name to store auto-dial parameters |

## HPO Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the IBM Global Network Connection.

To define the IBM Global Network Connection record, use the **HPO** keyword. For example:

```
HPO = (
        WSName = MY.WS
        ComPortNum = 1
        Speed  =  12
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ComPortNum | 1,2,3,4 | 1 | Communication port number |
| Speed | 300, 1200,<br>2400, 4800,<br>9600, 14400,<br>19200, 28800<br>38400 | 9600 | Line speed |
| AutoDial | 0, 1 | 0 | Auto Dial<br>(0 = None, 1 = DIRECT) |
| PCSDIALfile | (string) | PCSDIAL.ADU | File name to store auto-dial parameters |
| InactiveTimeout | None, 5, 10,<br>30, 60, 120 | 60 | Idle timeout (minutes) |
| Encryption | 0, 1 | 1 | Encryption level<br>(0 = None, 1 = DES) |

| Keyword | Values | Default | Description |
|---|---|---|---|
| GWLocation | *cc* | US | Advantis Gateway Location<br>(Abbreviation of Country Name)<br>**Value** **Meaning**<br>**AU** Australia<br>**AT** Austria<br>**BE** Belgium<br>**BR** Brazil<br>**CA** Canada<br>**CL** Chile<br>**CY** Cyprus<br>**DK** Denmark<br>**FI** Finland<br>**FR** France<br>**DE** Germany<br>**GR** Greece<br>**HK** Hong Kong<br>**ID** Indonesia<br>**IE** Ireland<br>**IT** Italy<br>**LU** Luxembourg<br>**MX** Mexico<br>**AN** Netherland Antilles<br>**NL** Netherlands<br>**NZ** New Zealand<br>**NO** Norway<br>**PE** Peru<br>**ZA** South Africa<br>**ES** Spain<br>**SE** Sweden<br>**CH** Switzerland<br>**TH** Thailand<br>**TR** Turkey<br>**GB** United Kingdom<br>**US** United States |

## LU Record

The field keywords described in the following table are used to configure the parameters required for the SNA Logical Unit characteristic.

To define the LU record, use the **LU** keyword.
For example:

```
LU = (
        WSName = MY.WS
        CompEnabled = 1
        CompBufSize  =  4 96
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| CompEnabled | 1/0 or Y/N | N | VTAM compression<br>**Y** Enable<br>**N** Disable |
| CompBufSize | dddd | 4096 | Compression buffer size |

## NW4SAA Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session attached to NetWare for SAA Gateway.

To define the NW4SAA record, use the **NW4SAA** keyword.
For example:

```
NW4SAA = (
        WSName = MY.WS
        Server = server
        UserID = user
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Server | (string) | – | Server name |
| UserID | (string) | – | User name |
| Service | (string) | – | Service name |
| LUCategory | Any,<br>Public,<br>Dedicated,<br>Pooled | Any | LU category |
| LUName | (string) | – | Dedicated LU name if “Dedicated”;<br>LU pool name if “Pooled”;<br>N/A if “Any” or “Public” |

## RUI Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the SNA LUA3270 session.

To define the RUI record, use the **RUI** keyword.
For example:

```
RUI = (
        WSName = MY.WS
        StartCM = Y
        StopCM = Y
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| LUName | *cccccccc* | – | LUA LU name |
| StartCM | 1/0 or Y/N | Y | Automatically start CM/2 at startup |
| StopCM | 1/0 or Y/N | Y | Automatically stop CM/2 at the last session stop |
| AutoReconnect | 1/0 or Y/N | Y | Reconnect the session automatically |

## SDLC Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the SDLC attachment.

To define the SDLC record, use the **SDLC** keyword.
For example:

```
SDLC = (
        WSName = MY.WS
        Adapter =
        MaxSegmentSize = 265
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |
| StationID | *xx* | C1 | SDLC station address (2 hex digits) |
| BlockID | *xxx* | 061 | Block ID (3 hex digits) |
| PuID | *xxxxx* | 00000 | PU ID (5 hex digits) |
| Switched | 1/0 or Y/N | Y | Switched line yes/no<br>Y=Swiched, N=Leased |
| ContinuousCarrier | 1/0 or Y/N | N | Continuous carrier yes/no |
| HalfSpeed | 1/0 or Y/N | Y | Half speed backup yes/no |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| AnswerTone | 1/0 or Y/N | 0 | Answer tone generation yes/no |
| RequestDiscontact | 1/0 or Y/N | N | Send REQDISCONT yes/no |
| AutoDial | 1/0 or Y/N | N | Auto Dial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSSDLC<br>.ADU | File name to store auto-dial parameters |
| PCMCIA | 1/0 or Y/N | N | PCMCIA yes/no<br>Currently customizable in Japan only |
| InactiveTimeout | 0, 5, 10, 30, 60, 120 | 0 | Inactivity timer in minutes |

## SDLC5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the SDLC attachment.

To define the SDLC5250 record, use the **SDLC5250** keyword.
For example:

```
SDLC525  = (
        WSName = MY.WS
        Adapter =
        MaxSegmentSize = 265
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |

| Keyword | Values | Default | Description |
|---|---|---|---|
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |
| StationID | *xx* | C1 | SDLC station address (2 hex digits) |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name (17 characters) |
| Switched | 1/0 or Y/N | Y | Switched line yes/no<br>Y=Swiched, N=Leased |
| ContinuousCarrier | 1/0 or Y/N | N | Continuous carrier yes/no |
| HalfSpeed | 1/0 or Y/N | Y | Half speed backup yes/no |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| AnswerTone | 1/0 or Y/N | 0 | Answer tone generation yes/no |
| AutoDial | 1/0 or Y/N | N | Auto Dial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSSDLC .ADU | File name to store auto-dial parameters |
| PCMCIA | 1/0 or Y/N | N | PCMCIA yes/no<br>Currently customizable in Japan only |

# SDLCAPPC Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the APPC3270 session using the SDLC attachment.

To define the SDLCAPPC record, use the **SDLCAPPC** keyword. For example:

```
SDLCAPPC = (
        WSName = MY.WS
        Adapter =
        MaxSegmentSize = 265
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |
| StationID | *xx* | C1 | SDLC station address (2 hex digits) |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name (17 characters) |
| Switched | 1/0 or Y/N | Y | Switched line yes/no<br>Y=Swiched, N=Leased |
| ContinuousCarrier | 1/0 or Y/N | N | Continuous carrier yes/no |
| HalfSpeed | 1/0 or Y/N | Y | Half-speed backup yes/no |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| AnswerTone | 1/0 or Y/N | 0 | Answer tone generation yes/no |
| AutoDial | 1/0 or Y/N | N | Auto Dial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSSDLC .ADU | File name to store auto-dial parameters |

| Keyword | Values | Default | Description |
|---|---|---|---|
| PCMCIA | 1/0 or Y/N | N | PCMCIA yes/no<br>Currently customizable in Japan only |
| BlockID | *xxx* | 061 | BlockID (3 hex digits) |
| PuID | *xxxxx* | 00000 | PUID (5 hex digits) |

## SDLCPASS Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session via AS/400 pass-through.

To define the SDLCPASS record, use the **SDLCPASS** keyword.
For example:

```
SDLCPASS = (
        WSName = MY.WS
        Adapter =
        MaxSegmentSize = 265
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| MaxSegmentSize | 265 ... 2057 | 265 | PIU size |
| StationID | *xx* | C1 | SDLC station address (2 hex digits) |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name (17 characters) |
| Switched | 1/0 or Y/N | Y | Switched line yes/no<br>Y=Switched, N=Leased |
| ContinuousCarrier | 1/0 or Y/N | N | Continuous carrier yes/no |
| HalfSpeed | 1/0 or Y/N | Y | Half-speed backup yes/no |
| NrziEncoding | 1/0 or Y/N | Y | NRZI encoding yes/no |
| AnswerTone | 1/0 or Y/N | 0 | Answer tone generation yes/no |
| AutoDial | 1/0 or Y/N | N | Auto Dial yes/no<br>Y=V.25 bis dialing, N=None |
| ADFfilename | (string) | PCSSDLC<br>.ADU | File name to store auto-dial parameters |
| PCMCIA | 1/0 or Y/N | N | PCMCIA yes/no<br>Currently customizable in Japan only |

## SLAN Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the IEEE 802.2 protocol.

To define the SLAN record, use the **SLAN** keyword.
For example:

```
SLAN = (
        WSName = MY.WS
        Adapter =
        GatewayAddress = 4   3745   1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| GatewayAddress | 000000000000 –7FFFFFFFFFFF | 40000000 0000 | Destination address |
| DestinationSAP | 04–EC | 04 | Remote (destination (host)) SAP |
| ReceiveBufferSize | 265–2042 | 265 | SAP buffer size must be the same as TransmitFrameSize |
| TransmitFrameSize | 265–2042 | 265 | Path information unit (PIU) size used to transmit buffer size (DHB) in shared RAM |
| Identifier | 00000000 –FFFFFFFF | 06100000 | First 3 characters are the block ID, and the remaining 5 characters are the PUID |
| SourceSAP | 04–EC | 04 | Local (source (workstation)) SAP |
| ReceiveBufferCount | 1–99 | 12 | SAP buffer count |
| LinkStations | 1 – maxstation | 1 | Link station count for local SAP for dlc_open_sap command |

## SLAN5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the IEEE 802.2 protocol.

To define the SLAN5250 record, use the **SLAN5250** keyword.
For example:

```
SLAN525  = (
        WSName = MY.WS
        Adapter =
        GatewayAddress = 4   3745   1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| GatewayAddress | 000000000000 –7FFFFFFFFFFF | 40000000 0000 | Destination address |
| DestinationSAP | 04–EC | 04 | Remote (destination (host)) SAP |
| ReceiveBufferSize | 265–2042 | 265 | SAP buffer size must be the same as TransmitFrameSize |
| TransmitFrameSize | 265–2042 | 265 | (PIU) path information unit size used to transmit buffer size (DHB) in shared RAM |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name |
| SourceSAP | 04–EC | 04 | Local (source (workstation)) SAP |
| ReceiveBufferCount | 1–99 | 12 | SAP buffer count |
| LinkStations | 1 – maxstation | 1 | Link station count for local SAP for dlc_open_sap command |

## SLANAPPC Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the APPC3270 session using the IEEE 802.2 protocol.

To define the SLANAPPC record, use the **SLANAPPC** keyword.
For example:

```
SLANAPPC = (
        WSName = MY.WS
        Adapter =
        GatewayAddress = 4   3745   1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| GatewayAddress | 000000000000 –7FFFFFFFFFFF | 40000000 0000 | Destination address |
| DestinationSAP | 04–EC | 04 | Remote (destination (host)) SAP |
| ReceiveBufferSize | 265–2042 | 265 | SAP buffer size must be the same as TransmitFrameSize |
| TransmitFrameSize | 265–2042 | 265 | (PIU) path information unit size used to transmit buffer size (DHB) in shared RAM |
| Identifier | 00000000 –FFFFFFFF | 06100000 | First 3 characters are the block ID, and the remaining 5 characters are the PUID |
| CPName | *ccccccc.cccccccc* | APPN.– | Fully qualified control point name |
| SourceSAP | 04–EC | 04 | Local (source (workstation)) SAP |
| ReceiveBufferCount | 1–99 | 12 | SAP buffer count |
| LinkStations | 1 – maxstation | 1 | Link station count for local SAP for dlc_open_sap command |

## SLANPASS Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session via AS/400 pass-through using the IEEE 802.2 protocol.

To define the SLANPASS record, use the **SLANPASS** keyword.
For example:

```
SLANPASS = (
        WSName = MY.WS
        Adapter =
        GatewayAddress = 4   3745   1
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| Adapter | 0, 1 | 0 | Adapter number |
| GatewayAddress | 000000000000 –7FFFFFFFFFFF | 40000000 0000 | Destination address |

| Keyword | Values | Default | Description |
|---|---|---|---|
| DestinationSAP | 04–EC | 04 | Remote (destination (host)) SAP |
| ReceiveBufferSize | 265–2042 | 265 | SAP buffer size must be the same as TransmitFrameSize |
| TransmitFrameSize | 265–2042 | 265 | (PIU) path information unit size used to transmit buffer size (DHB) in shared RAM |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name |
| SourceSAP | 04–EC | 04 | Local (source (workstation)) SAP |
| ReceiveBufferCount | 1–99 | 12 | SAP buffer count |
| LinkStations | 1 – maxstation | 1 | Link station count for local SAP for dlc_open_sap command |

## TDLC5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the Twinaxial attachment to the terminal controller for AS/400.

To define the TDLC5250 record, use the **TDLC5250** keyword.
For example:

```
TDLC525 = (
        WSName = MY.WS
        CPName = APPN
        )
```

| Parameter | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name |
| StationAddress | 0, 1, 2, 3, 4, 5, 6 | 0 | Twinax station address |
| ReceiveBufferSize | 265 ... 2057 | 521 | Receive buffer size |
| TraceBufferSize | *dddd* | 0 | Trace buffer size (KB); the standard value is 50 to capture a communication trace |

## TDLCPASS Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the Twinaxial attachment to AS/400 pass-through.

To define the TDLCPASS record, use the **TDLCPASS** keyword.
For example:

```
TDLCPASS = (
        WSName = MY.WS
        StationAddress = 1
        )
```

| Parameter | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| CPName | *cccccccc.cccccccc* | APPN.– | Fully qualified control point name |

| Parameter | Values | Default | Description |
|---|---|---|---|
| StationAddress | 0, 1, 2, 3, 4, 5, 6 | 0 | Twinax station address |
| ReceiveBufferSize | 265 ... 2057 | 521 | Receive buffer size |
| TraceBufferSize | *dddd* | 0 | Trace buffer size (KB);<br>the standard value is 50 to capture a communication trace |
| TransmitFrameSize | 265 ... 2057 | 521 | Transmit buffer size<br>(internal parameter) |

## Telnet3270 Record (for 3270 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 3270 session using the TCP/IP protocol.

To define the Telnet3270 record, use the **Telnet3270** keyword.
For example:

```
Telnet327 = (
        WSName = MY.WS
        HostName = host1
        HostPortNumber = 23
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| AutoReconnect | 1/0 or Y/N | N | Automatically reconnect after logoff |
| HostName | String (up to 64 characters) | — | The 32-bit internet address of a Telnet 3270 host, in dotted decimal notation (for example, 9.68.99.1) or the name of a host, in string (for example, tn3270srv.yamato.ibm.com) |
| HostPortNumber | 1–32767 (integer) | 23 | Target host's Telnet port number |
| TerminalType | 3278, 3279 | 3278 | Terminal type |
| ExtendedColor | 1/0 or Y/N | Y | Enable or disable extended data stream |
| LUname | cccccccc | – | LU name |

## Telnet5250 Record (for 5250 Only)

The field keywords described in the following table are used to configure the parameters required to establish the 5250 session using the TCP/IP protocol.

To define the Telnet5250 record, use the **Telnet5250** keyword.
For example:

```
Telnet525 = (
        WSName = MY.WS
        HostName = host1
        HostPortNumber = 23
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| AutoReconnect | 1/0 or Y/N | N | Automatically reconnect after logoff |

| Keyword | Values | Default | Description |
|---|---|---|---|
| HostName | String (up to 64 characters) | — | The 32-bit internet address of a Telnet 5250 host, in dotted decimal notation (for example, 9.68.99.1) or the name of a host, in string (for example, tn5250srv.yamato.ibm.com) |
| HostPortNumber | 1–32767 (integer) | 23 | Target host's Telnet port number |
| TerminalType | 5555, 3179, 3477 | 3179 | Terminal type |

# GUI and Miscellaneous Record Keywords

This section lists and shows what to specify for each the GUI and the miscellaneous record keyword.

## API Record

The field keywords described in the following table are used to activate and deactivate the APIs provided by PC400.

To define the API record, use the **API** keyword.
For example:

```
API = (
        WSName = MY.WS
        DDE/HLL = Y
        PcCodePage = 819
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| DDE/HLL | 1/0 or Y/N | Y | DDE/HLL is enabled or not |
| PcCodePage | *dddd* | (See Description) | Personal computer code page that is used by API: 437, 813, 819, 850, 852, 855, 857, 860, 861, 863, 865, 866, 869, 897, 915, 1041 |
| DosBoxHll | 1/0 or Y/N | N | Dos Box EHLLAPI(API) is enabled or not |
| SRPI | 1/0 or Y/N | N | SRPI is enabled or not: this keyword is not valid for asynchronous connection (Lynk=Async) |

## AutoDial Record

The field keywords described in the following table are used to control the Automatic Dial utility.

To define the AutoDial record, use the **AutoDial** keyword.
For example:

```
AutoDial = (
        WSName = MY.WS
        DialList = N
        TermDialList = Y
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |

| Keyword | Values | Default | Description |
|---|---|---|---|
| DialList | 1/0 or Y/N | Y | Show AutoDial Utility when dialing |
| TermDialList | 1/0 or Y/N | Y | Exit Auto Dial Utility after connection |
| ManualDial | 1/0 or Y/N | N | Dial a telephone number manually |

## Colors Record

The field keywords described in the following table are used to customize the colors in the session window.

To define the colors record, use the **Colors** keyword.
For example:

```
Colors = (
        WSName = MY.WS
        ForeText = 9 5 11 3 1  9 15 5 11 3 7 3 9 1  3 7 5 3 3 1  9
        BackText =
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| BackText | 0: Black<br>1: Brown<br>2: Gray<br>3: White<br>4: Orange<br>5: Red<br>6: Mustard<br>7: Yellow<br>8: Dark Green<br>9: Green<br>10: Dark Turquoise<br>11: Turquoise<br>12: Dark Blue<br>13: Blue<br>14: Purple<br>15: Pink | (Depends on the display driver) | Specifies the background color by setting the color palette index to the following position:<br>color index integer<br>BackText = xx xx xx xx ... xx<br>1 2 3 4 ... 21<br>Position meaning<br><br>1: Normal, unprotected<br>2: Intensified, unprotected<br>3: Normal, protected<br>4: Intensified, protected<br><br>5: Extended, blue<br>6: Extended, green<br>7: Extended, pink<br>8: Extended, red<br>9: Extended, turquoise<br>1 : Extended, white<br>11: Extended, yellow<br>12: Extended, default highlight<br>13: Extended, default<br><br>14: OIA, status indicators<br>15: OIA, information indicators<br>16: OIA, attention indicators<br>17: OIA, error indicators<br>18: OIA, background<br><br>19: Screen color<br>2 : Divider line<br>21: Rule line |

| Keyword | Values | Default | Description |
|---|---|---|---|
| ForeText | 0: Black<br>1: Brown<br>2: Gray<br>3: White<br>4: Orange<br>5: Red<br>6: Mustard<br>7: Yellow<br>8: Dark green<br>9: Green<br>10: Dark turquoise<br>11: Turquoise<br>12: Dark blue<br>13: Blue<br>14: Purple<br>15: Pink | (Depends on the display driver) | Specifies the foreground color by setting the color palette index to the following position:<br>color index integer<br>ForeText = xx xx xx xx...xx<br>1 2 3 4...21<br>Position meaning<br><br>1: Normal, unprotected<br>2: Intensified, unprotected<br>3: Normal, protected<br>4: Intensified, protected<br><br>5: Extended, blue<br>6: Extended, green<br>7: Extended, pink<br>8: Extended, red<br>9: Extended, turquoise<br>1 : Extended, white<br>11: Extended, yellow<br>12: Extended, default highlight<br>13: Extended, default<br><br>14: OIA, status indicators<br>15: OIA, information indicators<br>16: OIA, attention indicators<br>17: OIA, error indicators<br>18: OIA, background<br><br>19: Screen color<br>2 : Divider line<br>21: Rule line |
| BackGraf | 0: Black<br>1: Brown<br>2: Gray<br>3: White<br>4: Orange<br>5: Red<br>6: Mustard<br>7: Yellow<br>8: Dark green<br>9: Green<br>10: Dark turquoise<br>11: Turquoise<br>12: Dark blue<br>13: Blue<br>14: Purple<br>15: Pink | (Depends on the display driver) | Specifies the background graphic color by setting the color palette index to the following position:<br>color index integer<br>ForeGraf = xx xx xx xx...xx<br>1 2 3 4...17<br>Position meaning<br><br>1: Default<br>2: Blue<br>3: Red<br>4: Pink<br>5: Green<br>6: Turquoise<br>7: Yellow<br>8: White<br>9: Black<br>1 : Dark Blue<br>11: Orange<br>12: Purple<br>13: Dark Green<br>14: Dark Turquoise<br>15: Mustard<br>16: Gray<br>17: Brown |

| Keyword | Values | Default | Description |
|---|---|---|---|
| ForeGraf | 0: Black<br>1: Brown<br>2: Gray<br>3: White<br>4: Orange<br>5: Red<br>6: Mustard<br>7: Yellow<br>8: Dark Green<br>9: Green<br>10: Dark Turquoise<br>11: Turquoise<br>12: Dark Blue<br>13: Blue<br>14: Purple<br>15: Pink | (Depends on the display driver) | Specifies the foreground graphic color by setting the color palette index to the following position:<br>color index integer<br>ForeGraf = xx xx xx xx ... xx<br>1 2 3 4 ... 17<br>Position meaning<br>1: Default<br>2: Blue<br>3: Red<br>4: Pink<br>5: Green<br>6: Turquoise<br>7: Yellow<br>8: White<br>9: Black<br>1 : Dark Blue<br>11: Orange<br>12: Purple<br>13: Dark Green<br>14: Dark Turquoise<br>15: Mustard<br>16: Gray<br>17: Brown |
| BlinkAttr | Same as above | 0 0 | Specifies the blink attribute by setting the color palette index to the following position:<br>color index integer<br>ForeGraf = xx xx<br>1 2<br>Position meaning<br>1: Foreground color for blink<br>2: Background color for blink |

## Graphics Record (for 3270 Only)

The field keywords described in the following table are used to customize the 3270 host graphics capabilities.

To define the graphics record, use the **Graphics** keyword.
For example:

```
Graphics = (
        WSName = MY.WS
        Redraw = Retained
        CursorStyle = 4
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |

| Keyword | Values | Default | Description |
|---|---|---|---|
| Redraw | Bitmap, Retained, Host | Retained | Specifies how displayed pictures are redrawn<br>Bitmap:<br>A bit map is used to redraw.<br>Retained:<br>Redraw is held on retained mode.<br>Host:<br>No redraw is held until the host sends the graphics data. |
| CursorStyle | 1, 2, 3, 4, 5 | 1 | Specifies one of five graphics cursor styles:<br>1: White target<br>2: White cross<br>3: XOR'd target<br>4: XOR'd cross<br>5: XOR'd cross hair |
| CursorMovement | 0, 1 | 0 | Specifies whether the cursor move keys move the text cursor or the graphics cursor.<br>0: Text cursor is moved<br>1: Graphics cursor is moved |

## HotSpot Record

The field keywords described in the following table are used to set up a HotSpot record.

To define the HotSpot record, use the **HotSpot** keyword.
For example:

```
HotSpot = (
        WSName = MY.WS
        template2 = PF nn
        ShowItem  =  PF
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| template1<br>template2<br>template3<br>: | PF PF*nn*<br>PF FP*nn*<br>PF F*nn*<br>PF *nn*<br>macro<br>string<br>cursor | PF PF*nn*<br>PF FP*nn*<br>PF F*nn*<br>PF *nn* | HotSpot template |
| ShowItem | PF<br>macro | None | 3D Hotspot (Show Hotspot) |

## Keyboard Record

The field keywords described in the following table are used to configure the parameters required for the keyboard operation.

To define the keyboard record, use the **Keyboard** keyword.
For example:

**Keyboard** = (
**WSName** = MY.WS
**TypeAHead** = Y
**Language** = United States
)

If you change the Keyboard settings, the [Keyboard] section is added to the workstation profile (*filename*.**WS**) file, where the parameters are specified.

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| TypeAHead | 1/0 or Y/N | Y | "Keyboard Buffering" setting is Yes or No |
| SpotConversion | 1/0 or Y/N | Y | An input window of FEP at the location of the cursor; it works only in a DBCS session |
| Language | *ccccccccccccc* (See *3) | *1 | Language*3 |
| IBMDefaultKeyboard | 1/0 or Y/N | Y | If the user uses customized key mapping, No is set |
| DefaultKeyboard | filename | – | If the user uses customized key mapping, the file name *filename*.**KMP** is written |

| Keyword | Values | Default | Description |
|---|---|---|---|
| CUAKeyboard | 1: 3270<br>2: 5250<br>3: 3270 and 5250 | Corresponds to emulation installed. | Function mapping |

**Note:**

***1** The default value depends on the HostcodePage keyword of the 3270 or 5250 record.
***2** The Japanese keyboard is available only when the personal computer code page is 932 or 942.
***3** Do not include spaces in the keyword value.

| Value of Language | Meaning |
|---|---|
| **Albania** | Albania |
| **Austria** | Austria |
| **Belgium** | Belgium |
| **Bosnia/Herzegovina** | Bosnia/Herzegovina |
| **Brazil(274)** | Brazil 274 (Enhanced only) |
| **Brazil(275)** | Brazil 275 (Enhanced only) |
| **Bulgaria** | Bulgaria (Enhanced only) |
| **Canada (French)** | Canada Bilingual |
| **Croatia** | Croatia |
| **Czech** | Czech (Enhanced only) |
| **Denmark** | Denmark |
| **Finland** | Finland |
| **France(120)** | France 120 (Enhanced only) |
| **France(189)** | France 189 (Enhanced only) |
| **France(251)** | France 251 (Host connected only) |
| **Germany** | Germany |
| **Greece** | Greece (Enhanced only) |
| **Hungary** | Hungary (Enhanced only) |
| **Iceland** | Iceland 197 |
| **Italy(141)** | Italy 141 (Enhanced only) |
| **Italy(142)** | Italy 142 (Enhanced only) |
| **Italy(293)** | Italy 293 (Host connected only) |
| **Japanese***2 | Japan |
| **Latin-America(Spanish)** | Latin America |
| **Macedonia** | FYR Macedonia (Enhanced only) |
| **Netherlands** | Netherlands |
| **Norway** | Norway |
| **Poland** | Poland (Enhanced only) |
| **Portugal** | Portugal |
| **Romania** | Romania (Enhanced only) |
| **Russia(441)** | Russia 441 (Enhanced only) |
| **Russia(443)** | Russia 443 (Enhanced only) |
| **Serbia** | Serbia (Enhanced only) |
| **Slovakia** | Slovakia (Enhanced only) |
| **Slovenia** | Slovenia |
| **Spain** | Spain |
| **Sweden** | Sweden |
| **Switzerland(French)** | Switzerland (French) |
| **Switzerland(German)** | Switzerland (German) |
| **Turkey(179)** | Turkey 179 (Enhanced only) |
| **Turkey(440)** | Turkey 440 (Enhanced only) |
| **Turkey(402)** | Turkey 402 (Host connect only) |
| **United-Kingdom(166)** | United Kingdom 166 |
| **United-Kingdom(168)** | United Kingdom 168 (Enhanced only) |
| **United-States** | United States |
| **System** | For current system language |

## Macro Record

The field keywords described in the following table are used to set up Macro.

To define the macro record, use the **Macro** keyword.
For example:

```
Macro = (
        WSName = MY.WS
        OpenMacro  =  C:\PCOMOS2\PRIVATE\MY.MAC
       )
```

If you change the macro settings, the [Macro] section is added to the workstation profile (*filename*.**WS**) file, and parameters are described there.

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| OpenMacro | filename | – | The specified macro is automatically run when PCSWS.EXE is started. |

## Mouse Record

The field keywords described in the following table are used to customize the mouse.

To define the mouse record, use the **Mouse** keyword.
For example:

```
Mouse = (
        WSName = MY.WS
        IBMDefaultMouse = Y
       )
```

If you change the mouse settings, the [Mouse] section is added to the workstation profile (*filename*.**WS**) file, and parameters are described there.

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| IBMDefaultMouse | 1/0 or Y/N | Y | If the user uses a customized mouse setting, No is set |
| DefaultMouse | filename | – | If the user uses a customized mouse setting, the file name *filename*.**MMP** is written |

## Poppad Record

The field keywords described in the following table are used to customize the pop-up keypad.

To define the pop-up keypad record, use the **Poppad** keyword.
For example:

**Poppad** = (
**WSName** = MY.WS
**StickeyPoppad** = Y
**IBMDefaultPoppad** =
**DefaultPoppad** = C:\PCOMOS2\PRIVATE\MY.PMP
)

If you change the pop-up keypad settings, the [Poppad] section is added to the workstation profile (*filename*.**WS**) file, and parameters are described there.

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| StickeyPoppad | 1/0 or Y/N | N | If Yes is set to it, it is displayed until you explicitly close the poppad. Otherwise, it is automatically closed when you select a function. |
| IBMDefaultPoppad | 1/0 or Y/N | Y | If the user uses a customized poppad, Yes is set. |
| DefaultPoppad | filename | – | If the user uses a customized poppad, the file name *filename*.PMP is written. |

# Printers Record

The field keywords described in the following table are used to configure the parameters required for the printer session and operation.

To define the printers record, use the **printers** keyword.
For example:

**printers** = (
**WSName** = MY.WS
**MPP** = 132
**MPL** = 66
)

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| ATRN | Y/N | Y | ASCII transparent |
| AutoOrient | Y/N | – | Automatic orientation (for 5250 Only) |
| BWSwapPrint | Y/N | Y | Black/white swap print for graphic printer (for 3270 Only) |
| CPI | 0–255 | 0 | Characters per inch |
| Drawer1Form | String | – | Drawer 1 form name |
| Drawer2Form | String | – | Drawer 2 form name |
| Drawer1Orient | COR<br>PORTRAIT<br>LANDSCAPE | COR | Drawer 1 orientation (for 5250 Only) |
| Drawer2Orient | COR<br>PORTRAIT<br>LANDSCAPE | COR | Drawer 2 orientation (for 5250 Only) |
| EnvelopForm | String | – | Envelope hopper form name |
| FFAnyPos | Y/N | N | Specifies if FF is effective at any position on an LU 2, LU 3, or non-SNA session. |
| LPI | 0–255 | 0 | Lines per inch |

| Keyword | Values | Default | Description |
|---|---|---|---|
| Magnification | 1–4 | 1 | Graphics print magnification (for 3270 Only) |
| MPP | 1–255 | 132 | Maximum print position |
| MPL | 1–255 | 66 | Maximum print line |
| noSFLonBBI | Y/N | N | Do not send SFL on BBI. |
| PDT | Y/N | N | PDT mode |
| PDFPATH | Path name | – | PDF file directory |
| PDTPATH | Path name | – | PDT file directory |
| PDTFILE | Path name | – | PDT file name |
| printer | String | – | Current printer driver |
| PRTOPT1 | Y/N | N | Suppress null lines |
| PRTOPT2 | Y/N | Y | Print nulls as spaces |
| PRTOPT3 | Y/N | N | Suppress auto NL CR at MPP+1 (for 3270 Only) |
| PRTOPT4 | Y/N | N | Suppress auto NL NL at MPP+1 (for 3270 Only) |
| PRTOPT5 | Y/N | N | Ignore FF at fist print position (for 3270 Only) |
| PRTOPT6 | Y/N | Y | Print FF as space followed by characters (for 3270 Only) |
| Tractor | Y/N | N | Ignore TM/BM |
| UseDefault | Y/N | Y | Use default settings |
| **Note:** If PDT mode is used, the printer settings in the PDT file are used. | | | |

## Tool Bar Record

The field keywords described in the following table are used to configure the tool bar.

To define the tool-bar record, use the **Toolbar** keyword.
For example:

```
Toolbar = (
        WSName = MY.WS
        BarFile = c:\PCOMOS2\PRIVATE\MY.bnp
       )
```

If you change the tool-bar setting, the [Toolbar] section is added to the workstation profile (*filename*.**WS**) file, and parameters are described there.

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| BarFile | filename | – | The specified tool bar is automatically run when PCSWS.EXE is started. |

## Transfer Record

The field keywords described in the following table are used to configure the parameters required for File Transfer.

To define the transfer record, use the **Transfer** keyword.
For example:

**Transfer** = (
**WSName** = MY.WS
**HostSystem** = 2
**DefaultVMDisk** = a
)

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| HostSystem | 1, 2, 3 (for PC/3270)<br>4 (for PC400) | 2 (for PC/3270)<br>4 (for PC400) | 1=VM 2=MVS 3=CICS 4=OS/400 |
| DefaultVMDisk | a, b, c, d | a | Default VM minidisk (2 characters such as a1 or b2 are also accepted) |
| DefaultDataSet | Data set name | None | Default data set name for MVS/TSO |
| DefaultLibrary | Library name | qgpl | Default library name for OS/400 |
| DefaultDirectory | Directory | PC/3270 or PC400 | Default directory (PC/3270 or PC400 installed directory at initialization) |
| IBMDefaultXlateUp | 1/0 or Y/N | Y | Y=Use IBM translation table for upload<br>N=Use user-defined translation table for upload |
| IBMDefaultXlateDn | 1/0 or Y/N | Y | Y=Use IBM translation table for download<br>N=Use user-defined translation table for download |
| DefaultXlateUp | File name | None | User-defined translation table for upload |
| DefaultXlateDn | File name | None | User-defined translation table for download |
| TimeOut | 20–65535 | 30 | Timeout value (seconds) |
| StatusWindow | 0, 1 | 0 | 0=Show in session window<br>1=Show in icon |
| ClearSession | 1,2,3 | 1 | 1=Default (Clear in VM, CICS)<br>2=Clear<br>3=No clear |
| ListFileExtension | Extension | srl | File extension for list file |
| HostCommand | Command name | None | User-defined host file transfer command name |
| PacketSize | 256–32000 | 12288 | File send or receive buffer size for PC/3270 |
| PCCodePage | Workstation code page | Current code page*1 | Workstation code page |
| XferTypes*XXn* | Type–optional string | *2 | *XX*=VM, MVS, CICS, OS400<br>*n*=1–32 *3 |
| Template*XXn* | Template | *4 | *XX*=VM, MVS, CICS, OS400<br>*n*=1–32 |
| ResumeSendFileName | File name | None | Resume file name for upload |
| ResumeRecvFileName | File name | None | Resume file name for download |
| EnhancedProtocol | 1/0 or Y/N | Y | Y = Use enhanced protocol<br>N = Use normal protocol<br>Only available for IBM Global Network Connection |

**Note:**

***1** SBCS session current PC Code Page 932/942 for DBCS (Japan) session.
***2** In Personal Communications, the default types of “text,” “binary,” “append”(except CICS) are predefined.
***3** In Personal Communications, the types are defined in the format, for example, XferTypesMVS1=text ( JISCII CRLF RECFM(V) LRECL(133) )
***4** In Personal Communications, there are many templates predefined initially.

## Window Record

The field keywords described in the following table are used to customize the session window.

To define the window record, use the **Window** keyword.
For example:

```
Window = (
        WSName = MY.WS
        SessFlags = 8C68
        ViewFlags = 4E
       )
```

| Keyword | Values | Default | Description |
|---|---|---|---|
| WSName | Workstation profile name | MY.WS | Workstation profile name |
| SessFlags | *xxxx* | 8C68 | Specifies the session window status in 4 hexadecimal digits:<br>**0001** Mouse pointer shape is +<br>**0002** Dotted column separator<br>**0004** Maximized without title bar<br>**0008** Cursor shape is underlined<br>**0010** Beep for valid key type<br>**0020** Beep for incorrect key type<br>**0040** Application program makes beep<br>**0080** Update alarm is on<br>**0100** Trim rect with sizing handles<br>**0200** Trim rect remains for edit<br>**0400** Nonblinking cursor<br>**0800** Row/column indicator is on<br>**1000*1** 3270 numeric lock is on<br>**2000** User-defined title for icon<br>**4000** User-defined icon is used<br>**8000** (Reserved) |
| ViewFlags | *xxxx* | 4E00 | Specifies the session window appearance status in 4 hexadecimal digits:<br>**0001**<br>\| (Not used)<br>**0080**<br>**0100** Rule line is on<br>**0200** Rule line follows cursor<br>**0400** Rule line style: horizontal<br>**0800** Rule line style: vertical<br>**1000*2** SO/SI display is on<br>**2000*2** Alternate viewing mode<br>**4000** Scroll with scroll bar<br>**8000** (Reserved) |
| CaptionFormat | *xxxx c* | 2A '-' | Specifies the format of the caption title of the session window in 4 hexadecimal digits and one character:<br>**0001** Session short name<br>**0002** Session long name<br>**0004** Alternative name<br>**0008** Session dimension (R x C)<br>**0010** Status (DDE or USER)<br>**0020** Separator is used<br>**0040** Session type (not used)<br>**0080** Session profile name<br>**0100** Application program in use<br>*c* Used as a separator for the above elements |

| Keyword | Values | Default | Description |
|---|---|---|---|
| UserTitle | (string) | PCSWS | Specifies the session alternative name used in the above setting |
| IconTitle | (string) | (null) | Specifies the caption title of the iconic session window |
| IconFile | filename index | PCSWS.EXE 1 | Specifies the file name and icon index in which the icon is used when the session window is iconic |
| InsertCursor | 1/0 or Y/N | N | Specifies whether the insert cursor is enabled. The insert cursor has a half-block shape in insert mode. |
| MFIcolor | 1/0 or Y/N | N | Specifies whether the MFI color palette is to be used for the display driver that can display more than 16 colors |
| **Note:**<br>***1** 3270 only.<br>***2** DBCS only. | | | |

# Chapter 6. Modems

This chapter contains information about modems that the Auto-Dial Utility supports.

## Asynchronous Modem Information

Modems must have certain characteristics to work properly with asynchronous communications. You can change the characteristics of most modems by switch settings, commands from the workstation, or both:

The modem must break the connection to the remote system ("hang up") and return to its initial state when the 'data terminal ready (DTR)' line is turned off and then turned back on.

The modem must turn off the 'carrier detect (CD)' line when it loses the connection to the remote system.

An autodial modem must send result codes to the workstation.

## US Robotics Sportster 14.4 External Modem

When specifying the line speed in the link parameters of Personal Communications, use a speed other than 14,400 bps, due to a hardware limitation.

## IBM ASYNC/SDLC V.32 Modem/A Modem

If you connect to AS/400 via SNA-over-Async when using this modem, the connection might fail. If this happens, save the Personal Communications default configuration command for this modem to the modem's profile-0.

## Synchronous Modem Information

To use the Automatic Dial Facility with SDLC attachment, you need a synchronous modem that is based on ITU-T recommendation V.25 bis and has the Automatic Dial Facility.

## Command and Indication

For V.25 bis, *command* means the data that is transferred from data terminal equipment, or terminal (DTE) to data circuit-terminating equipment, or modem (DCE), and *indication* means the data transferred from a modem to a terminal.

3270 and 5250 sessions support the following commands and indications:

**Command**

**CRN** Automatic transmission by specifying a telephone number.

Format: **CRN**xxx...xxx
(xxx...xxx is a telephone number.)

**CRS** Automatic transmission by specifying a shortened dial number.

Format: **CRS**xxx...xxx
(xxx...xxx is a shortened dial number.)

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**CRI** Automatic transmission by specifying a telephone number and an ID number.

Format: **CRI**xxx...xxx
(xxx...xxx is a telephone number and an ID number.)

**Indication**

**INV** Shows that the modem received a command that is not valid.

**VAL** Shows that the modem sent a valid command.

**CFI** Shows that the automatic transmission failed.

**CNX** Shows that the connection is successful.

## Dial Character

A character used for dialing is called the *dial character*. The following characters can be used as the dial character:

Any number from 0 to 9
; / * # : = < > – ( )
space
F, N, V

**Note:** You can use the dial characters only when they are supported by the modems you use.

## NEC ITM2400mkII Modem

The memory switch settings for the NEC** ITM2400mkII modems are:

AUTODIAL On
HDLC

The modem dial command designed for the NEC ITM2400mkII modem is:

**CRN/tn**

where /**tn** is the value you entered for the **Telephone number** option. For example, if you enter **123456** for the telephone number, the command designed is **CRN123456**.

You need not specify dial answering. The Automatic Dial Facility identifies the modem signal and then confirms the connection.

## Hitachi High-Speed Hybrid Telephone

The settings for the Hitachi** high-speed hybrid telephone modems are:

AA mode
V.25 bis synchronous HDLC

The setting for synchronous data format of the automatic send/receive procedure should be same as that for data bit and parity of the Automatic Dial Facility.

The modem dial command designed for the Hitachi high-speed hybrid telephone modem is:

**CRN/tn**

where /**tn** is the value you entered for the **Telephone number** option. For example, if you enter **123456** for the telephone number, the command designed is **CRN123456**.

You need not specify the dial answering indication. The Automatic Dial Facility identifies the modem signal and then confirms the connection.

## IBM7855-10 Modem

The setting for the IBM7855-10 modems is:

Synchronous

The modem dial command designed for the IBM7855-10 modem is:

**CRN/tn**

where /**tn** is the value you entered for the **Telephone number** option. For example, if you enter **123456** for the telephone number, the command designed is **CRN123456**.

You need not specify the dial answering. The Automatic Dial Facility identifies the modem signal and then confirms the connection.

**Note:** When the 1988 indicator is selected for the V.25 bis extended function, **CNX** (which indicates that the connection is established) is returned. Specify **CNX** as the dial answering indication.

## Modems

# Chapter 7. Code Pages

This chapter contains information useful in providing national language support.

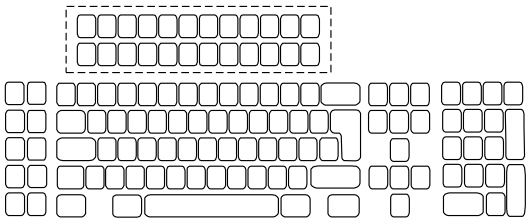
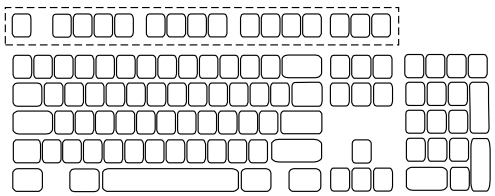
The **Country** option defaults to the current OS/2 country code. The countries are listed in “Country Codes” on page 7-2; the actual list available to you might vary.

The **PC code page** option defaults to the current active code page. The **Host code page** option defaults to the one for the keyboard country. The PC and Host code page options are listed in “Code Pages and Character Sets” on page 7-5.

For the **Keyboard type** option, the following selections are available:

**Host-connected** Host-connected keyboard (122-key)
**Enhanced** Enhanced keyboard.

*Table 7-1. Keyboard Types*

| **Keyboard type (characteristics)** | **Figure** |
|---|---|
| Host Connected (dual-row function keys) |  |
| Enhanced (single-row function keys) |  |

Personal Communications matches the keyboard type that you are using by interrogating the BIOS of the workstation. If the keyboard type setting does not match what is actually used, the key mapping will be incorrect.

**Note:** If you are using one type of keyboard to configure an installation for use on systems with another keyboard type, select the keyboard type of the ***target*** system.

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# Country Codes

The following table shows the country codes.

*Table 7-2. Country Code*

| Country | Country Code |
|---|---|
| Albania | 355 |
| Austria | 043 |
| Belgium | 032 |
| Bosnia/Herzegovina | 387 |
| Brazil | 055 |
| Bulgaria | 359 |
| Canada (Bilingual) | 002 |
| Croatia | 385 |
| Czech | 421 |
| Denmark | 045 |
| Finland | 358 |
| France | 033 |
| FYR Macedonia | 389 |
| Germany | 049 |
| Greece | 030 |
| Hungary | 036 |
| Iceland | 354 |
| Italy | 039 |
| Latin America | 003 |
| Netherlands | 031 |
| Norway | 047 |
| Poland | 048 |
| Portugal | 351 |
| Romania | 040 |
| Russia | 007 |
| Serbia/Montenegro | 381 |
| Slovakia | 422 |
| Slovenia | 386 |
| Spain | 034 |
| Sweden | 046 |
| Switzerland | 041 |
| Turkey | 090 |
| United Kingdom | 044 |
| U.S. | 001 |

## Keyboard Country ID and Shift Support

The following table shows the keyboard country ID and shift support for each country.

*Table 7-3 (Page 1 of 2). Keyboard Country ID and Shift Support*

| Keyboard Country | Enhanced Keyboard ID | Enhanced Keyboard Lock Mode | Host-Connected Keyboard ID | Host-Connected Keyboard Lock Mode |
|---|---|---|---|---|
| Albania | 448 | C | 452 | C |
| Austria | 129 | S | 129 | S |
| Belgium | 120 | S | 120 | S |
| Bosnia/Herzegovina | 234 | C | 234* | S |
| Brazil (274) | 274 | C | – | – |
| Brazil (275) | 275 | C | – | – |
| Bulgaria | 442 | C | – | – |
| Canada (Bilingual) | 058 | C | 277 | S |
| Croatia | 234 | C | 234* | S |
| Czech | 243 | C | – | – |
| Denmark | 159 | C | 281 | S |
| Finland | 153 | C | 285 | S |
| France (120) | 120 | C | – | – |
| France (189) | 189 | S | 251 | S |
| France (251) | 189 | S | 251 | S |
| FYR Macedonia | 449 | C | – | – |
| Germany | 129 | S | 129 | S |
| Greece | 319 | S | – | – |
| Hungary | 208 | C | – | – |
| Iceland | 197 | C | 197 | S |
| Italy (141) | 141 | C | – | – |
| Italy (142) | 142 | C | 293 | S |
| Italy (293) | 142 | C | 293 | S |
| Latin America (Spanish) | 171 | C | 309 | S |
| Netherlands | 143 | C | 101 | S |
| Norway | 155 | C | 281N | S |
| Poland | 214 | C | – | – |
| Portugal | 163 | C | 163 | S |
| Romania | 446 | C | – | – |
| Russia (441) | 441 | C | – | – |
| Russia (443) | 443 | C | – | – |
| Serbia/Montenegro | 450 | C | – | – |
| Slovakia | 245 | C | – | – |
| Slovenia | 234 | C | 234* | S |
| Spain | 173 | C | 071 | S |
| Sweden | 153 | C | 285 | S |
| Switzerland (French) | 150F | C | 150F | S |
| Switzerland (German) | 150G | C | 150G | S |

*Table 7-3 (Page 2 of 2). Keyboard Country ID and Shift Support*

| Keyboard Country | Enhanced Keyboard ID | Enhanced Keyboard Lock Mode | Host-Connected Keyboard ID | Host-Connected Keyboard Lock Mode |
|---|---|---|---|---|
| Turkey (179) | 179 | C | – | – |
| Turkey (402) | – | – | 402* | S |
| Turkey (440) | 440 | C | – | – |
| United-Kingdom (166) | 166 | C | 166 | C |
| United-Kingdom (168) | 168 | C | – | – |
| United-States | 101G | C | 101 | S |

**Note:**

| | |
|---|---|
| **X** | Selectable |
| **–** | Not selectable |
| **S** | Shift lock on key 30 |
| **C** | Caps lock on key 30 |
| * | Supports OS/2 mode emulators |

# Code Pages and Character Sets

The following table shows the code pages and character sets.

*Table 7-4. Code Pages and Character Sets*

| Country | Host CPGID/GCSGID | PC CPGID/GCSGID |
|---|---|---|
| Albania | 500-1/697-1 | 850/980 or 437/919 |
| Austria | 273-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Belgium | 500-1/697-1 | 437/919 or 850/980 |
| Bosnia/Herzegovina | 870/959 | 852/982 or 850/980 |
| Brazil | 037-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Bulgaria | 1025/1150 | 850/980 or 915/1150 |
| Canada (Bilingual) | 037-1/697-1 or 500-1/697-1 | 863/993 or 850/980 |
| Croatia | 870/959 | 852/982 or 850/980 |
| Czech | 870/959 | 852/982 or 850/980 |
| Denmark | 277-1/697-1 or 500-1/697-1 | 865/996 or 850/980 |
| Finland | 278-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| France | 297-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| FYR Macedonia | 1025/1150 | 855/985 or 850/980 |
| Germany | 273-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Greece | 875/925 | 869/998 |
| Hungary | 870/959 | 852/982 or 850/980 |
| Iceland | 871-1/697-1 or 500-1/697-1 | 861/991 or 850/980 |
| Italy | 280-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Latin-America (Spanish) | 284-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Netherlands | 037-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Norway | 277-1/697-1 or 500-1/697-1 | 865/995 or 850/980 |
| Poland | 870/959 | 852/982 or 850/980 |
| Portugal | 037-1/697-1 or 500-1/697-1 | 860/990 or 850/980 |
| Romania | 870/959 | 852/982 or 850/980 |
| Russia | 1025/1150 | 866/996 or 850/980 |
| Serbia/Montenegro | 1025/1150 | 855/985 or 850/980 |
| Slovakia | 870/959 | 852/982 or 850/980 |
| Slovenia | 870/959 | 852/982 or 850/980 |
| Spain | 284-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Sweden | 278-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Switzerland (French) | 500-1/697-1 | 437/919 or 850/980 |
| Switzerland (German) | 500-1/697-1 | 437/919 or 850/980 |
| Turkey | 1026/1152 | 857/987 or 850/980 |
| United-Kingdom | 285-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| United-States | 037-1/697-1 or 500-1/697-1 | 437/919 or 850/980 |
| Multinational | 500-1/697-1 | 850/980 |

**Note:**

**X** Selectable
**–** Not selectable

# Host Code Page Tables

This section provides the host code page for each country.

## Host Code Page 037-1/697-1 Brazil, Canada, Netherlands, Portugal, U.S.

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ^ | { | } | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ~ | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | ¢ | ! | ¦ | : | « | ª | ¡ | [ | ¯ (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | # | » | º | ¿ | ] | ô | û | Ô | Û |
| -C | < | * | % | @ | ð | æ | Ð | ¯ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | \| | ¬ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 273-1/697-1 Austria, Germany

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | ä | ü | Ö | 0 |
| -1 | (RSP) | é | / | É | a | j | ß | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | { | ë | [ | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | @ | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ~ | Ñ | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | Ä | Ü | ö | : | « | ª | ¡ | ¬ |  (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | # | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | § | ð | æ | Ð | ¯ | ¦ | } | \ | ] |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 277-1/697-1 Denmark, Norway

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ¦ | @ | ° | µ | ¢ | æ | å | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ü | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | } | ï | $ | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | # | ¤ | ø | : | « | ª | ¡ | ¬ |  (SHY) | 1 | 2 | 3 |
| -B | . | Å | , | Æ | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | Ø | ð | { | Ð | ¯ | ö | ~ | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | [ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ] | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 278-1/697-1 Finland, Sweden

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | ä | å | É | 0 |
| -1 | (RSP) | ` | / | \ | a | j | ü | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | { | ë | # | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | [ | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | } | ï | $ | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | é | i | r | z | ¾ | I | R | Z | 9 |
| -A | § | ¤ | ö | : | « | ª | ¡ | ¬ |  (SHY) | ¹ | ² | ³ |
| -B | . | Å | , | Ä | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | Ö | ð | æ | Ð | ¯ | ¦ | ~ | @ | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ] | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 280-1/697-1 Italy

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | [ | µ | ¢ | à | è | ç | 0 |
| -1 | (RSP) | ] | / | É | a | j | ì | # | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | { | } | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | @ | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | \ | ~ | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ù | i | r | z | ¾ | I | R | Z | 9 |
| -A | ° | é | ò | : | « | ª | ¡ | ¬ | ¯ (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | £ | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | § | ð | æ | Ð | ¯ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ¦ | ` | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 284-1/697-1 Latin America (Spanish), Spain

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | { | } | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ¨ | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ¦ | ß | # | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | [ | ] | ñ | : | « | ª | ¡ | ^ |  (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | Ñ | » | º | ¿ | ! | ô | û | Ô | Û |
| -C | < | * | % | @ | ð | æ | Ð | ¯ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ~ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | \| | ¬ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 285-1/697-1 United Kingdom

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | { | } | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ¯ | [ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | $ | ! | ¦ | : | « | ª | ¡ | ^ | ¯ (SHY) | 1 | 2 | 3 |
| -B | . | £ | , | # | » | º | ¿ | ] | ô | û | Ô | Û |
| -C | < | * | % | @ | ð | æ | Ð | ~ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | \| | ¬ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 297-1/697-1 France

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | [ | ` | ¢ | é | è | ç | 0 |
| -1 | (RSP) | { | / | É | a | j | ¨ | # | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | @ | } | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | ] | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | \ | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | µ | i | r | z | ¾ | I | R | Z | 9 |
| -A | ° | § | ù | : | « | ª | ¡ | ¬ |  (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | £ | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | à | ð | æ | Ð | ¯ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ~ | ò | ¦ | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 500-1/697-1 International

This code page is used in the following countries: Austria, Belgium, Canada (French), Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | { | } | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ~ | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ` | i | r | z | ¾ | I | R | Z | 9 |
| -A | [ | ] | ¦ | : | « | ª | ¡ | ¬ |  (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | # | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | @ | ð | æ | Ð | ¯ | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | þ | Æ | Þ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 870/959 Latin 2 - EBCDIC Multilingual

The column indicates the first digit, and the row indicates the second digit.

| | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ˅ | ˘ | ° | ą | ˙ | { | } | \ | 0 |
| -1 | (RSP) | é | / | É | a | j | ~ | Ą | A | J | ÷ | 1 |
| -2 | â | ę | Â | Ę | b | k | s | ż | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | Ţ | C | L | T | 3 |
| -4 | ţ | ů | ″ | Ů | d | m | u | Ż | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ă | î | Ă | Î | f | o | w | ž | F | O | W | 6 |
| -7 | č | Ĺ | Č | Ľ | g | p | x | ź | G | P | X | 7 |
| -8 | ç | Í | Ç | Ĺ | h | q | y | Ž | H | Q | Y | 8 |
| -9 | ć | ß | Ć | ˋ | i | r | z | Ź | I | R | Z | 9 |
| -A | [ | ] | \| | : | ś | ł | Ś | Ł | (SHY) | Ě | ď | Ď |
| -B | . | $ | , | # | ň | ń | Ň | Ń | ô | ű | Ô | Ű |
| -C | < | * | % | @ | đ | š | Đ | Š | ö | ü | Ö | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ŕ | ť | Ŕ | Ť |
| -E | + | ; | > | = | ř | ˛ | Ř | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | " | ş | ¤ | Ş | × | ő | ě | Ő | (EO) |

## Host Code Page 871-1/697-1 Iceland

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | þ | æ | ´ | 0 |
| -1 | (RSP) | é | / | É | a | j | ö | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | ç | ì | Ç | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ð | i | r | z | ¾ | I | R | Z | 9 |
| -A | Þ | Æ | ¦ | : | « | ª | ¡ | ¬ |  (SHY) | ¹ | ² | ³ |
| -B | . | $ | , | # | » | º | ¿ | \| | ô | û | Ô | Û |
| -C | < | * | % | Ð | ` | { | @ | ¯ | ~ | ü | ^ | Ü |
| -D | ( | ) | _ | ' | ý | ¸ | Ý | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | { | ] | [ | \ | ó | ú | Ó | Ú |
| -F | ! | Ö | ? | " | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 875/925 Greek

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ¨ | ΅ | ° | ΄ | £ | { | } | \ | 0 |
| -1 | A | K | / | Ά | a | j | ~ | ά | A | J |  | 1 |
| -2 | B | Λ | T | Έ | b | k | s | έ | B | K | S | 2 |
| -3 | Γ | M | Y | Ή | c | l | t | ή | C | L | T | 3 |
| -4 | Δ | N | Φ | (RSP) | d | m | u | ϊ | D | M | U | 4 |
| -5 | E | Ξ | X | Ί | e | n | v | ί | E | N | V | 5 |
| -6 | Z | O | Ψ | Ό | f | o | w | ό | F | O | W | 6 |
| -7 | H | Π | Ω | Ύ | g | p | x | ύ | G | P | X | 7 |
| -8 | Θ | P | Ϊ | Ώ | h | q | y | ϋ | H | Q | Y | 8 |
| -9 | I | Σ | Ÿ | ` | i | r | z | ώ | I | R | Z | 9 |
| -A | [ | ] | \| | : | α | η | ν | ς | (SHY) | ± | ² | ³ |
| -B | . | $ | , | # | β | θ | ξ | τ | ω | ½ | § | © |
| -C | < | * | % | @ | γ | ι | ο | υ | ΐ |  |  |  |
| -D | ( | ) | _ | ' | δ | κ | π | φ | ΰ | · |  |  |
| -E | + | ; | > | = | ε | λ | ρ | χ | ‘ | ’ | « | » |
| -F | ! | ^ | ? | " | ζ | μ | σ | ψ | — | ¦ | ¬ | (EO) |

## Host Code Page 1025/1150 Russian

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | | ц | й | я | ь | { | } | \ | 0 |
| -1 | (RSP) | | / | | a | j | ~ | ы | A | J | § | 1 |
| -2 | | | | | b | k | s | з | B | K | S | 2 |
| -3 | | | Ё | | c | l | t | ш | C | L | T | 3 |
| -4 | ё | | Є | Ў | d | m | u | э | D | M | U | 4 |
| -5 | є | ў | | | e | n | v | щ | E | N | V | 5 |
| -6 | | | | ю | f | o | w | ч | F | O | W | 6 |
| -7 | | Ъ | Ї | a | g | p | x | ъ | G | P | X | 7 |
| -8 | ї | № | | б | h | q | y | Ю | H | Q | Y | 8 |
| -9 | | | | ` | i | r | z | А | I | R | Z | 9 |
| -A | [ | ] | \| | : | д | к | р | Б | Х | Н | Т | З |
| -B | . | $ | , | # | е | л | с | Ц | И | О | У | Ш |
| -C | < | * | % | @ | ф | м | т | Д | Й | П | Ж | Э |
| -D | ( | ) | _ | ' | г | н | у | Е | К | Я | В | Щ |
| -E | + | ; | > | = | х | о | ж | Ф | Л | Р | Ь | Ч |
| -F | ! | ^ | ? | " | и | п | в | Г | М | С | Ы | (EO) |

## Host Code Page 1025/1150 Cyrillic (Except Russian)

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | Њ | ц | й | я | ь | { | } | \ | 0 |
| -1 | (RSP) | Љ | / | Ћ | a | j | ~ | ы | A | J | § | 1 |
| -2 | ђ | њ | Ѓ | Ќ | b | k | s | з | B | K | S | 2 |
| -3 | ѓ | ћ | Ё | (SHY) | c | l | t | ш | C | L | T | 3 |
| -4 | ё | ќ | Є | Ў | d | m | u | э | D | M | U | 4 |
| -5 | є | ў | S | Џ | e | n | v | щ | E | N | V | 5 |
| -6 | s | ц | I | ю | f | o | w | ч | F | O | W | 6 |
| -7 | i | Ъ | Ї | a | g | p | x | ъ | G | P | X | 7 |
| -8 | ї | № | J | б | h | q | y | Ю | H | Q | Y | 8 |
| -9 | j | Ђ | Љ | ` | i | r | z | А | I | R | Z | 9 |
| -A | [ | ] | \| | : | д | к | р | Б | Х | Н | Т | З |
| -B | . | $ | , | # | е | л | с | Ц | И | О | У | Ш |
| -C | < | * | % | @ | ф | м | т | Д | Й | П | Ж | Э |
| -D | ( | ) | _ | ' | г | н | у | Е | К | Я | В | Щ |
| -E | + | ; | > | = | х | о | ж | Ф | Л | Р | Ь | Ч |
| -F | ! | ^ | ? | " | и | п | в | Г | М | С | Ы | (EO) |

## Host Code Page 1026/1 Latin 5 - Turkey

The column indicates the first digit, and the row indicates the second digit.

| | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | & | - | ø | Ø | ° | µ | ¢ | ç | ğ | ü | 0 |
| -1 | (RSP) | é | / | É | a | j | ö | £ | A | J | ÷ | 1 |
| -2 | â | ê | Â | Ê | b | k | s | ¥ | B | K | S | 2 |
| -3 | ä | ë | Ä | Ë | c | l | t | · | C | L | T | 3 |
| -4 | à | è | À | È | d | m | u | © | D | M | U | 4 |
| -5 | á | í | Á | Í | e | n | v | § | E | N | V | 5 |
| -6 | ã | î | Ã | Î | f | o | w | ¶ | F | O | W | 6 |
| -7 | å | ï | Å | Ï | g | p | x | ¼ | G | P | X | 7 |
| -8 | { | ì | [ | Ì | h | q | y | ½ | H | Q | Y | 8 |
| -9 | ñ | ß | Ñ | ı | i | r | z | ¾ | I | R | Z | 9 |
| -A | Ç | Ğ | ş | : | « | ª | ¡ | ¬ | (SHY) | ¹ | ² | ³ |
| -B | . | İ | , | Ö | » | º | ¿ | | ô | û | Ô | Û |
| -C | < | * | % | Ş | } | æ | ] | ¯ | ~ | \ | # | " |
| -D | ( | ) | _ | ' | ` | ¸ | $ | ¨ | ò | ù | Ò | Ù |
| -E | + | ; | > | = | ¦ | Æ | @ | ´ | ó | ú | Ó | Ú |
| -F | ! | ^ | ? | Ü | ± | ¤ | ® | × | õ | ÿ | Õ | (EO) |

## Host Code Page 00310 APL/TEXT

The column indicates the first digit, and the row indicates the second digit.

| Hex Digits 1st → 2nd ↓ | 4- | 5- | 6- | 7- | 8- | 9- | A- | B- | C- | D- | E- | F- |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -0 | (SP) | | | ◇ | ~ | □ | ¯ | α | { | } | ≡ | 0 |
| -1 | A | J | | ∧ | \| \| | ▮ | ° | ∈ | ( | ) | 1 | 1 |
| -2 | B | K | S | ¨ | ═ | ▮ | ⊟ | ι | + | - | 2 | 2 |
| -3 | C | L | T | ⊡ | \| | ▬ | ● | ρ | ■ | ⊞ | 3 | 3 |
| -4 | D | M | U | ⍳ | \| | ▬ | n | ω | ⊔ | ⊔ | | 4 |
| -5 | E | N | V | ⍷ | \| | ■ | | | ⊓ | ⊓ | | 5 |
| -6 | F | O | W | ⊢ | | | | × | ⊢ | ⊣ | | 6 |
| -7 | G | P | X | ⊣ | | | | \ | ⊣ | ⊢ | | 7 |
| -8 | H | Q | Y | ∨ | | | | ÷ | § | ¶ | | 8 |
| -9 | I | R | Z | | | | | | | | | 9 |
| -A | | | | | ↑ | ⊃ | ∩ | ∇ | ⍲ | ⌶ | ≠ | |
| -B | | | | | ↓ | ⊂ | ∪ | ∆ | ⍱ | ! | ⍀ | ⍒ |
| -C | | | | | ≤ | ⍞ | ⊥ | ⊤ | ⍞ | ⍕ | ⍨ | ⍋ |
| -D | | | | | ⌈ | ○ | [ | ] | ⌽ | ⍋ | ⊖ | ⍟ |
| -E | | | | | ⌊ | ± | ≥ | ≠ | ⍉ | ⍞ | ⍟ | ⍎ |
| -F | | | | | → | ← | ∘ | \| | ⍉ | ⍝ | ⍕ | (EO) |

## APL/TEXT

# Chapter 8. Keyboards

This chapter describes the keyboards supported by the host system and Personal Communications. You select the keyboards during installation or customization procedures. You can use keyboard layouts to locate character positions or functions assignments on the keyboard.

## Character Positions

Depending on the country language selected, different characters can appear in different key positions. Refer to *IBM OS/2 Keyboards and Code Pages* and *Personal System/2 National Language Supplement* for more information about the country and code page options. Ask your system administrator for information about host code pages.

The character positions, depending on the country language, are the same as those for OS/2, except the PS/2 101 keyboard.

Following is the character layout for the PS/2 101 keyboard:

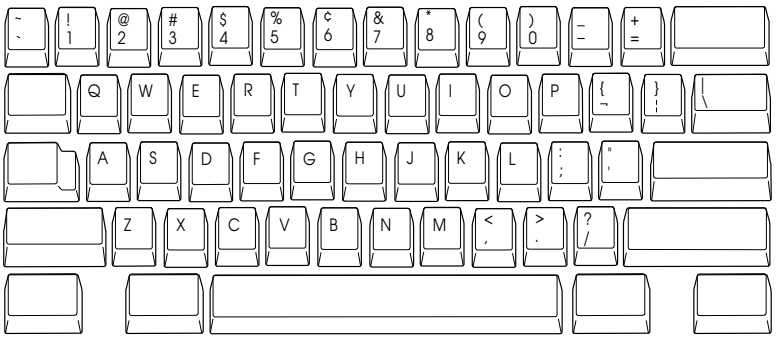


*Figure 8-1. PS/2 101 Keyboard*

For keys with three or four characters shown, use the key combinations in the following table to produce the desired upper-right and lower-right characters. Lower-left characters require no additional keys. Use the shift key for upper-left characters.

| Country | Lower-right character Enhanced template | Upper-right character all templates |
|---|---|---|
| Denmark<br>Finland<br>Norway<br>Sweden | **AltGr** | **Ctrl** |
| All others | **AltGr** | None |

Implementation of the diacritic keys for the Enhanced keyboard is the same as in OS/2.

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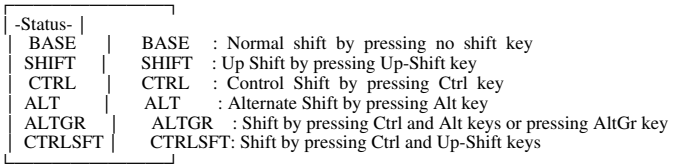
## Default Key Functions Mapping (Keyboard Layout)

The functions are positioned in the following shift status.




## Key Function Abbreviations for PC/3270

Following are the abbreviations of the functions:

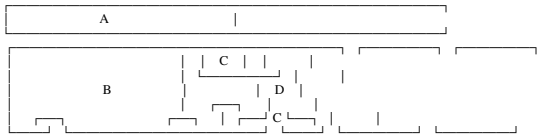
| Face Name | Function Name |
|---|---|
| **AltCr** | Alternate Cursor |
| **Apl** | APL |
| **Attn** | Attention |
| **BackSp** | Backspace |
| **BackTab** | Backtab |
| **BackWd** | Backtab Word |
| **Blue** | Color Blue |
| **Break** | Break |
| **ChgFmt** | Change Format Toggle |
| **ChgScr** | Change Screen |
| **Clear** | Clear Screen |
| **CrBnk** | Cursor Blink |
| **CrSel** | Cursor Select |
| **Delete** | Delete Character |
| **DelWd** | Delete Word |
| **Doc** | Document Mode Toggle |
| **Down** | Cursor Down |
| **Dup** | Dup Field |
| **EditCopy** | Edit Copy |
| **EditCut** | Edit Cut |
| **EditPst** | Edit Paste |
| **EditUndo** | Edit Undo |
| **EndFld** | End Field |
| **Enter** | Enter |
| **Entr/Ctl** | Enter/Control |
| **ErEOF** | Erase EOF |
| **ErFld** | Erase Field |
| **ErInp** | Erase Input |

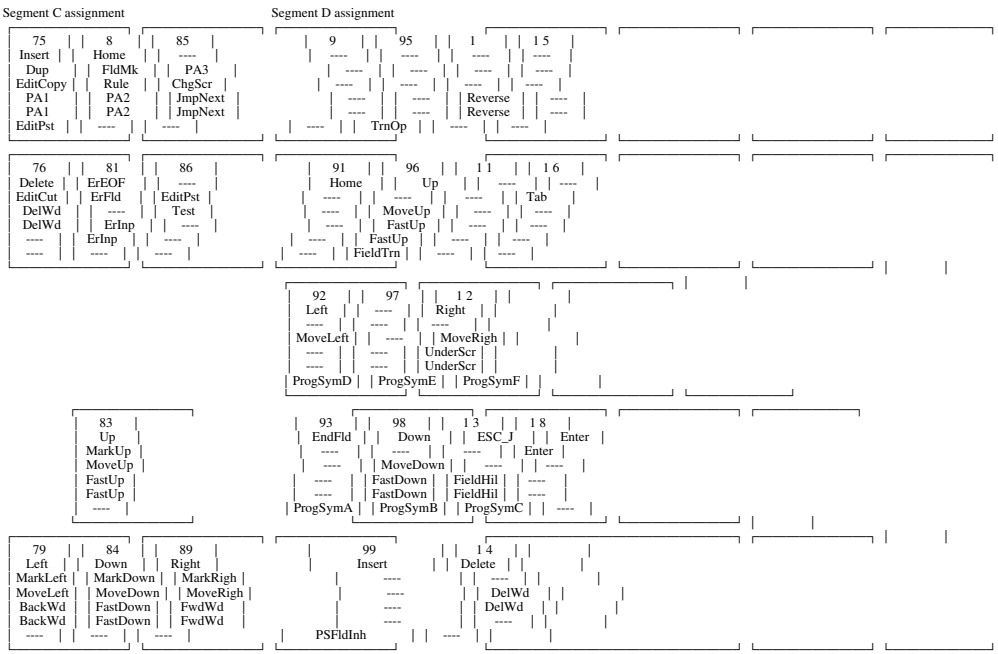
| Face Name | Function Name |
|---|---|
| **FastDown** | Fast Cursor Down |
| **FastUp** | Fast Cursor Up |
| **FieldCol** | Color Field Inherit |
| **FieldHil** | Highlighting Field Inherit |
| **PSFldInh** | PS Field Inherit |
| **FieldTrn** | Transparency Field Inherit |
| **FldMk** | Field Mark |
| **FwdWd** | Tab Word |
| **Green** | Color Green |
| **GrpCsr** | Graphic Cursor |
| **Home** | Home |
| **Insert** | Insert Toggle |
| **JmpNext** | Jump Next Session |
| **Left** | Cursor Left |
| **LightPen** | Light Pen |
| **MarkDown** | Mark Down |
| **MarkLeft** | Mark Left |
| **MarkRigh** | Mark Right |
| **MarkUp** | Mark Up |
| **MoveDown** | Move Mark Down |
| **MoveLeft** | Move Mark Left |
| **MoveRigh** | Move Mark Right |
| **MoveUp** | Move Mark Up |
| **NewLine** | New Line |
| **Pause** | Pause |
| **PA1** | Program Attention Key 1 |
| **PA2** | Program Attention Key 2 |
| **PA3** | Program Attention Key 3 |
| **PF1 – 24** | Program Function Key 1 – 24 |
| **Pink** | Color Pink |
| **Play** | Play |
| **ProgSymA–ProgSymF** | Programmed Symbol A–F |
| **Quit** | Quit |
| **Record** | Record |
| **Red** | Color Red |
| **Rest/Ctl** | Reset/Control |
| **Reverse** | Highlighting Reverse |
| **Right** | Cursor Right |
| **RTM** | Response Time Monitor |

| Face Name | Function Name |
|---|---|
| **Rule** | Rule |
| **SysRq** | System Request |
| **Tab** | Tab Field |
| **Test** | Test |
| **TrnOp** | Transparency Opaque |
| **Turquois** | Color Turquoise |
| **Underscr** | Highlighting Underscore |
| **Up** | Cursor Up |
| **White** | Color White |
| **WordWrap** | Word Wrap Toggle |
| **Yellow** | Color Yellow |
| **ACK** | Ctrl-F (ACK) |
| **BEL** | Ctrl-G (BEL) |
| **BS** | Ctrl-H (BS) |
| **CAN** | Ctrl-X (CAN) |
| **CR** | Ctrl-M (CR) |
| **DC1** | Ctrl-Q (DC1) |
| **DC2** | Ctrl-R (DC2) |
| **DC3** | Ctrl-S (DC3) |
| **DC4** | Ctrl-T (DC4) |
| **DLE** | Ctrl-P (DLE) |
| **EM** | Ctrl-Y (EM) |
| **ENQ** | Ctrl-E (ENQ) |
| **EOT** | Ctrl-D (EOT) |
| **ESC** | Ctrl-[ (ESC) |
| **ESC_J** | ESC_J |
| **ETB** | Ctrl-W (ETB) |
| **ETX** | Ctrl-C (ETX) |
| **FF** | Ctrl-L (FF) |
| **FS** | Ctrl- (FS) |
| **GS** | Ctrl-] (GS) |
| **HT** | Ctrl-I (HT) |
| **LF** | Ctrl-J (LF) |
| **NAK** | Ctrl-U (NAK) |
| **NUL** | Ctrl-@ (NUL) |
| **RS** | Ctrl- (RS) |
| **SI** | Ctrl-O (SI) |
| **SO** | Ctrl-N (SO) |
| **SOH** | Ctrl-A (SOH) |

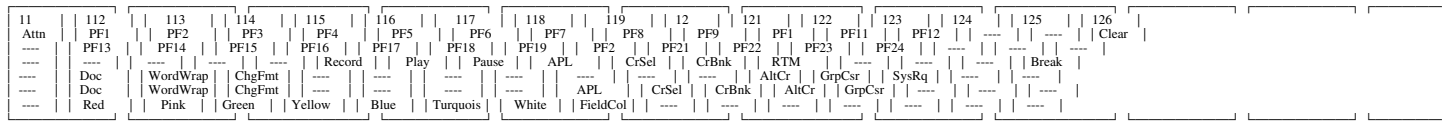
| Face Name | Function Name |
|---|---|
| **STX** | Ctrl-B (STX) |
| **SUB** | Ctrl-Z (SUB) |
| **SYN** | Ctrl-V (SYN) |
| **US** | Ctrl-_(US) |
| **VT** | Ctrl-K (VT) |

# Type Enhanced Keyboard (101)



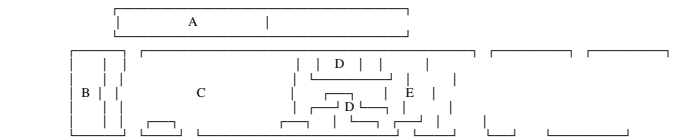



Segment A assignment

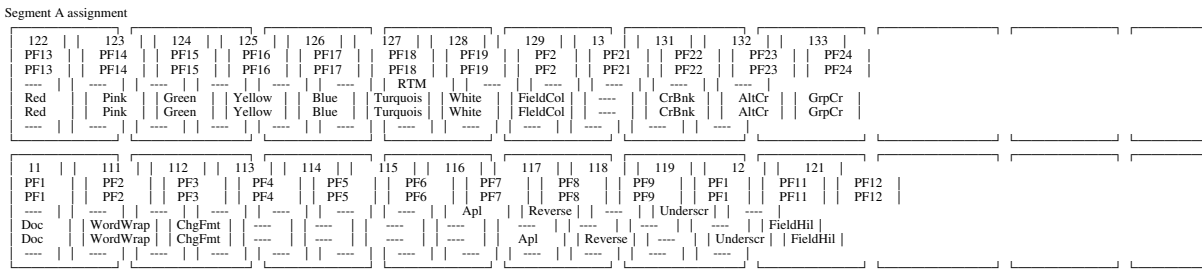



Segment B assignment

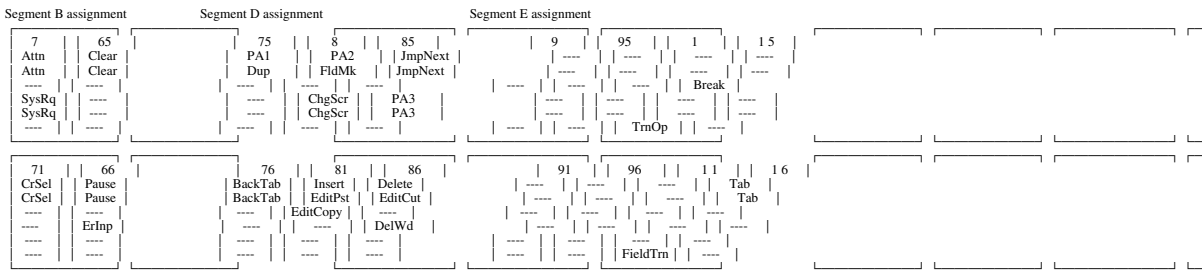
## Type 122 Keyboard




Segment A assignment




Segment B assignment




Segment D assignment




Segment E assignment

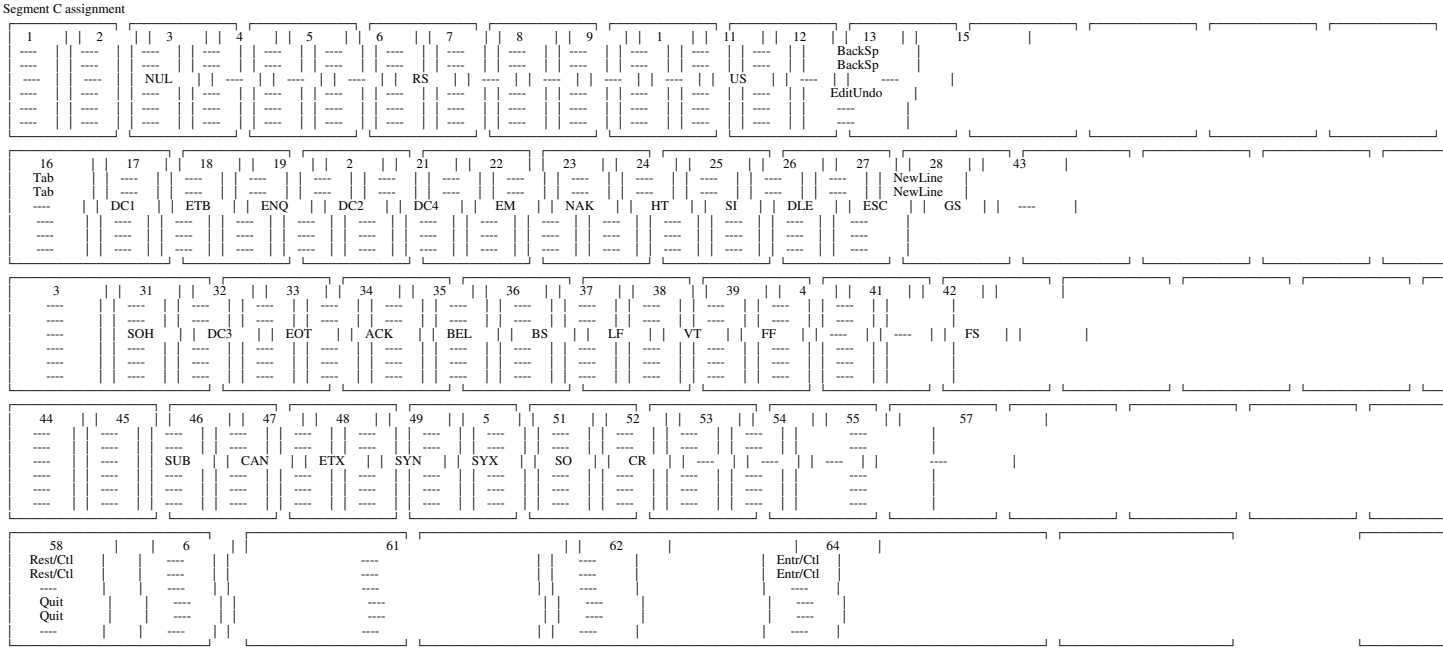



# Key Function Abbreviations for PC400

Following are the abbreviations of the functions:

| Face Name | Function Name |
|---|---|
| **AltCr** | Alternate Cursor |
| **Attn** | Attention |
| **BackSp** | Backspace |
| **BackTab** | Backtab |
| **BackWd** | Backtab Word |
| **BegLin** | Begin of Line |
| **Bold** | Begin Bold |

Segment C assignment

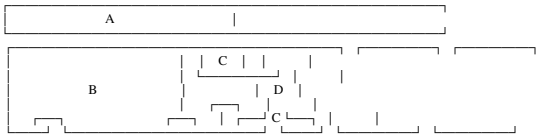



| Face Name | Function Name |
|---|---|
| **BotPag** | Bottom of Page |
| **Center** | Center Text |
| **Clear** | Clear Screen |
| **CrBnk** | Cursor Blink |
| **CrRtn** | Carrier Return |
| **Delete** | Delete Character |
| **DelWd** | Delete Word |
| **Down** | Cursor Down |
| **Dup** | Dup Field |
| **EditCopy** | Edit Copy |
| **EditCut** | Edit Cut |
| **EditPst** | Edit Paste |
| **EditUndo** | Edit Undo |
| **EndB/U** | End Bold/Underscore |
| **EndLin** | End of Line |
| **Entr/Ctl** | Enter/Control |
| **ErEOF** | Erase EOF |
| **ErInp** | Erase Input |
| **FastDown** | Fast Cursor Down |
| **FastUp** | Fast Cursor Up |
| **FldExit** | Field Exit |
| **FldMinus** | Field- |
| **FldMk** | Field Mark |

| Face Name | Function Name |
|---|---|
| **FldPlus** | Field+ |
| **FwdWd** | Tab Word |
| **HalfDn** | Half Index Down |
| **HalfUp** | Half Index Up |
| **Help** | Help |
| **Home** | Home |
| **HostPrn** | Host Print |
| **Insert** | Insert Toggle |
| **JmpNext** | Jump Next Session |
| **Left** | Cursor Left |
| **MarkDown** | Mark Down |
| **MarkLeft** | Mark Left |
| **MarkRigh** | Mark Right |
| **MarkUp** | Mark Up |
| **MoveDown** | Move Mark Down |
| **MoveLeft** | Move Mark Left |
| **MoveRigh** | Move Mark Right |
| **MoveUp** | Move Mark Up |
| **NewLine** | New Line |
| **NxtCol** | Next Column |
| **NxtStp** | Next Stop Code |
| **Pause** | Pause One Second |
| **Pause** | Pause |
| **PF 1 – 24** | Program Function Key 1 – 24 |
| **PgEnd** | End of Page |
| **Play** | Play |
| **Quit** | Quit |
| **RBckSp** | Required Backspace |
| **Record** | Record |
| **Rest/Ctl** | Reset/Control |
| **Right** | Cursor Right |
| **RollDown** | Roll Down |
| **RollUp** | Roll Up |
| **RqdSpc** | Required Space |
| **RqdTab** | Required Tab |
| **Rule** | Rule |
| **StpCde** | Stop Code |
| **Symbol** | Insert Symbol |
| **SysRq** | System Request |

| Face Name | Function Name |
|---|---|
| **Tab** | Tab Field |
| **TestRq** | Test Request |
| **TopPag** | Top of Page |
| **TxtCde** | Display Text Codes |
| **UndLn** | Begin Underscore |
| **WrdUnd** | Word Underscore |

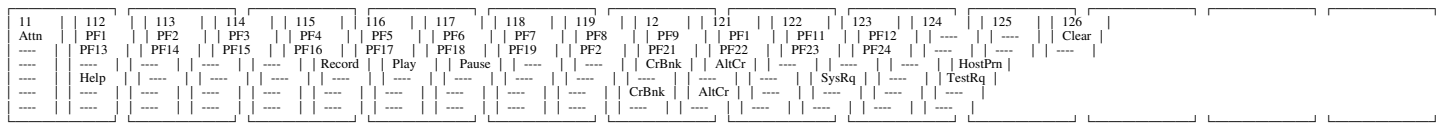
# PS/2 Enhanced Keyboard (101)



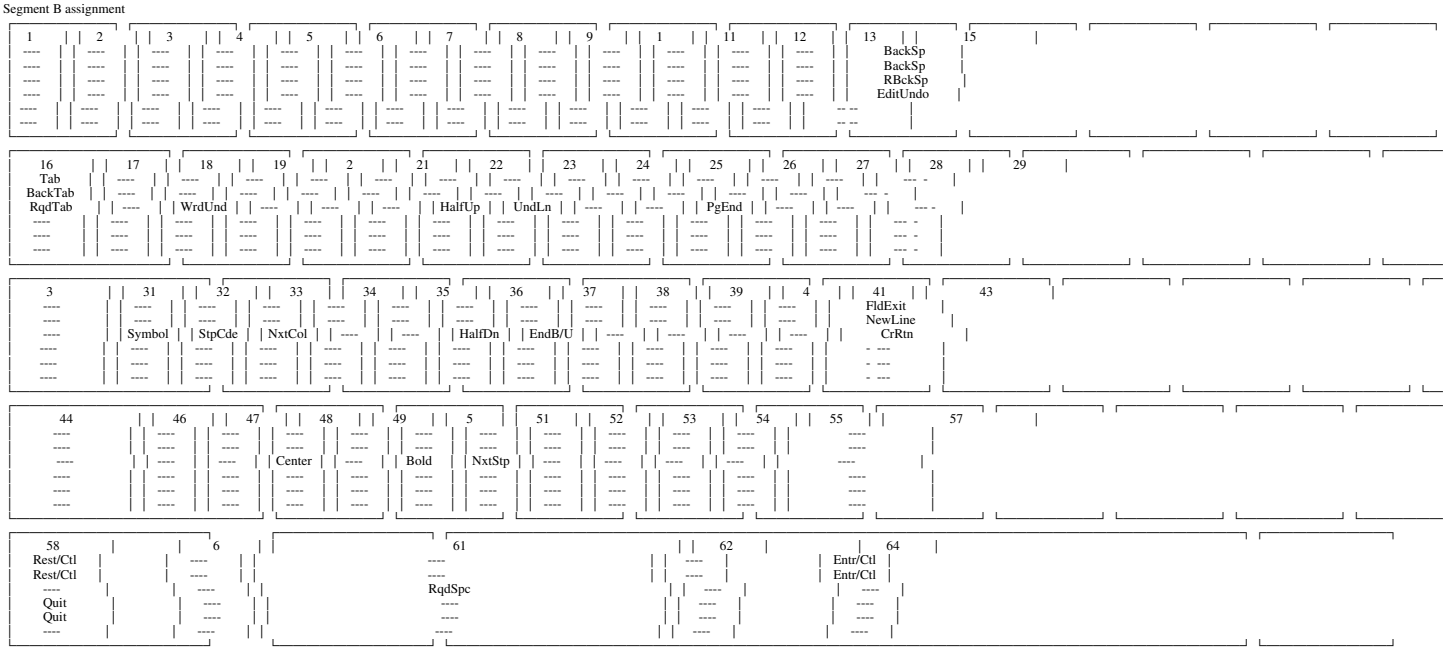

Segment C assignment

| | | |

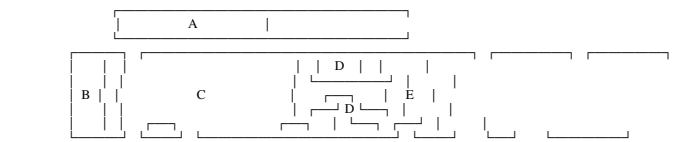
Segment A assignment




Segment B assignment



# Host Connect Keyboard




Segment A assignment

| 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 13 | 131 | 132 | 133 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PF13 | PF14 | PF15 | PF16 | PF17 | PF18 | PF19 | PF2 | | PF21 | PF22 | PF23 | PF24 | | | |
| PF13 | PF14 | PF15 | PF16 | PF17 | PF18 | PF19 | PF2 | | PF21 | PF22 | PF23 | PF24 | | | |
| HostPrn | | | | | | | | | CrBnk | AltCr | | | | | |
| | | | | | | | | | CrBnk | AltCr | | | | | |

| 11 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 12 | 121 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF1 | PF11 | PF12 | | | | |
| PF1 | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | PF8 | PF9 | PF1 | PF11 | PF12 | | | | |
| Help | | | | | | | | | | | | | | | |

Segment B assignment

| 7 | 65 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Attn | Clear | | | | | | | | | | | | | | |
| Attn | Clear | | | | | | | | | | | | | | |
| SysRq | | | | | | | | | | | | | | | |
| SysRq | | | | | | | | | | | | | | | |

Segment D assignment

| 75 | 8 | 85 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dup | FldMk | JmpNext | | | | | | | | | | | | | |
| Dup | FldMk | JmpNext | | | | | | | | | | | | | |

Segment E assignment

| 9 | 95 | 1 | 15 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| 71 | 66 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pause | BackTab | Insert | Delete | | | | | | | | | | | |
| | Pause | BackTab | EditPst | EditCut | | | | | | | | | | | |
| | | | EditCopy | | | | | | | | | | | | |
| | ErInp | | TxtCde | DelWd | | | | | | | | | | | |

| 91 | 96 | 11 | 16 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RollDown | Tab | | | | | | | | | | | | | |
| | | Tab | | | | | | | | | | | | | |
| TopPag | | CrRtn | | | | | | | | | | | | | |
| | | FldPlus | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| 72 | 67 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ErEOF | 82 | | | | | | | | | | | | | |
| | ErEOF | Up | | | | | | | | | | | | | |
| | | MarkUp | | | | | | | | | | | | | |
| | Record | MoveUp | | | | | | | | | | | | | |
| | | FastUp | | | | | | | | | | | | | |
| | | FastUp | | | | | | | | | | | | | |

| 92 | 97 | 12 | 17 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| BegLin | | EndLin | CrRtn | | | | | | | | | | | | |
| | | | FldMinus | | | | | | | | | | | | |
| | | | FldMinus | | | | | | | | | | | | |

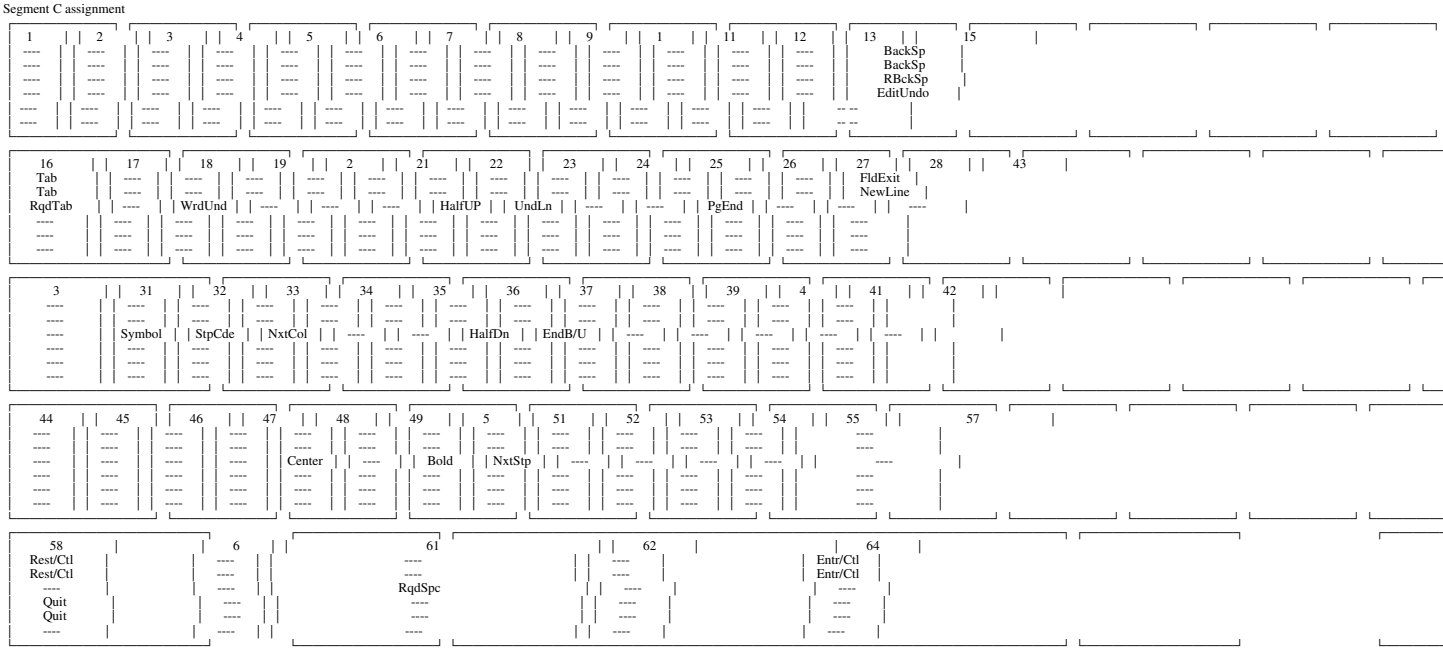
| 73 | 68 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Play | 78 | 83 | 88 | | | | | | | | | | | |
| | | Left | Rule | Right | | | | | | | | | | | |
| | | MarkLeft | Rule | MarkRigh | | | | | | | | | | | |
| | | MoveLeft | | MoveRigh | | | | | | | | | | | |
| | TestRq | BackWd | Home | FwdWd | | | | | | | | | | | |
| | TestRq | BackWd | Home | FwdWd | | | | | | | | | | | |

| 93 | 98 | 13 | 18 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RollUp | FldExit | | | | | | | | | | | | | |
| | | FldExit | | | | | | | | | | | | | |
| BotPag | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| 74 | 69 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 84 | | | | | | | | | | | | | |
| | | Down | | | | | | | | | | | | | |
| | | MarkDown | | | | | | | | | | | | | |
| | | MoveDown | | | | | | | | | | | | | |
| | | FastDown | | | | | | | | | | | | | |
| | | FastDown | | | | | | | | | | | | | |

| 99 | 14 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Segment C assignment



## APL Keyboard Layouts

This section shows the APL keyboard layouts for each country. Only APL characters are shown in each shift position (up/down/Alt). The character position is common to the 122-Key Keyboard and the IBM Enhanced Keyboard, except U.S. English, and is categorized into the types that appear on the following pages:

| Language | Type |
|---|---|
| Austrian or German | 1 |
| Belgian AZERTY | 2 |
| Brazil (274) | 3 |
| Brazil (275) | 2 |
| Bosnia/Herzegovina | 1 |
| Bulgarian | 1 |
| Canadian (Bilingual) | 1 |
| Croatian | 1 |
| Czech | 1 |
| Denmark | 1 |
| Finnish or Swedish | 1 |
| French AZERTY | 2 |
| Greek | 1 |
| Hungarian | 1 |
| Italian | 1 |
| Japanese | 4 |
| Latin American Spanish | 1 |
| Norwegian | 1 |
| Polish | 1 |
| Portuguese | 1 |
| Romanian | 1 |
| Russian | 3 |
| Serbian or Macedonian | 1 |
| Slovakian | 1 |
| Slovene | 1 |
| Spanish | 1 |
| Swiss (French) | 1 |
| Swiss (German) | 1 |
| Turkish | 1 |
| U.K. English | 1 |
| U.S. English (for the 122-Key Keyboard) | 1 |
| U.S. English (for the IBM Enhanced Keyboard) | 3 |

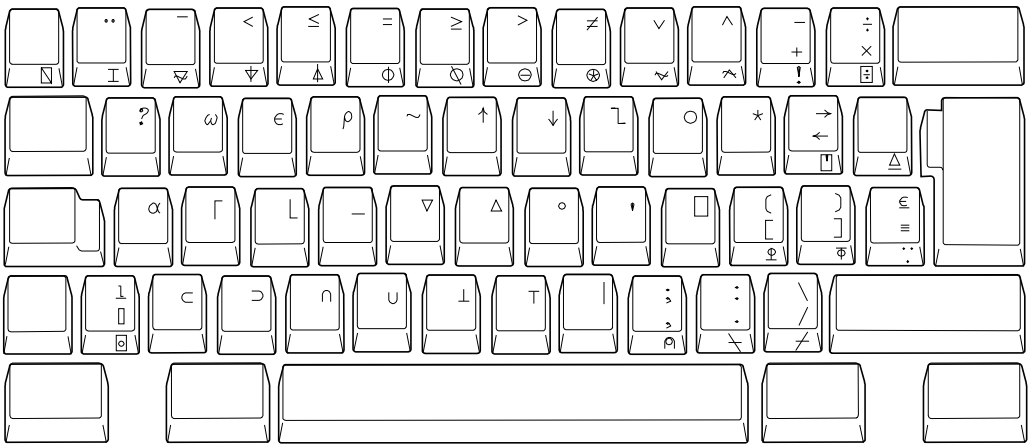


*Figure 8-2. Type-1 APL Keyboard*

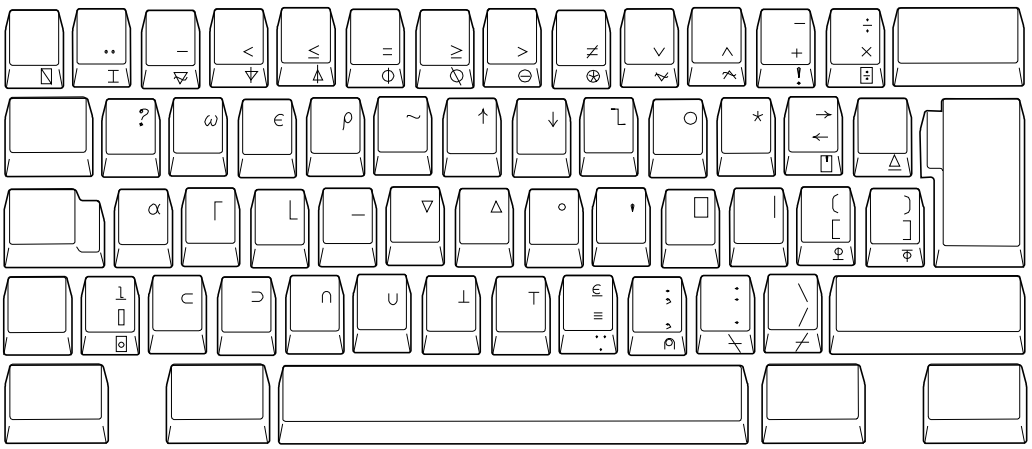


*Figure 8-3. Type-2 APL Keyboard*

## Keyboards

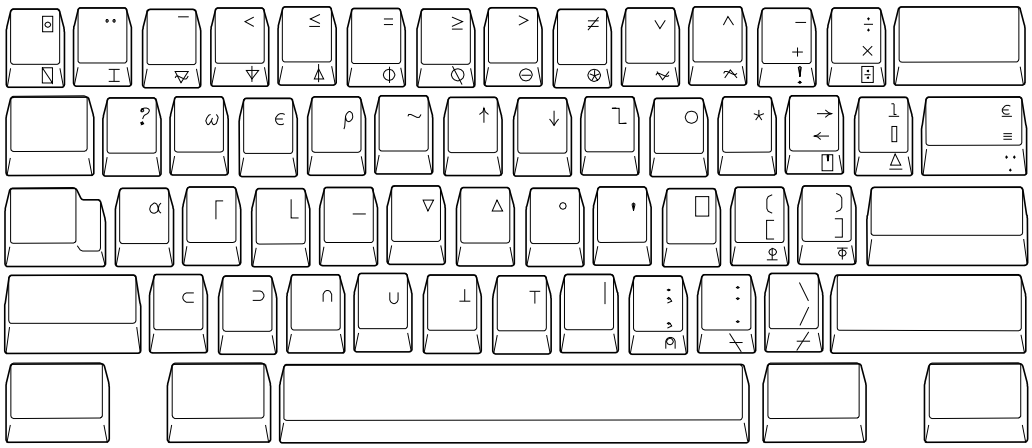


*Figure 8-4. Type-3 APL Keyboard*

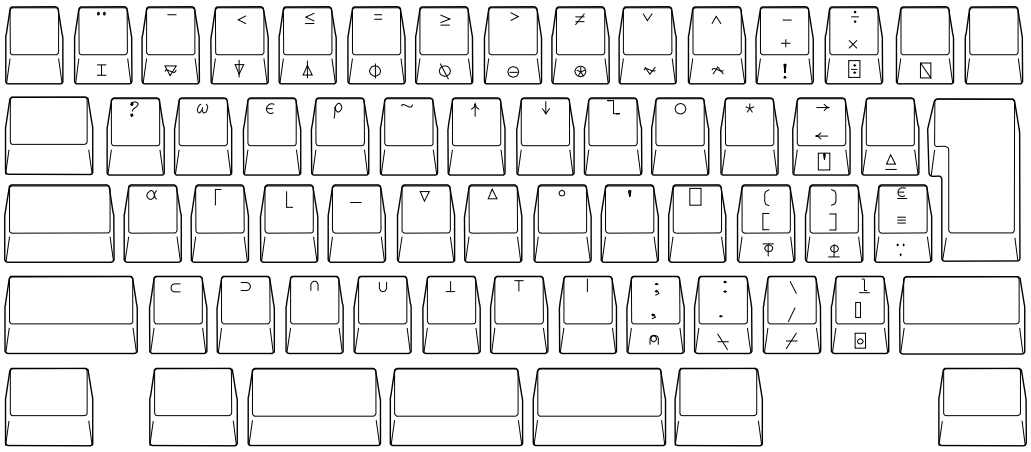


*Figure 8-5. Type-4 APL Keyboard*

## Key Map for Home3270

This section shows the positions of the following control codes:

NUL (X'00')
ESC (X'1B')
FS (X'1C')
GS (X'1D')
RS (X'1E')
US (X'1F')

The positions of these control codes are fixed and common for all language (including U.S. English), regardless of the characters assigned to BASE and UP SHIFT positions of the keys. These control codes are positioned to the CONTROL positions of the keys shown in Figure 8-6 through Figure 8-8 on page 8-20.

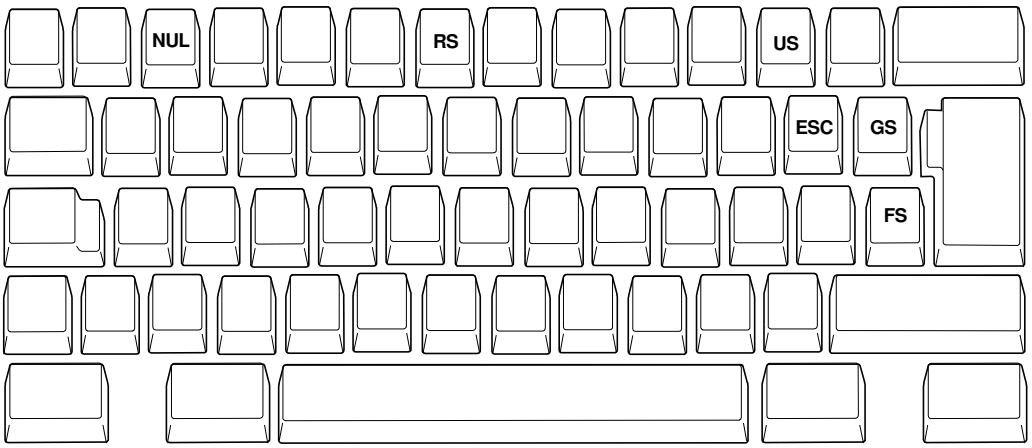



*Figure 8-6. Common Control Code of the Keyboard Core Segment for the 122-Key Keyboard*

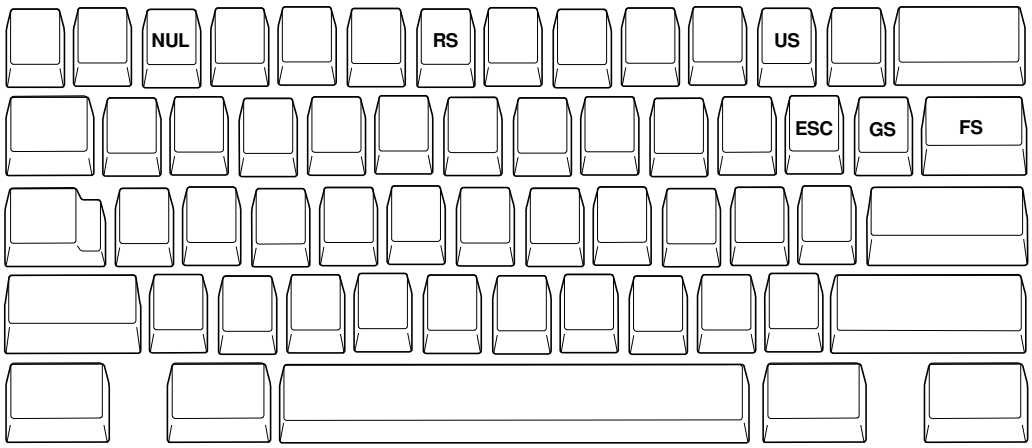



*Figure 8-7. Common Control Code of the Keyboard Core Segment for the Enhanced Keyboard*

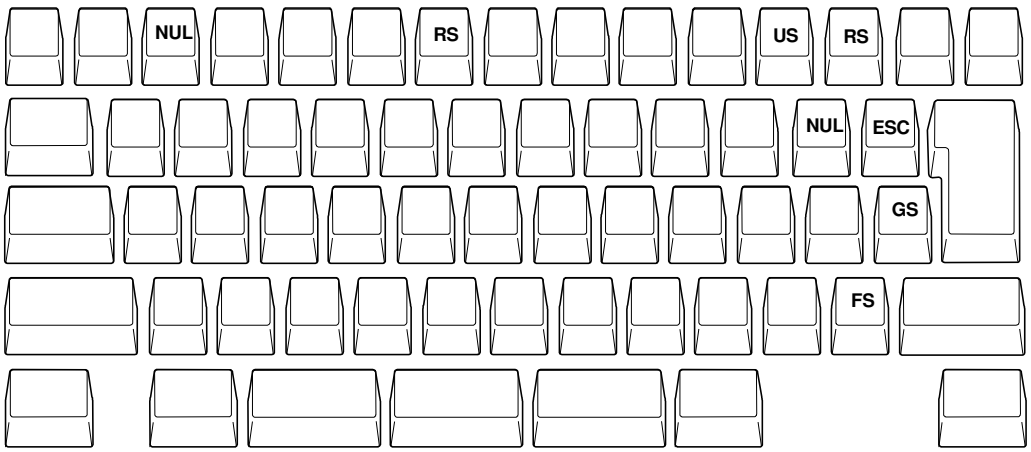



*Figure 8-8. Common Control Code of the Keyboard Core Segment for the Japanese Keyboard*

The positions of other control codes vary for each language. These control codes are positioned to the CONTROL position of the associated alphabetic key. Those control codes and the associated alphabetic characters are as follows:

| Control Code | Associated Letter |
|---|---|
| SOH (×01) | a |
| STX (×02) | b |
| ETX (×03) | c |
| EOT (×04) | d |
| ENQ (×05) | e |
| ACK (×06) | f |
| BEL (×07) | g |
| BS (×08) | h |
| HT (×09) | i |
| LF (×0A) | j |
| VT (×0B) | k |
| FF (×0C) | l |
| CR (×0D) | m |
| SO (×0E) | n |
| SI (×0F) | o |
| DLE (×10) | p |
| DC1(XON) (×11) | q |
| DC2 (×12) | r |
| DC3(XOF) (×13) | s |
| DC4 (×14) | t |
| NAK (×15) | u |
| SYN (×16) | v |
| ETB (×17) | w |
| CAN (×18) | x |
| EM (×19) | y |
| SUB (×1A) | z |

*Figure 8-9. Other Control Code Map of Key Segment B*

The following figure shows an example of control code mapping for the U.S. 122-Key and the U.S. Enhanced Keyboards:

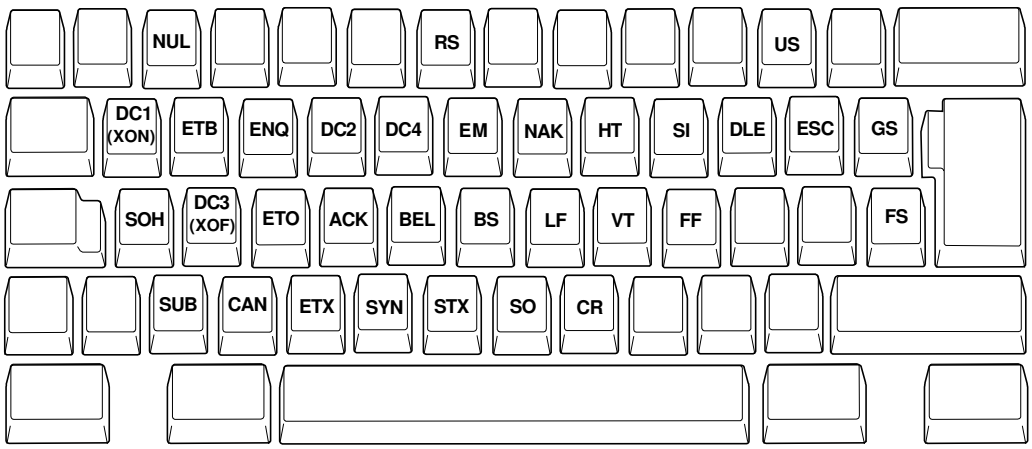



*Figure 8-10. Control Code Map of the Keyboard Core Segment for the U.S. 122-Key Keyboard*

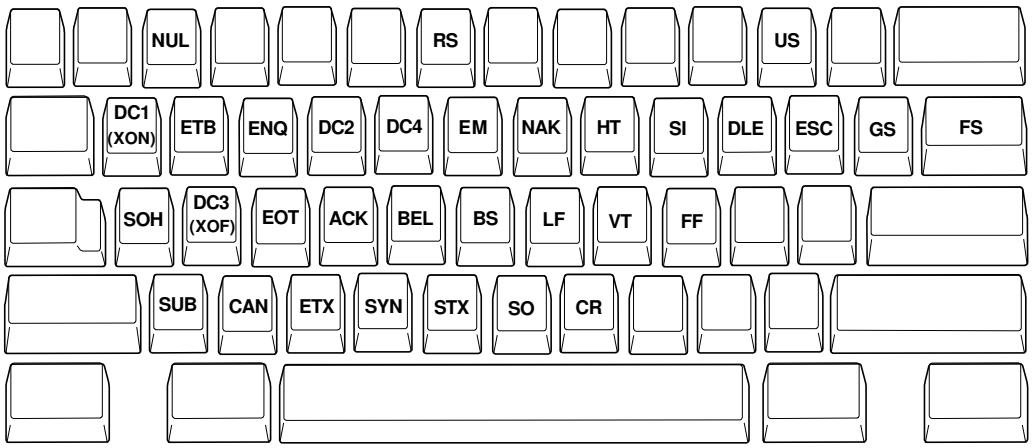



*Figure 8-11. Control Code Map of the Keyboard Core Segment for the U.S. Enhanced Keyboard*

# Chapter 9. Messages

Messages from the host are displayed in the operator information area (OIA) at the bottom line of the host screen. Messages from Personal Communications are displayed in a message window.

The messages are categorized as follows:

Host messages in the OIA: Refer to the online help.

Personal Communications messages in the message window.

Host file-transfer messages.

**Note:** Error messages generated by one program might indicate a problem with another area of Personal Communications. For example, a message generated by PCSDIAL can indicate an asynchronous communication problem. That is, error messages do not necessarily reflect a problem source.

If your message is not listed in this chapter or in the online help, ask your system administrator for assistance.

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# Personal Communications Messages

**COMDIA31** **Dial now – press OK when you hear a ring. Hang up when you hear the remote modem answer.**

**Explanation:** You are requested to dial a telephone number manually.

**User Response:** Dial a telephone number. Press **OK** when you hear a ring. Hang up when you hear the remote modem answer.

**PCSADLC001** **The communication port number in your WorkStation profile is invalid.**

**Explanation:** You specified an incorrect port number for the Hayes AutoSync connection.

**User Response:** Change the port number to another that is available on your personal computer. If you are using a PCMCIA modem, it may be that it has not been enabled or that it has been assigned a different communication port.

**PCSADLC002** **The line speed in your WorkStation profile is invalid.**

**Explanation:** The line speed entry in your workstation profile may have been altered manually.

**User Response:** Reconfigure the session through the panels so that a valid value will be entered in the profile.

**PCSADLC003** **The Bits-per-character and Parity value in your WorkStation profile is invalid.**

**Explanation:** The line-speed entry in your workstation profile may have been altered manually.

**User Response:** Reconfigure the session through the panels so that a valid value will be entered in the profile.

**PCSADLC004** **The link-station address is invalid. Only values from 01 to FE are allowed.**

**Explanation:** You selected **OK** in the SNA-over-Async Attachment window, but the value in the *link station address* entry field was not valid. Or, you attempted to start Personal Communications with a profile that specifies an invalid link-station address.

**User Response:** Change the link-station address to a valid one in the SNA-over-Async Attachment window.

**PCSADLC005** **The PU ID in your WorkStation profile is invalid.**

**Explanation:** You selected **OK** in the SNA-over-Async Attachment window, but the value in the *link station address* entry field was not valid. Or, you attempted to start Personal Communications with a profile that specifies an invalid link station address.

**User Response:** Change the link station address to a valid one in the SNA-over-Async Attachment window.

**PCSADLC006** **The Block ID in your WorkStation profile is invalid.**

**Explanation:** You selected **OK** in the SNA-over-Async Attachment window, but the value in the *link station address* entry field was not valid. Or, you attempted to start Personal Communications with a profile that specifies an invalid link station address.

**User Response:** Change the link station address to a valid one in the SNA-over-Async Attachment window.

**PCSADLC008** **The Bits-per-character and Parity value is invalid. For Basic or Flow transparency, use 8-bit mode; for Full transparency, use 7-bit mode.**

**Explanation:** You specified incorrect *bits per character and parity* values.

**User Response:** Correct the *bits per character and parity* value in the SNA-over-Async Attachment window.

**PCSADLC009** **The Transparency Level is invalid. In 8-bit mode, use Basic or Flow transparency; in 7-bit mode, use Full transparency.**

**Explanation:** You specified an incorrect value for *transparency level*.

**User Response:** Correct the *transparency level* value in the SNA-over-Async Attachment window.

**PCSADLC011** **The communication port selected is already being used by another application.**

**Explanation:** None

**User Response:** Change the port number to one that is not currently being used.

**PCSADLC012** **No more ports can be opened.**

**Explanation:** An additional port cannot be opened. The port assignment exceeds the maximum number allowed, which is 1. You may use only a single port at one time for the SNA-over-Async (SNA-A) attachment, so all SNA-A sessions must use the same port.

**User Response:** Change the port number to 1.

**PCSADLC013** **SNA-over-Async Attachment does not support multiple ports.**

**Explanation:** You attempted to connect multiple SNA-over-Async attachments. Only one such connection can be used at a time.

**User Response:** Reconfigure the session to use the same port as the session that is already running.

**PCSADU001** **Dial configuration has been changed. Save the changes to the** *file-name* **file?**

**Explanation:** One or more settings in the dial configuration have been changed and you attempted to exit the Configure Phone/Modem window.

**User Response:** Select **Yes** to save the new settings and exit the Configure Phone/Modem window. Select **No** if you do not want to save the changes.

**PCSADU010** **The Personal Communications v.25 bis Automatic-Dial Facility supports only the CRN, CRS, and CRI commands.** *xx* **is not supported.**

**Explanation:** An incorrect Dial command was specified.

**User Response:** Use valid Dial commands: CRN, CRS, or CRI.

**PCSADU011** **The modem-information has been changed. Save the changes to the** *file-name* **file?**

**Explanation:** One or more modem settings have been changed.

**User Response:** Select **Yes** to save the new settings. Select **No** if you do not want to save the changes.

**PCSAEA001** **The communication port selected is not available on this PC.**

**Explanation:** You assigned a communication port that is not available on your personal computer.

**User Response:** Change the communication port to another that is available.

**PCSAEA002** **The communication port selected is already being used by another application.**

**Explanation:** The selected port-number is already being used by another program.

**User Response:** Change the port-number to one that is not currently being used.

**PCSAEA004** **The line-speed defined in your workstation profile is invalid.**

**Explanation:** The line-speed entry in your workstation profile may have been altered manually.

**User Response:** Reconfigure the session through the panels so that a valid value will be entered in the profile.

**PCSAPI001** **The combination of host code-page and PC code-page is invalid. The default PC code-page will be used.**

**Explanation:** You selected DDE/EHLLAPI to be enabled, but the combination of host code-page and personal computer code-page is not valid.

**User Response:** Select the correct host code-page from the 3270 Host or 5250 Host window. Then select the correct PC code-page in the File-API Settings window.

If the problem persists, ask your system administrator for assistance.

**PCSAPI002** **The Virtual Device Driver that enables the DOS-mode EHLLAPI has not been loaded.**

**Explanation:** The necessary virtual device driver (**VHAPI.OS2**) was not loaded, so you cannot use the DOS-mode EHLLAPI.

**User Response:** Select **DOS-mode EHLLAPI** in the API Settings window to install the required driver, then shut down and reboot your PC.

**PCSAP32001** **The Partner-LU Name is invalid.**

**Explanation:** You specified an incorrect LU name.

**User Response:** The name can contain alphanumeric characters and the special characters $, #, and @.

**PCSAP32002** **A Partner-LU Name has not been specified.**

**Explanation:** You did not specify a partner-LU name, which is a required parameter.

**User Response:** Specify a partner-LU name. The name can contain alphanumeric characters and the special characters $, #, and @.

**PCSAP32005** **The Mode Name is invalid.**

**Explanation:** You specified an incorrect mode name.

**User Response:** The name can contain alphanumeric characters and the special characters $, #, and @.

**PCSAP32006** **The Mode Name is not configured in CM/2. Do you want to change it or do you want to create a new one? If you create a new one, you must also add it to your CM/2 configuration.**

**Explanation:** You are about to close the APPC3270 configuration panel having specified a mode-name that is not configured in Communications Manager/2.

**User Response:** Change the specified mode-name after selecting **No**, or configure the specified mode-name in Communications Manager/2 after selecting **Yes**.

**PCSAP32007** **Communications Manager/2 did not start. The specified CM/2 configuration is not valid or cannot be found.**

**Explanation:** When you started to configure this attachment, CM/2 should have started automatically. It may be that the default CM/2 configuration is not valid or cannot be found.

**User Response:** Verify that Communications Manager/2 is installed and configured correctly.

**PCSAP32010** **The Partner-LU Name specified in your WorkStation profile is invalid.**

**Explanation:** The partner-LU name can be a fully qualified LU-name or a partner-LU alias configured in Communications Manager/2.

A fully qualified LU-name contains both the network ID and the partner-LU name. They are connected by a dot character(.). The naming rules for both the network ID and the partner-LU name are as follows:

Length must be 1–8 characters.

The first character must be an uppercase alphabetic character (A–Z) or a special character (@, #, $).

The remaining positions can be alphanumeric (a–z, A–Z, –9) or special characters (@, #, $).

The naming rules for the partner-LU alias are as follows:

Length must be 1–8 characters.

It can contain any combination of ASCII characters except a left parenthesis, a right parenthesis, a comma, a semicolon, and a blank space.

It cannot start with the special character @.

**User Response:** Correct the partner-LU name in the workstation profile and start the session again.

---

**PCSAP32011 The Mode Name specified in your WorkStation profile is invalid.**

**Explanation:** The mode-name specified in your workstation profile is not valid. The mode is a set of session capabilities configured in Communications Manager/2. The rules for mode-names are as follows:

Length must be 1–8 characters.

The first character must be an uppercase alphabetic character (A–Z) or a special character (@, #, $).

The remaining positions can be alphanumeric (a–z, A–Z, –9) or special characters (@, #, $).

**User Response:** Correct the mode-name in the workstation profile and start the session again.

---

**PCSAP32020 Communications Manager/2 or its necessary components have not been installed.**

**Explanation:** This attachment requires CM/2 and its APPC API feature, but Personal Communications could not find the necessary modules.

**User Response:** Install CM/2. If it has already been installed, make sure that the APPC API feature is properly installed and configured.

---

**PCSAP32021 Communications Manager/2 or its necessary components have not been installed. Do you want to continue? If you choose Yes, you can install CM/2 later.**

**Explanation:** You are attempting to configure APPC3270, but CM/2 is not installed or its APPC API feature is not properly configured. It is easier to configure APPC3270 after CM/2 is already installed and configured, but you can do this later if you wish.

**User Response:** If you choose **No**, you must install and configure CM/2 and its APPC API feature and then configure the session again. If you choose **Yes**, you can finish configuring this session and configure CM/2 later.

---

**PCSASYNC001 Invalid Port-number!**

**Explanation:** You specified an invalid port-number for Advantis (IIN) communication.

**User Response:** Change the port number to 1, 2, 3, or 4.

---

**PCSASYNC002 The communication port selected is already being used by another application.**

**Explanation:** None.

**User Response:** Change the port-number to one that is not currently being used.

**PCSASYNC003 No more ports can be opened!**

**Explanation:** An additional port cannot be opened. The port assignment exceeds the maximum number allowed, which is 1. You may only use a single port at one time for the SNA-over-Async (SNA-A) attachment, so all SNA-A sessions must use the same port.

**User Response:** Change the port number to 1.

**PCSASYNC010 The Link Address specified in your WorkStation profile is invalid.**

**Explanation:** The link-station address in the workstation profile may have been altered manually.

**User Response:** Make sure that a valid link-station address is specified in the configuration by reconfiguring the sessions through the panels.

**PCSASYNC011 The PU ID specified in your WorkStation profile is invalid.**

**Explanation:** The physical-unit ID in the workstation profile may have been altered manually.

**User Response:** Make sure that a valid PU ID is specified in the configuration by reconfiguring the session through the panels.

**PCSASYNC012 The Block ID specified in your WorkStation profile is invalid.**

**Explanation:** The block ID in the workstation profile may have been manually altered.

**User Response:** Make sure that a valid block ID is specified in the configuration by reconfiguring the session through the panels.

**PCSASYNC020 PIU Size: Only values from 265 to 2057 are allowed.**

**Explanation:** You specified an invalid PIU size.

**User Response:** Change the value to one within the allowed range.

**PCSASYNC021 PAD Buffer Size: Only values from 272 to 2000 are allowed.**

**Explanation:** You specified an invalid PAD buffer size.

**User Response:** Change the value to one within the allowed range.

**PCSASYNC030 The auto-dial file is already being used for the first port.**

**Explanation:** The specified auto-dial file was already used by another port that was already opened.

**User Response:** Specify another auto-dial file for this port.

**PCSASYNC031 The line speed in your WorkStation profile is invalid.**

**Explanation:** The line speed entry in your workstation profile may have been altered manually.

**User Response:** Reconfigure the session through the panels so that a valid value will be entered in the profile.

**PCSBAT001** **You have not specified a batch file. PCSBAT.EXE will not execute any application.**

**Explanation:** You attempted to execute **PCSBAT.EXE** with the /R parameter, but you did not specify the batch file to be executed.

**User Response:** Specify the batch file in the command line of **PCSBAT.EXE** and try the operation again.

---

**PCSBAT002** *parameter* **is an invalid parameter.**

**Explanation:** You attempted to execute **PCSBAT.EXE** with an incorrect parameter.

**User Response:** Remove the incorrect parameter and try the operation again.

---

**PCSBAT003** **The file:** *file-name* **is not a Personal Communications batch file.**

**Explanation:** The file *file-name* is not in the correct format for a Personal Communications batch file. This message sometimes appears if you have manually modified the batch file.

**User Response:** Make sure that the correct file name is specified and, if it is, re-create the Personal Communications batch file and try the operation again. If the problem persists, install Personal Communications again.

---

**PCSBAT004** **Not enough memory to load** *file-name***, because it exceeds** *xxxx* **bytes.**

**Explanation:** None.

**User Response:** Close other applications to free memory for Personal Communications.

---

**PCSBAT010** *file-name* **cannot be found.**

**Explanation:** None.

**User Response:** Make sure that the correct path and file name are given.

---

**PCSBAT011** *file-name* **is not a valid file-name or the file is not in the path you specified. Please check that you entered the correct name or path. name.**

**Explanation:** None.

**User Response:** Make sure that a correct file-name and path are specified.

---

**PCSBAT012** **Error writing batch file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to save the file: *file-name*.

**User Response:** Determine the cause of the error condition and correct it.

**PCSBAT020** *file-name* **has been changed. Save changes?**

**Explanation:** You attempted to exit the Personal Communications batch program without saving the changes made since the last time you selected **New** in the File pull-down menu, opened a batch file, or saved the changes.

**User Response:** Select **Yes** to exit after saving the changes. Select **No** to exit without saving the changes. Select **Cancel** to cancel the changes without exiting. The Personal Communications batch-program window remains open.

**PCSBAT030** **Add this new batch file to the Desktop?**

**Explanation:** You have created and saved a new batch file and may want to add an icon for it to the Personal Communications folder, so that you can start the file easily.

**User Response:** Select **Yes** to add a new icon to the desktop.

If you select **No**, an icon will not be put on the desktop and you will have to start the batch program manually from an OS/2 command prompt.

**PCSBAT040** **The PCSBAT icon cannot be added to the desktop. You must start PCSBAT.EXE** *file-name* **manually.**

**Explanation:** You chose not to add a batch-file icon to the desktop.

**User Response:** To run this batch-file, you must enter: **PCSBAT** *batch-file-name IR* from an OS/2 command prompt.

**PCSBAT041** **The '***file-name***' icon has been added to the '***folder-name***' folder. Double-click the icon to start the program.**

**Explanation:** An icon for this batch-file has been added to the Personal Communications folder.

**User Response:** Double-click the icon to start the programs in this batch-file.

**PCSBAT050** **Add to desktop failed. You must start PCSBAT.EXE** *file-name* **manually.**

**Explanation:** Something prevented the icon from being added to the folder.

**User Response:** To run this batch-file, you must enter: **PCSBAT** *batch-file-name IR* from an OS/2 command prompt.

**PCSCC001** **An invalid parameter was specified.**

**Explanation:** You tried to start a session with a profile that contains an invalid parameter.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC002** **The link specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a profile that contains an unrecognized link selection. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC003** **The screen size specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a profile that specifies an unrecognized screen size. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC004** **The screen size specified in your WorkStation profile is not allowed for the current link connection.**

**Explanation:** You tried to start a session with a profile that specifies a screen size that is not supported for this type of connection. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC005** **The session type specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a profile that specifies an unrecognized session type. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC006** **The host code-page specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a profile that specifies an unsupported host code-page. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC007** **The host code-page specified in your WorkStation profile is not valid for your current code page.**

**Explanation:** You tried to start a session with a profile that specifies a host code-page that is not compatible with the PC code-page. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Specify the correct host code-page or change the workstation code-page.

**PCSCC008** **The LT number specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a workstation profile that specifies an invalid logical terminal (LT) number. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC009** **The LU number specified in your WorkStation profile is invalid.**

**Explanation:** You tried to start a session with a workstation profile that specifies an invalid LU number. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCC020** **The *N*th WorkStation Window is not allowed in the *link-name* connection.**

**Explanation:** The maximum number of sessions allowed for this type of link are already running. The following list summarizes the maximum number of sessions allowed for each link-connection type:

20 for the SNA Distributed Function Terminal connection
20 for the non-SNA Distributed Function Terminal connection
5 for the Control Unit Terminal connection
5 for the Home3270 (3174) connection
5 for the Home3270 (others) connection
1 for TDLC (console) connection
1 for SNA-over-Async (console) connection
26 for other connections

**User Response:** Close one of the sessions that is already connected through the same link before attempting to connect this session.

**PCSCC030** **LT number *xx* has already been assigned to another session.**

**Explanation:** You tried to start a session that specifies the same logical terminal number that is already in use by another. This message does not appear if you select **Default (Next Available)** in the **LT Number** combination box in the Customize Communication - 3270 Host window (the default setting), because Personal Communications then assigns an LT number automatically to each session.

**User Response:** Close the session that has the same LT number before attempting to connect this session or to change the definition for this session.

**PCSCC031** **LU number *xx* has already been assigned to another session.**

**Explanation:** You tried to start a session that specifies the same logical terminal number that is already in use by another. This message does not appear if you select **Default (Next Available)** in the **LT Number** combination box in the Customize Communication - 3270 Host window (the default setting), because Personal Communications then assigns an LT number automatically to each session.

**User Response:** Close the session that has the same LT number before attempting to connect this session or to change the definition for this session.

**PCSCC040** **The Customize Communication window is already open.**

**Explanation:** You tried to select **Configure...** in the Communication pull-down menu while the Customize Communication dialog box was already displayed in another session window.

**User Response:** Close the Customize Communication dialog box in the other session window and try again.

**PCSCC041** **Because you have changed the configuration, communication will be terminated if you proceed. Are you sure?**

**Explanation:** You chose **OK** in the Customize Communication dialog box while the session was connected.

**User Response:** To continue the operation, choose **OK**. The current connection will be terminated and, if **AutoConnect** is selected, will be reconnected.

To quit the operation, select **Cancel**. The Customize Communication dialog box remains open.

**PCSCC050** **PC Location name is invalid.**

**Explanation:** The first half-field (local network ID) or the last half-field (local LU name) of the specified PC Location name is blank.

**User Response:** Enter a fully qualified local LU name (local network ID and local LU name).

**PCSCC051** **System Location name is invalid.**

**Explanation:** The first half-field (remote network ID) or the last half-field (remote LU name) of the specified system location name is blank.

**User Response:** Enter a fully qualified partner LU name (remote network ID and remote LU name).

**PCSCC053** **Only the host code-page for Japan is valid for this session.**

**Explanation:** You selected an incorrect host code page for a printer session.

**User Response:** Select Japanese alphanumeric katakana or Japanese alphanumeric lowercase as the host code-page.

**PCSCC054** **An invalid library name was specified.**

**Explanation:** You selected an invalid name for the message library.

**User Response:** Specify *LIBL or *CURLIB if you specify * as the first character.

**PCSCC055** **An invalid object name was specified.**

**Explanation:** You selected an invalid object name.

**User Response:** Specify *NONE if you specify * as the first character.

**PCSCDLG001** **Cannot create the Folder. Please change its name.**

**Explanation:** You selected **OK** in the Add *xxxx* to Folder window, but an incorrect character was included in the specified folder name.

**User Response:** Change the folder name.

**PCSCM001** **PCSCM.EXE is already running.**

**Explanation:** You attempted to run the Personal Communications program **PCSCM.EXE** when it was already running.

**User Response:** Stop **PCSCM.EXE** before trying to restart it.

**PCSCOAX001** **The number specified in your WorkStation profile for the 3270 coax adapter is not valid. It can be 0 to 3 only.**

**Explanation:** You tried to start a session that specifies an invalid 3270-adapter number. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCOAX002** **The memory test on the 3270 coax adapter failed.**

**Explanation:** You tried to start a session with a profile that specifies an invalid buffer address for the 3270 adapter, the buffer does not exist at that address, or if you using a PCMCIA card, the card has been enabled at a different address. This message sometimes appears because you have manually modified the workstation profile.

**User Response:** Re-create the workstation profile by re-configuring the session through the panels. If the problem persists, install Personal Communications again.

**PCSCOAX003** **The keyboard-type specified in your WorkStation profile is invalid.**

**Explanation:** The keyboard type specified in your workstation profile is not supported by PC/3270 in CUT mode. The only valid keyboard type is **Emulation**.

**User Response:** Re-configure the session through the panels.

**PCSCOAX004** **The controller-language specified in your WorkStation profile is invalid.**

**Explanation:** The controller-language specified in your workstation profile is not supported by PC/3270.

**User Response:** The only valid languages for **CULanguage** are *0* for U.S. English or *1* for Austrian German.

**PCSCOAX010** **A 3270 coax adapter has not been installed.**

**Explanation:** You tried to start a DFT or CUT-mode session, but PC/3270 could not find a 3270 coax adapter in your workstation. There are several possible reasons for this:

1. There is no coax adapter in the workstation.
2. You have specified the wrong adapter number.
3. You have specified the wrong buffer address for the adapter.
4. You are using a PCMCIA card and have not clicked the **PCMCIA Yes** button.
5. You are using a type-B Micro Channel adapter and have set the wrong adapter number when configuring your workstation with the reference diskette or equivalent.

6. You are using a type-B ISA-bus adapter and the switches are set incorrectly.
7. You have both a PCMCIA card and an MCA or iSA bus adapter in the workstation. This is not allowed.
8. The adapter is faulty.

**User Response:**

2, 3, 4: Reconfigure the session through the panels.

5: Check the system configuration.

6: Consult the documentation for the adapter to determine the correct switch setting.

**Note:** If you are using a type-B adapter, you can use up to four at once; they will be numbered from 0 to 3.

---

**PCSCOAX012** **The 3270 coax adapter is already being used by a session that has a different workstation profile.**

**Explanation:** You tried to start a DFT or CUT-mode session, but the adapter was already being used for a different type of connection.

For example, this message appears when you try to start a SNA DFT session when a non-SNA DFT session is already running.

**User Response:** Close the other session that is using the adapter before attempting to connect this session.

---

**PCSCOAX013** **A PCMCIA card cannot coexist with a 3270 Connection or 3278/79 adapter, nor are multiple PCMCIA cards allowed. Please change the configuration.**

**Explanation:** You tried to start a DFT or CUT-mode session when you had an unsupported hardware configuration.

**User Response:** Remove one of the adapters and re-configure the session.

---

**PCSCOAX021** **Your 3270 coax adapter does not support the Extended Attribute function, so your session will always 4-color mode.**

**Explanation:** The 3270 adapter you are using does not support the Extended Attribute Buffer function, so the session will always be in 4-color mode.

**User Response:** If you want Extended Attribute support, change the adapter type.

---

**PCSCOAX050** **PCSCOAX.SYS has not been loaded. Please check your CONFIG.SYS; if there is no statement for this driver, you must install it from Administration Tools - Configuration and Program Options. Then shut down and reboot your PC.**

**Explanation:** You tried to start a DFT or CUT-mode session, but it failed because the required device driver (**PCSCOAX.SYS**) had not been loaded.

**User Response:** Perform the steps described in the message. If the statement is already in CONFIG.SYS, shut down and re-start your PC.

**PCSCOAX051** **Card/Socket Services or the 3270 Credit Card Adapter could not be found. Please check that the PCMCIA device drivers are installed and that the Card is inserted in a slot.**

**Explanation:** You tried to connect by using an IBM 3270 Emulation Credit Card adapter, but failed. The possible reasons are as follows:

Card or Socket Service was not installed.
The IBM 3270 Emulation Credit Card adapter was not installed in a slot.

**User Response:** Check that statements exist in the CONFIG.SYS to load PCMCIA.SYS and IBM2550n.SYS. If not, use the OS/2 utility to install them. Check that the card is correctly inserted in a slot.

---

**PCSCOAX052** **An error occurred in enabling the 3270 Card. Please check that the PCMCIA device drivers are installed correctly.**

**Explanation:** None.

**User Response:** Check that statements exist in the CONFIG.SYS to load PCMCIA.SYS and IBM2550n.SYS. If not, use the OS/2 utility to install them. Check that the card is correctly inserted in a slot.

---

**PCSCOAX053** **The specified Buffer Address is already being used by another adapter. Please change it.**

**Explanation:** You have specified a buffer address that is already being used by another 3270 adapter.

**User Response:** Change the **Buffer Address** in the SNA DFT, Non-SNA DFT, or CUT configuration panels.

---

**PCSCOAX054** **Adapter Open failed. Please customize the correct Adapter number.**

**Explanation:** None.

**User Response:** Specify the correct **Adapter Number** in the SNA DFT, Non-SNA DFT, or CUT configuration panels. Restart the system, because the previous close of the adapter might have terminated abnormally.

---

**PCSCOAX055** **3270 coax adapter may be in use by another application.**

**Explanation:** Your 3270 adapter might be in use by another application, such as LAN Adapter and Protocol Support (LAPS) for 3270 Peer Communications.

**User Response:** Terminate the other application, and try the connection again.

---

**PCSCT001** *file-name***.DLL has not been installed.**

**Explanation:** The specified Personal Communications dynamic link library was not found.

**User Response:** Make sure that the DLL is installed in the correct path.

---

**PCSCT002** **Because you must use some Communications Manager/2 parameters, you must install CM/2 before configuring this attachment.**

**Explanation:** CM/2 was not installed or could not start for some reason.

**User Response:** Install CM/2 or make sure that it will start correctly.

**PCSCW001** **You cannot start another session.**

**Explanation:** You attempted to start a session when the maximum allowed number of sessions is already running.

**User Response:** Close one of the sessions that is running.

**PCSCW002** **Session ID xx has already been assigned to another session.**

**Explanation:** You attempted to start a session with an ID that is already in use by another session. Normally, session will take IDs, starting with *a*, in the sequence in which their connections become active. However, if you specify an ID for a session, using the */S=x* option, it can happen that another session connects before the one for which you specified the ID, and takes the ID you specified. This is most likely to happen if you are using a batch file to start sessions and specify an ID for a session other than the first in the batch-file.

**User Response:** Close the session that is already using the ID you specified or change the ID that is specified for the session you want to start. If you are starting sessions from a batch file, add the */S=x* option to the command line for every session.

**PCSDIA010** **Host has not responded within the timeout period.**

**Explanation:** The Import or Export was cancelled because the host did not respond within the timeout period.

**User Response:** Increase the timeout value in the Miscellaneous Settings window; the default timeout value is 30 seconds. If the problem persists, ask your system administrator for assistance.

**PCSDIA011** **Unrecoverable system error.**

**Explanation:** This message provides the following additional information:

Host connect return code - *xxx*
Write structured field return code - *xxx*
Read structured field return code - *xxx*
Data exception code sent to host - *xxx*
Data exception code sent from the host - *xxx*
Host disconnect return code - *xxx*

**User Response:** Make a note of the additional information, then restart Personal Communications and try again. If the problem persists, ask your system administrator for assistance.

**PCSDIA012** **Program error at the host.**

**Explanation:** The transfer program has detected an error in the data from the host.

**User Response:** Ask your system administrator for assistance.

**PCSDIA013** **Transfer program has stopped.**

**Explanation:** This message is displayed with message PCSDIA014 or any of several other messages.

**User Response:** None.

**PCSDIA014** **Transfer program canceled by the user.**

**Explanation:** This message appears if you quit the transfer program.

**User Response:** None.

**PCSDIA015** **Current file transfer canceled by the host program.**

**Explanation:** This message appears when the host application has signaled to the transfer program that it does not want to continue with the current transfer. This could be because of an input/output error at the host.

**User Response:** Record the messages in the host session and follow the instructions for the host application.

**PCSDIA017** **Program error detected by the host program.**

**Explanation:** This message appears when the host has sensed an error in the data sent to it by the transfer program.

**User Response:** Ask your system administrator for assistance.

**PCSDIA022** **Host rejected your file-transfer attempt.**

**Explanation:** This message appears when the host rejects a transmission that the transfer program assumed was successful. The transfer program is waiting for a new request from the host. This message will be followed by one of the PCSDIA011 messages.

**User Response:** Ask your system administrator for assistance.

**PCSDIA036** **Current file transfer canceled by the user.**

**Explanation:** This message appears if you cancel the transfer. The transfer of the file stops, and the transfer program waits for more requests from the host.

**User Response:** Begin another transfer, or select **Exit** to quit.

**PCSDLC001** **At least one of the Link Parameters conflicts with that of the another session. The parameters for the other session will be used to connect you now, but you should resolve the conflict as soon as possible.**

**Explanation:** If LAN-via-802.2 sessions that have different workstation profiles are to coexist, at least one of the following parameters must be different between them:

Adapter Number
Destination Address
Remote SAP
Local SAP

If that is not the case, this message will appear. You will nevertheless get a session, but it will use the parameters defined for the first session.

**User Response:** Compare the workstation profiles for the sessions and change the value of one of these parameters so that it is different from the value in the other profile.

**PCSDLC010** **A device-driver statement for this attachment must be added to your CONFIG.SYS; do you want to add it now?**

**Explanation:** When you click **OK** at the end of customization, the program checks to see whether the necessary device driver is already in memory. If not, it assumes that there is no statement for the driver in CONFIG.SYS and asks whether you want one to be added now. If you respond **Yes**, the program will insert the necessary statement in CONFIG.SYS and ask you to shut down and reboot. If you respond **No**, you will be asked to install the driver later and you will not be able to use the new configuration until you have done so.

**User Response:** Click **Yes** to have the device-driver installed. Before you can use the new configuration, you must shut down and reboot the personal computer but you might want to do other things first, some of which might also require a reboot. Or: Click **No.** In this case, you must at some time install the device-driver. To do this, click the Administration Tools icon, then the Configuration and Program Options icon; then choose **Add or Delete Communication Drivers** and click the box for the type of attachment that you have configured. The driver will be installed and you will be reminded to shut down and reboot.

**PCSDLC011** **When you want to add the device driver, click the Administration Tools icon, choose Configuration and Program Options, then Add or Delete Communication Drivers; then click the attachment that you have just configured.**

**Explanation:** Execution of the setup program is required to change the system settings so that the session can connect to the host.

**User Response:** Run *Configuration and Program Options* in the **Administration Tools** to change the system settings. Then shut down and re-start.

**PCSDLC020** **The PIU size is invalid; only values from 265 to 2042 are allowed.**

**Explanation:** You selected **OK** in the IEEE 802.2 window, but the value in the **PIU Size** entry field was not valid.

**User Response:** Correct the PIU size as instructed in the message, and try again.

**PCSDLC021** **The Fully-Qualified CP Name is invalid. Please correct it.**

**Explanation:** You selected **OK** from the IEEE 802.2, SDLC Attachment, or Twinaxial Attachment (APPC) window, but had not entered a fully qualified control-point name was not entered.

**User Response:** Enter a fully qualified control-point name in the input field.

**PCSDLC022** **The PIU size is invalid; only values from 265 to 2057 are allowed.**

**Explanation:** You selected **OK** in the SDLC Attachment window, but the value in the **PIU Size** entry field was not valid.

**User Response:** Correct the **PIU Size** value as instructed in the message, and try again.

**PCSDLC030** **Only hexadecimal numbers (0–9, A–F) are allowed.**

**Explanation:** You attempted to type a character other than a hexadecimal number (0–9, A–F) in the entry field.

**User Response:** Type a valid number.

**PCSDLC031** **Only decimal numbers (0–9) are allowed.**

**Explanation:** You attempted to type a character other than 0–9 in the entry field.

**User Response:** Type a valid number.

**PCSDLC032** **To be valid, a name must start with (A–Z, $, @, #) followed by (0–9, A–Z, $, @, #).**

**Explanation:** As the first character in the input field, you tried to enter a character other than the foregoing.

**User Response:** Enter a valid character.

**PCSDLC033** **To be valid, a name must start with (A–Z, $, @, #, *) followed by (0–9, A–Z, $, @, #).**

**Explanation:** As the first character in the input field, you tried to enter a character other than the foregoing.

**User Response:** Enter a valid character.

**PCSDLC034** **To be valid, a name must start with (A–Z, $, @, #) followed by (0–9, A–Z, $, @, #).**

**Explanation:** As the first character in the input field, you tried to enter a character other than the foregoing.

**User Response:** Enter a valid character.

**PCSERR001** **Error opening file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to open the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR002** **Error reading file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to read the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR003** **Error writing file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to write the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR004** **Error in format of Personal Communications file:** *file-name*.

**Explanation:** The format of the Personal Communications file *file-name* is incorrect.

**User Response:** If the file indicated by the message is a workstation profile, re-configure the session through the panels. Otherwise, re-install Personal Communications and try again. If the problem persists, ask your system administrator for assistance.

**PCSERR005** **Error writing file:** *file-name* **because disk is full.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to write the file *file-name*, because there was insufficient space on the drive.

**User Response:** Clear some space on the drive and try again. If the problem persists, ask your system administrator for assistance.

**PCSERR006** **Error closing file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to close the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR007** **Error creating file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to create the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR008** **Error seeking file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications tried to move the pointer in the file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSERR100** **Error allocating** *xxxx* **bytes of memory from OS/2 system memory. Close one or more applications and try again.**

**Explanation:** Your OS/2 system does not have enough memory available for Personal Communications to execute the function you selected.

**User Response:** Select **Retry** after closing one or more applications. Check the free space on the drive that contains **SWAPPER.DAT**.

Repeat the retry operation until this error message does not appear. If the problem persists, select **Cancel** and ask your system administrator for assistance.

**PCSERR101** **Error locking system memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to access system memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR102** **Error unlocking system memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to release system memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR103** **Error page-locking system memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to page-lock system memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR104** **Error page-unlocking system memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to page-unlock system memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR105** **Error freeing system memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to return memory to OS/2 system memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR106** **Error reallocating *xxxx* bytes of memory from OS/2 system memory. Close one or more applications and try again.**

**Explanation:** Your OS/2 system does not have enough memory available for Personal Communications to execute the function you selected.

**User Response:** Select **Retry** after closing one or more applications. Check the free space on the drive that contains **SWAPPER.DAT**.

Repeat the retry operation until this error message does not appear. If the problem persists, select **Cancel** and ask your system administrator for assistance.

**PCSERR130** **Error allocating *xxxx* bytes of memory for resources. Close one or more applications and try again.**

**Explanation:** Your OS/2 system does not have enough memory available for Personal Communications to execute the function you selected.

**User Response:** Select **Retry** after closing one or more applications. Repeat the retry operation until this error message does not appear. If the problem persists, select **Cancel** and ask your system administrator for assistance.

**PCSERR131** **Error locking resource memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to access memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR132** **Error unlocking resource memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to release memory.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR133** **Error freeing resource memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to return memory to OS/2.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR134** **Error loading resource memory.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to load the data from the Personal Communications file.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSERR200** *function-name* **failed :** *module-name*

**Out of memory. Close one or more applications and try again.**

**Explanation:** OS/2 returned an error condition when Personal Communications executed or loaded the Personal Communications module *module-name*. The *function-name* is either DOS Load Module or WinStartApp.

For each *additional message*:

**Out of memory or Out of system resources.**

**Close one or more applications and try again.**

**Explanation**: Your OS/2 system does not have enough memory or system resources available to load the module *module-name* that is required for Personal Communications to execute the function you selected.

**User Response**: Select **Retry** after closing one or more applications. Repeat the retry operation until this error message does not appear. If the problem persists, select **Cancel** and ask your system administrator for assistance.

**File not found.**

**Explanation**: The module: *module-name* could not be found.

**User Response**: Unpack the module from the original diskette or CD-ROM. If that does not help, install Personal Communications again. If the problem persists, ask your system administrator for assistance.

**Path not found.**

**Explanation**: The path to a required program module could not be found. Some program modules must be in a specific path, for example, the directory that contains *.dll*s must be in the LIBPATH. It is also possible that the indicator for the current path is not in the PATH or LIBPATH. It may be that the PATH or LIBPATH statements in CONFIG.SYS have been altered or corrupted.

**User Response**: Check the PATH and LIBPATH statements. If they seem to be correct, remove from them the references to the Personal Communications directory, then reinstall Personal Communications. If the problem persists, ask your system administrator for assistance.

**(All other messages)**

**Explanation**: Personal Communications encountered an internal problem.

**User Response**: Install Personal Communications again. If the problem persists, ask your system administrator for assistance.

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**PCSERR210** **Error starting system timer. Close one or more applications that use the timer, then try again.**

**Explanation:** So many other applications are using the system timer resource that no timer is available for Personal Communications to execute the function you selected.

**User Response:** Select **Retry** after closing one or more applications. Repeat the retry operation until this error message does not appear. If the problem persists, select **Cancel** and ask your system administrator for assistance.

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**PCSERR211** **Error killing system timer.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to free the timer resource.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

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**PCSERR900** **Personal Communications cannot run on this version of OS/2.**

**Explanation:** Personal Communications requires that workstations have IBM OS/2 Version 2.1 or later installed.

**User Response:** Upgrade OS/2 to Version 2.1 or later.

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**PCSERR999** **Personal Communications internal error:** *module-name* **-** *xxxx***.**

**Explanation:** Personal Communications encountered an internal problem in the module *module-name*.

**User Response:** Try the operation again. If that does not help, unpack the module from the original diskette or CD-ROM and try again. If the problem persists, ask your system administrator for assistance and have the following information available:

The module name and error number shown in the message
The version of OS/2 and Personal Communications
**CONFIG.SYS** file
The workstation profile (*filename***.WS**)

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**PCSFLR001** **The shared Folders program cannot connect with the Host.**

**Explanation:** A router session might not be connected correctly to the host.

**User Response:** Reconfigure the router session through the panels and make sure that it connects correctly.

**PCSFLR005** **At least one shared folder is still assigned. Please release the drive(s).**

**Explanation:** You attempted to exit from a router session over which a shared folder has been allocated to a drive.

**User Response:** Select **Configure** from the Shared Folders menu and remove all drives to which a shared folder has been allocated.

**PCSFLR007** **The Shared Folders program is already running.**

**Explanation:** You attempted to start the Shared Folders program when it was already running.

**User Response:** None.

**PCSFLR010** **Retrieving the folder name; please wait....**

**Explanation:** The latest shared-folder list is being created.

**User Response:** None.

**PCSFLR011** **Assigning the drive; please wait....**

**Explanation:** You have selected **Assign** in the shared folder program.

**User Response:** None.

**PCSFLR012** **Releasing the drive; please wait....**

**Explanation:** You have selected **Release** in the Shared Folders window.

**User Response:** None.

**PCSFLR013** **The specified drive is already in use.**

**Explanation:** A drive assigned for a shared folder is already assigned as a remote drive or another shared folder drive.

**User Response:** Select **Refresh** from the menu bar to refresh the list of the shared folder program, and specify a drive that is not in use.

**PCSFLR014** **There is no available shared folders drive. The shared folders function allows a maximum of 8 folders to be assigned at one time.**

**Explanation:** You tried to assign more than 8 drives.

**User Response:** Delete unnecessary assignments and try again.

**PCSFLR016** **Changes have been made in the host connection(s). The status is being updated; please wait....**

**Explanation:** The router session was reconfigured or ended.

**User Response:** None.

**PCSFLR017** **Conversation with the system ended unexpectedly.**

**Explanation:** Communication errors occurred on a router session.

**User Response:** Check that there is an active connection to the AS/400 system, then restart the router session.

**PCSFLR019** **You cannot start Shared Folders until a Personal Communications Router session or a CM/2 link to an AS/400 is active, and PCSFLR0.IFS has been loaded. Click OK; if necessary, you will be asked whether you want PCSFLR0.IFS to be installed.**

**Explanation:** To use shared folders, you must have an active connection to an AS/400 system. This connection can be provided by a Personal Communications router session or by Communications Manager/2 (any of CM/2's possible links to an AS/400 system). Also, the shared-folders driver PCSFLR0.IFS must have been installed and loaded (you must have rebooted the workstation after the driver was installed).

**User Response:** Click **OK**; if the device driver has not been installed, you are asked whether you want to install it now. If you do, you are asked to reboot the system. If not, you can install it later.

If you will use the router to provide the link to the AS/400 system, you must configure and start a router session. If you will use a CM/2 link, make sure that the link is active.

Try to start Shared Folders again. If it fails, check that the CONFIG.SYS file contains the statement IFS=[path]PCSFLR0.IFS. Check also that you have rebooted the workstation after you installed the driver, and that the link to the AS/400 system is active.

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**PCSFT052** **System name has been defaulted.**

**Explanation:** No system name was found in the specified transfer request file.

**User Response:** The default system name has been assumed for the system name in the transfer request. Correct this error, as follows:

Enter in the **System Name** field, an AS/400 name that performs the transfer.

Save the transfer request file.

---

**PCSFT101** **The AS/400 system detected a warning situation.**

**Explanation:** A possible error condition was detected on the AS/400 system.

**User Response:** If you are performing interactive data transfer, the problem type is indicated in the text following the error code.

Do as follows:

To continue this transfer (provided that the continuation option has been specified), select **Continue**. Execution of the transfer request continues, ignoring this possible problem.

To discontinue this transfer request, select **Cancel**. Correct the error and reissue the transfer request.

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**PCSFT201** **File is not a transfer request file.**

**Explanation:** The specified file is not a transfer request file. Or, this error might have occurred because this transfer request is incomplete or is of an incorrect format.

**User Response:** If you are performing interactive data transfer, specify another transfer request file name. You can list transfer request files selecting **Open** from the File pull-down menu of the menu bar.

If you are performing automatic data transfer, specify a valid transfer request file name; then restart automatic data transfer.

**PCSFT204** **PC file description file is required to transfer data.**

**Explanation:** To transfer data to an AS/400 data file, a file-description file is required. If a file-description file has not been specified, the format and proper ties of the personal computer file are not known, making the transfer of records from a personal computer to an AS/400 data file impossible.

**User Response:** If you are performing interactive data transfer:

Ensure that the AS/400 file name is valid. Then check whether data is transferred to a data file or to a source file.

If you are transferring data to a data file, ensure that **Use PC file description** has been selected and that a valid file-description file name has been specified.

If you are transferring data to a source file, ensure that **Use PC file description** has not been selected and that a valid record length has been specified.

Execute the data transfer request again.

If another message is displayed, indicating that no file-description file can be found, you will have to create a file-description file to enable the transfer of data to a data file. This can be done in one of the following ways:

If data from AS/400 was first transferred to the personal computer and data is currently being returned from the AS/400 system, a file-description file should have been created when the data was first transferred to the personal computer.

If a file-description file was not created, you can create it by changing the Create AS/400-PC Transfer Request and selecting **Save Transfer Description**. Then execute the Create AS/400-PC Transfer Request again. This creates a file-description file that can be used to transfer data to the AS/400 system.

To prevent overwriting of the data file, specify a temporary personal computer file name that differs from that of the data file being sent.

After data has been transferred and a file-description file has been created, delete this temporary data file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

After a file-description file has been created, start the Create PC-AS/400 Transfer Request, ensure that the file that has just been created has been specified, and complete the transfer request.

If the data to be transferred is other than that received from the AS/400 system, create a file-description file.

After creating a file-description file and prior to executing it again, ensure that the name specified in the Create PC-AS/400 Transfer Request is valid.

If you are performing automatic data transfer, change the transfer request by specifying a file-description file, using the data transfer screen.

For more information, see the recovery action description for interactive data transfer, explained previously.

After making these corrections, retry the transfer request.

**PCSFT205** **Numeric data does not fit into range specified by digits.**

**Explanation:** The data does not fit in the AS/400 field, because the value specified in the file-description file is too large. The number of columns for a decimal number (field size) has been specified in file description for this field on the AS/400 system.

**User Response:** To avoid this error, match the field definitions in the file-description file and in the AS/400 system.

**PCSFT206** **Total length of record exceeds 4096 bytes.**

**Explanation:** The length of the record being transferred exceeds 4096 bytes. The record length includes data, 2 bytes for null map offset, 2 bytes for the length portion of each variable-length field, and 1 byte for each field in the record, used to determine whether the field contains a null value.

**User Response:** Reduce the number of fields such that the length of one record does not exceed 4096 bytes. Then execute the transfer request again.

**PCSFT207** **This system does not support OPTIONS statement.**

**Explanation:** The transfer facility attempted to send an OPTIONS statement to the requested AS/400 system, but an error was returned from the AS/400 system indicating that the AS/400 system did not recognize that statement.

**User Response:** To continue this transfer request, select **OK**. The resulting data is displayed as if the OPTIONS statement had not been sent.

**PCSFT211** **A value must be specified for field reference file name.**

**Explanation:** The field reference file name has not been specified.

**User Response:** If you are performing interactive data transfer, specify the name of the AS/400 file containing the field description of the data to be transferred as the field reference file name. Then execute the transfer request again.

If you are performing automatic data transfer, specify a value for the field reference file name in the transfer request file, using the data transfer screen. Then restart automatic data transfer.

**PCSFT212** **A value must be specified for FROM.**

**Explanation:** The transfer source file has not been specified.

**User Response:** If you are performing interactive data transfer, enter the name of the AS/400 file whose data is to be transferred. Then execute the transfer request again.

If you are performing automatic data transfer, specify a value for the file to be transferred in the transfer request file. Then restart automatic data transfer.

**PCSFT213** **A value must be specified for TO.**

**Explanation:** The transfer destination file has not been specified.

**User Response:** If you are performing interactive data transfer, enter the name of the AS/400 file to which data is to be transferred. Then execute the transfer request again.

If you are performing automatic data transfer, specify a value for the transfer destination file in the transfer request file, using the data transfer screen. Then restart automatic data transfer.

**PCSFT215** **A value must be specified for the 'JOIN BY'.**

**Explanation:** Since two or more AS/400 file names have been specified as files to be transferred, specify the JOIN BY option.

**User Response:** If you are performing interactive data transfer, specify a condition for joining the files to be transferred, using the JOIN BY option. Then execute the transfer request again.

If you are performing automatic data transfer, change the transfer request file by specifying a value for the JOIN BY option using the data transfer screen. Then restart automatic data transfer.

**PCSFT217** **Data types are not compatible.**

**Explanation:** All or part of the personal computer data of the data type specified in the AS/400 file description could not be converted.

**User Response:** If you are performing interactive data transfer:

Ensure that the specified AS/400 system, personal computer data, and file-description file names are valid.

If these file names are valid, the file-description file might not describe the personal computer file data correctly. In this case, change the file-description file.

To change the file-description file:

- If a file-description file was not created at the previous transfer request from the AS/400 system to the personal computer, change this file-description file, using the personal computer edit program.
- If the file-description file was created at the previous transfer request from the AS/400 system to the personal computer, update that file-description file by executing that transfer request again.

  When creating a file-description file, ensure that the data file being transferred to the AS/400 system is not overwritten. To prevent overwriting of this file, specify a temporary personal computer file name that differs from that of the data file, as the transfer destination file.

  After data has been transferred and a file-description file has been created, delete the temporary file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

Ensure that the AS/400 file description is valid. If it is not valid, modify it to match the data type prior to data transfer.

Be particularly careful when correcting this error. Incorrect data might result if an incorrect format is accidentally specified.

If you are performing automatic data transfer, follow the explanation just given for interactive data transfer. If one of the file names specified in the

transfer request needs to be corrected, you must also change the transfer request file, using the Create Data Transfer Request screen.

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**PCSFT218** **Data in this field has too many decimal positions. Number will be rounded.**

**Explanation:** Either of the following things might have occurred:

The number of decimal positions in a personal computer data field is greater than the number of columns specified for the AS/400 system, extra bytes being significant digits (other than zero).

A number in a personal computer data field has too many decimal positions, such that if it is converted, it will be too large for the AS/400 field.

**User Response:** If you are performing interactive data transfer:

If you continue this transfer request, data is rounded up if the first digit of the extra data value is equal to or greater than 5, or is truncated if it is equal to or less than 4. If this number is too small to fit in the corresponding AS/400 field, it is truncated to zero. No notification is posted if this field data is rounded.

If you discontinue this transfer, the remaining records in the personal computer file are not sent to the the AS/400 system. Previously transferred records remain in the AS/400 file, however.

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**PCSFT219** **Data in this field is incorrect or does not match the personal computer data type.**

**Explanation:** All or part of the personal computer data of the data type specified in the AS/400 file description could not be converted.

**User Response:** If you are performing interactive data transfer:

Ensure that the specified AS/400 system, personal computer data, and file-description file names are valid.

If these file names are valid, the file-description file might not describe the personal computer file data correctly. In this case, change the file-description file.

To change the file-description file:

- If a file-description file was not created at the previous transfer request from the AS/400 system to the personal computer, change this file-description file, using the personal computer edit program.
- If the file-description file was created at the previous transfer request from the AS/400 system to the personal computer, update that file-description file by executing that transfer request again.

  When creating a file-description file, ensure that the data file being transferred to the AS/400 system is not overwritten. To prevent overwriting of this file, specify a temporary personal computer file name that differs from that of the data file, as the transfer destination file.

  After data has been transferred and a file-description file has been created, delete the temporary file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

Ensure that the AS/400 file description is valid. If it is not valid, modify it to match the data type prior to data transfer.

Be particularly careful when correcting this error. Incorrect data might result if an incorrect format is accidentally specified.

If you are performing automatic data transfer, follow the explanation just given for interactive data transfer. If one of the file names specified in the transfer request needs to be corrected, you must also change the transfer request file, using the Create Data Transfer Request screen.

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**PCSFT220** **Data in this field is too short for AS/400 field. Data will be padded.**

**Explanation:** During the transfer of character data from the personal computer to the AS/400 system, either of the following things occurred:

The data length of this field, specified in the file-description file, is smaller than the specification made for this field for the AS/400 system.

Data found in the personal computer file is shorter than the length defined for this fixed-length field for the AS/400 system.

**User Response:** If you are performing interactive data transfer:

If you continue the transfer request, this field is embedded to match the specification made for this field for the AS/400 system. In the final character field, spaces are embedded to the right. This embedding must not affect the field value. The remaining fields of this record are automatically filled by the transfer program. No notification is posted.

If you discontinue the transfer request, this record and subsequent data are not transferred to the AS/400 system. Previously transferred data remains in the AS/400 file, however.

If you do not want this embedding to be performed, ensure that the AS/400 system, personal computer, and file-description files have been specified correctly in the transfer request. If they have all been specified correctly, check the file-description file and AS/400 file to ensure that the error field descriptions are valid and match actual data for this record.

If either of those descriptions is incorrect, correct it to match the actual data. Then execute the transfer request again. Change the file-description file, using the personal computer editing program. Or, update it by executing the transfer request again (when the personal computer file-description file was created during data transfer from the AS/400 system to the personal computer).

To prevent overwriting of the data file being sent to the AS/400 system, specify a temporary personal computer file name that differs from that of the data file, as the transfer destination file.

After data has been transferred and a file-description file has been created, you can delete this temporary data file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

To avoid data embedding, the field length described in the file-description file must be equal to that defined for the AS/400 system.

---

**PCSFT221** **Data in this field is too long for AS/400 field. Data will be truncated.**

**Explanation:** Character data longer than the specified transfer destination AS/400 field is defined in the file-description file, the extra characters being significant characters (characters other than spaces).

Or data, after conversion, might be longer than the specified AS/400 field due to the presence of shift characters (SO and SI).

**User Response:** If you are performing interactive data transfer:

If you continue this transfer request, data in this field is truncated to fit the AS/400 field. This results in loss of the original data. The transfer

facility automatically removes all data from this point to the end of this field. No notification is posted.

If you discontinue this transfer request, the current and subsequent records are not transferred to the AS/400 file. Previously transferred records remain in the AS/400 file, however.

If data is not truncated, ensure that the AS/400 system, personal computer, and file-description files have been specified correctly in the transfer request. If they have been specified correctly, check the file-description file and AS/400 file to ensure that the field descriptions are valid and match the actual data for this record. If any description is not valid, correct it to match the actual data. Then execute this transfer request again.

To change the file-description file, use the personal computer edit program. If the file-description file was created during data transfer from the AS/400 system to the personal computer, update the description file by executing that request again. To prevent overwriting of the data file being sent to the AS/400 system, if such updating is performed, specify a temporary personal computer file name that differs from that of the data file, as the transfer destination file name.

After data has been transferred and a file-description file has been created, delete this temporary data file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

Execute this personal computer-to-AS/400 transfer request again. Ensure that the file-description file is valid and that the AS/400 file description matches the final AS/400 field. If this description is not correct, it must be changed before you can complete this transfer request.

To avoid data truncation, the field length specified in the file-description file must be equal to that specified in the AS/400 file.

If this error is caused by the presence of shift characters, change the descriptions in the file-description file and AS/400 file such that all record data is transferred to the AS/400 fields without data truncation.

---

**PCSFT222** **Numeric data has too many digits for AS/400 field. Maximum value will be used.**

**Explanation:** Numeric data will not fit in the AS/400 field, because it exceeds the specified number of columns. This error might also occur if a number has already reached the maximum value and it has more decimal positions than that defined for the AS/400 system. If this number is to be rounded up, it will become too large to fit in the AS/400 field.

**User Response:** To execute this transfer request, while ensuring that this error does not occur, ensure that the AS/400 file, personal computer file, and file-description file have been specified correctly in the transfer request. If they have been specified correctly, check the file-description file and AS/400 file, ensure that the field descriptions are correct, and match the actual data for the record. If those descriptions are not correct, correct them to match the actual data. Then execute the transfer request again.

Change the file-description file by using the personal computer edit program. Or, if the file-description file was created during data transfer from the AS/400 system to the personal computer, update that file-description file by executing that transfer request again.

When executing a transfer request again, change that AS/400-to-personal computer transfer request, to prevent overwriting of the data file, by

specifying a temporary personal computer file name that differs from that of the data file being sent to the AS/400 system, as the transfer destination file.

After data has been transferred and a file-description file has been created, delete this temporary file. Change the name of the new file-description file to match the data file name and append extension **.FDF**.

If the AS/400 system, personal computer, and file-description files are all correct, the amount of file data might be too large to fit in the AS/400 field. In this case, correct the data before transfer. Or, change the transfer facility to enable use of the maximum value.

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**PCSFT223** **Data for this field is missing. Default values will be used.**

**Explanation:** This field is defined in the file-description file and the AS/400 file, but it does not exist in the personal computer data file.

**User Response:** If you are performing interactive data transfer:

If you continue the transfer request, this data-missing field is filled with an appropriate default character (spaces in character fields, zeros in numeric fields). If data is missing in this field of a subsequent record, no message is posted.

If you discontinue the transfer request, the records remaining in the personal computer file are not sent to the AS/400 system. Previously transferred records remain in the AS/400 file, however.

If a null value is missing from the field, the AS/400 file description must be corrected to specify that this field can contain a null value.

---

**PCSFT224** **Data in this field exceeds PC field size. Data will be lost.**

**Explanation:** A personal computer field longer than the specification in the file-description file exists. This error occurs only during transfer of a BIFF file, DIF file, or a BASIC serial file.

**User Response:** To execute the transfer request, without this error occurring, ensure that the AS/400 system, personal computer, and file-description files have been specified correctly in the transfer request. If they have been specified correctly, check descriptions in the file-description file and AS/400 file. If either of these descriptions is not valid, correct it to match the actual data. Then execute the transfer request again.

---

**PCSFT225** **Data size in bytes and decimal positions must be equal for a No conversion file transfer.**

**Explanation:** During record transfer without conversion to an AS/400 file, the size (in bytes) or the number of decimal positions specified for the field does not match the file data format. When you transfer data without conversion, the field descriptions must match exactly.

**User Response:** Field length definitions are not identical. The file-description file must be changed such that the two definitions match.

The definition in the file-description file must match the data format of the personal computer file without conversion. Correct the definition. Then execute the transfer request again.

If you are performing automatic data transfer, the transfer program terminates automatically. The field-length definitions are not identical. Change the length definition in either the file-description file or the AS/400 file, such that the two match. Ensure that the personal computer file definition matches the data format of the personal computer file without

conversion. After correcting the field definition, execute the transfer request again.

---

**PCSFT226** **PC data file is incorrect of version of the data format is not supported.**

**Explanation:** While transferring data from a personal computer data file to an AS/400 file, the transfer program found the personal computer data file is incorrect or does not support the version of the data format.

**User Response:** Check and correct the format of the personal computer file, and then try the operation again. Or ask your system administrator the version of the personal computer data file format.

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**PCSFT230** **File is not a PC file description file.**

**Explanation:** The name of the file-description file is incorrect or the file contents are incorrect.

**User Response:** If you are performing interactive data transfer, correct the file-description file name. Then execute the transfer request again. (To display a list of existing file-description files when changing this prompt, click on **Browse**.)

If you are performing automatic data transfer, change the transfer request by correcting the file-description file name by using the data transfer screen. Then execute the transfer request again.

If you created this file-description file, use the personal computer edit program to correct it. If this file-description file was created during data transfer from the AS/400 system to the personal computer and its file name has been specified correctly, it must be re-created.

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**PCSFT231** **File type is incorrect or missing in PC file description file.**

**Explanation:** A record having an incorrect file type (PCFT) specification was detected. A value other than 1–9 has been specified as the file type, or this PCFT record is not the second record in the file-description file (excluding comments).

**User Response:** Using the personal computer edit program, correct the file type specification or add a PCFT specification. Then execute the transfer request again.

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**PCSFT232** **Field type is incorrect or missing in PC file description file.**

**Explanation:** When retrieving information from the file-description file (PCFL), the transfer facility detected an incorrect field type specification for a PCFL item.

**User Response:** Correct the field type specification, using the personal computer edit program. Then execute the transfer request again.

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**PCSFT233** **Field length is incorrect or missing in PC file description file.**

**Explanation:** When retrieving information from the file-description file (PCFL), the transfer facility detected an incorrect field length specification for a PCFL item.

**User Response:** Correct the field length specification, using the personal computer edit program. Then execute the transfer request again.

**PCSFT234** **Field type not compatible with file type in PC file description file.**

**Explanation:** The file-description file (PCFL) contains a field type that cannot be used with the specified file type.

**User Response:** Correct the field type or file type of the file-description file. Then execute the transfer request again.

**PCSFT235** **Field name is longer than 30 characters in PC file description file.**

**Explanation:** The field name of a PCFL item in the file-description file (PCFL) is longer than the maximum number of characters (30 characters).

**User Response:** Correct the field name in the file-description file, using the personal computer edit program. This field name must exactly match the corresponding field name in the AS/400 file (name of the field to which this data is to be transferred).

**PCSFT236** **Incorrect record in PC file description file.**

**Explanation:** The file-description file (PCFL) contains an incorrect record. The record type must begin with PCFT, PCFL, PCFO, or * (for a comment).

**User Response:** Correct or delete the record in the personal computer file-description file, using the personal computer edit program. Then execute this transfer request again.

**PCSFT237** **Incorrect decimal positions in PC file description file.**

**Explanation:** The file-description file (PCFL) contains a record for which the number of decimal positions is incorrectly specified.

**User Response:** Correct the decimal position count field in the file-description file, using the personal computer edit program. Then execute the transfer request again.

**PCSFT238** **More than 256 fields in PC file description file.**

**Explanation:** The file-description file (PCFL) contains too many field description records. A maximum of 256 field description records can be specified.

**User Response:** Using the personal computer edit program, reduce the number of field description records in the file-description file to reflect the first 256 fields only. This correction is needed only if the data file contains 256 fields. Otherwise, data cannot be transferred correctly.

**PCSFT239** **File type specified more than once in PC file description file.**

**Explanation:** The file-description file (PCFL) contains more than one personal computer file type specification.

**User Response:** Using the personal computer edit program, correct the file-description file such that the personal computer file type is specified only once. Then execute the transfer request again.

**PCSFT240** **Extra data was found at the end of record. Extra data will not be transferred.**

**Explanation:** The personal computer file contains an extra field that is not specified in the file-description file.

**User Response:** If you are performing interactive data transfer:

If you select **OK**, extra data is not transferred to the AS/400 file. If the transfer program detects a second undefined data item in the file-description file, no message is posted. All extra data in the personal computer file is ignored.

If you select **Cancel**, the remaining records in the personal computer file are not sent to the AS/400 file. Previously transferred records remain in the AS/400 file, however.

To prevent the occurrence of this error when executing a transfer request, ensure that the AS/400 system, personal computer, and file-description files have been specified correctly in the transfer request. If they have been specified correctly, check the descriptions in the file-description file and AS/400 file and ensure that any extra data in the personal computer data file has been defined.

**PCSFT241** **Field name is missing in PC file description file.**

**Explanation:** The field name of a PCFL item is missing from the file-description file.

**User Response:** Correct the PCFL item in the file-description file, using the personal computer edit program. Then execute the transfer request again.

**PCSFT242** **No PCFL records were found in personal computer file description file.**

**Explanation:** No PCFL record was found in the file-description file. At least one PCFL record must be defined in a file-description file.

**User Response:** Add a valid PCFL item corresponding to the personal computer data file, using the personal computer edit program. Then execute the transfer request again.

**PCSFT243** **PC file description file is empty.**

**Explanation:** No data was found in the file-description file.

**User Response:** Transfer data from the AS/400 system to the personal computer. Or create a file-description file, using the personal computer edit program. Then execute the transfer request again.

**PCSFT244** **PC file contains no data records to transfer.**

**Explanation:** No data was found in the specified personal computer file. A personal computer data record cannot be transferred to the AS/400 system.

**User Response:** The personal computer file must contain data to be transferred.

**PCSFT245** **PC transfer request file is empty.**

**Explanation:** An attempt was made to open the transfer request file, but the specified file contained no data.

**User Response:** If you are performing interactive data transfer, specify a valid transfer request file name.

**PCSFT246** **No data was matched to the specified options.**

**Explanation:** Your request has been completed, but there was no data matched to the specified options.

**User Response:** None.

**PCSFT251** **Invalid option in PC file description file.**

**Explanation:** In a PCFO item in the field-description file, a number that does not correspond to a valid format or delimiter has been specified.

**User Response:** Specify a valid format and delimiter corresponding to the personal computer file. Correct the field description in the PCFO item. Then execute the request again.

**PCSFT252** **Record length is incorrect.**

**Explanation:** This transfer request is either too short (equal to or shorter than 13 bytes) or too long (equal to or longer than 4097 bytes).

**User Response:** Specify a valid value. Then execute the request again.

**PCSFT253** **Transfer request character cannot be translated.**

**Explanation:** The data transfer was terminated because a character could not be translated.

**User Response:** Check the file to be transferred and the specified translation table, and then execute the translation request again.

**PCSFT254** **Untranslatable numeric data was found.**

**Explanation:** While transferring data, untranslatable numeric data was found.

**User Response:** Make sure the personal computer field type matches the AS/400 field type.

**PCSFT255** **Not connected to the host.**

**Explanation:** Connection to an AS/400 system has not yet been established.

**User Response:** Establish a connection with the AS/400 system with which you want to perform data transfer.

**PCSFT301** **Error detected by AS/400. Statement offset provided.**

**Explanation:** The AS/400 system detected an error.

**User Response:** If you are performing interactive data transfer, the error type is indicated in the text output.

To correct this error, change the transfer request using the data transfer screen or correct it with the AS/400 system.

The IWSxxxx message, written during AS/400 job logging, provides detailed information.

**PCSFT302** **Error detected by AS/400. No statement offset provided.**

**Explanation:** AS/400 detected an error.

**User Response:** The IWSXXXX message, written during AS/400 job logging, provides detailed information.

**PCSFT305** **Number of records exceeds limit of the PC data file. The data transfer is terminated.**

**Explanation:** The number of the received records exceeded the limit of the personal computer data file. The records under the limit were received normally.

**User Response:** None.

**PCSFT306** **Maximum number of transfer requests active.**

**Explanation:** The maximum number of transfer requests is currently active. You cannot start another transfer request.

**User Response:** Close one of the active transfer requests before starting another transfer request.

**PCSFT313** **Can not find necessary programs on the system.**

**Explanation:** A PC Support/400 program tried to communicate with a host system program, but the host system program was not found.

**User Response:** Make sure that the host system programs are installed correctly on the host system, and that you are using the latest release of the program.

**PCSFT314** **Programs on the system terminated unexpectedly.**

**Explanation:** The program was trying to communicate with a host system program, but the host system program ended unexpectedly. If you need more information, ask your administrator for the job log.

**User Response:** Make sure that the host system programs are installed correctly on the host system and that you are using the latest release of the program.

**PCSFT315** **Security error is occurred on the system.**

**Explanation:** An incorrect user ID or password was detected when you tried to begin a session on the host system. The cause might be one of the following things:

User ID or password was not entered correctly.
User profile does not exist on the AS/400 system.
User profile has the incorrect authority.

**User Response:** Specify the correct user ID and password. If the problem persists, check the error messages on the AS/400 QSYSOPR message queue.

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**PCSFT316** **The system is not a supported system.**

**Explanation:** Your specified system is not supported.

**User Response:** Specify the name of the supported system. Ask your system administrator for the name of the supported system.

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**PCSFT318** **Contact with the system ended.**

**Explanation:** The personal computer program is no longer communicating with the system for one of the following reasons:

The connection with the system was stopped.

A permanent error occurred, and the personal computer program could not recover.

**User Response:** Correct the problem and establish a connection with the system again. Try your request again.

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**PCSFT319** **Contact with the system temporarily interrupted.**

**Explanation:** The personal computer is no longer communicating with the system for one of the following reasons:

The connection with the system was stopped.

The cable connection to the system is defective or was disconnected.

The QBASE and QCMN subsystems are not started.

**User Response:** Correct the problem and establish a connection with the system again. Try your request again.

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**PCSFT320** **Resource failure on the system.**

**Explanation:** There are not enough resources available on the system to start the requested operation. This message is displayed in the following cases:

The maximum number of sessions are already communicating with the system. No more session conversations are allowed.

There is not enough memory or disk space available on the AS/400 system to start the requested operation.

A system name was not found.

If you are using PC Support/400 pass-through, a connection to the requested system cannot be established.

The line controller or device is varied off on the AS/400 system.

The subsystem the device is attached to was not started or is ending.

There is a problem accessing objects associated with the user profile for the user ID that was used to sign on to the router.

**User Response:** Try your request again when the system resources are available. If possible, release one of the active sessions.

If there is a problem with the user profile information, the system operator message queue on the AS/400 system contains CPF1269, which indicates the reason for the failure. You can use this message information to determine the cause of the problem. You might have to start the router again to make the change of the user profile effective.

**PCSFT321** **Conversation with the system ended unexpectedly.**

**Explanation:** The previous active conversation with the system was ended unexpectedly. The conversation was ended for one of the following reasons:

A connection with the system was stopped.
A communication failure occurred.

**User Response:** Correct the problem and establish a connection with the system again. Try your request again.

**PCSFT323** **Options not fully supported on this host system.**

**Explanation:** The OPTIONS statement sent to the AS/400 system had keywords that are supported on the personal computer but are not supported on the AS/400 system. An earlier release of PC Support/400 is installed on your AS/400 system.

**User Response:** Your request is continued, but the keyword not supported on the host system and other keywords following the unsupported one are ignored. To avoid this error, check the release level of your AS/400 system to identify the supported keywords, and change your transfer request using only valid keywords.

**PCSFT401** **Transfer request has been changed. Save changes?**

**Explanation:** Selecting **Yes** causes the transfer request save screen to appear.

**User Response:** Select **Yes** to save changes.

**PCSFT402** **Add this icon to the desktop ?**

**Explanation:** Selecting **Yes** causes an icon to be registered with the contents of the current transfer request file. You can subsequently execute automatic data transfer simply by clicking on this icon.

**User Response:** Select **Yes** to add the icon.

**PCSFT403** **To start this transfer function with the modified definition, enter '*command*' in OS/2 command prompt.**

**Explanation:** You saved the transfer request without adding the icon to the desktop.

**User Response:** Select **OK**.

**PCSFT404** **To start the transfer function that you have just saved, choose the '*icon*' icon in the '*folder-name*' folder.**

**Explanation:** You saved the transfer request and added the icon to the specified folder.

**User Response:** Select **OK**.

**PCSFT405** **An icon was not added to the desktop.**

**Explanation:** You attempted to add a data transfer icon to the desktop, but it failed.

**User Response:** None.

**PCSFT406** **Error saving the transfer description : *file-name*.**

**Explanation:** An attempt was made to save the transfer request file, but it was not successful.

**User Response:** Ensure that the drive, directory, and file names are correct.

**PCSFT410** **System name is incorrect or inactive.**

**Explanation:** Connection to the specified AS/400 system has not yet been established.

**User Response:** Establish a connection with the AS/400 system with which you want to perform data transfer.

**PCSFT411** **Syntax of system name is invalid.**

**Explanation:** The syntax of the system name specification is not valid.

**User Response:** Correct the system name specification. Then execute the transfer request again. From the data transfer screen, you can view a list of AS/400 systems with which connection has been established.

**PCSFT412** **A value must be specified for system name.**

**Explanation:** The system name has not been specified.

**User Response:** If you are performing interactive data transfer, enter the system name. Then execute the transfer request again.

If you are performing automatic data transfer, specify the system name in the transfer request file, using the data transfer screen. Then restart the automatic data transfer.

**PCSFT420** **PC file to receive data records already exists. Do you want to overwrite it ?**

**Explanation:** The specified file already exists. This message requests confirmation of whether the file can be overwritten.

**User Response:** Selecting **Yes** causes the file to be overwritten.

**PCSFT421** **Specified PC file was not found. Specify the correct PC file name.**

**Explanation:** The specified file does not exist.

**User Response:** Specify a valid file. Then execute the transfer request again.

**PCSFT422** **PC file name is incorrect. Specify the correct PC file name.**

**Explanation:** An incorrect file name has been specified.

**User Response:** The cursor is positioned to the field for which the incorrect file name was specified. Specify a valid file name. Then execute the transfer request again.

**PCSFT423** **Invalid syntax for the file name.**

**Explanation:** The syntax of the specified file name is not valid.

**User Response:** If you are performing interactive data transfer, enter the correct file name. Then execute the transfer request again.

If you are performing automatic data transfer, specify the correct file name in the transfer request file, using the data transfer screen. Then restart the automatic data transfer.

**PCSFT424** **Sort sequence table name cannot be blank. The sort sequence choice has been reset to the AS/400 Job Default.**

**Explanation:** The sort sequence table name stored in the transfer request file is blank.

**User Response:** Specify the correct sort sequence table name. After changing the table name, save the transfer request file and try the transfer request again.

**PCSFT425** **Language ID cannot be blank. The language choice has been reset to the AS/400 Job Default.**

**Explanation:** The language ID stored in the transfer request file is blank.

**User Response:** Specify the correct language ID. After changing the language ID, save the transfer request file, and try the transfer request again.

**PCSFT999** **An unexpected error has been detected while processing transfer request.**

**User Response:** Report the problem to your system administrator.

**PCSGRP001** **Too little space for the Retain buffer.**

**Explanation:** There is not enough space for the retain buffer used for graphic redrawing.

**User Response:** Terminate the application program, and select **Bitmap** in the **Redraw** field.

**PCSHAM001** **The communication-port number in your WorkStation profile is invalid.**

**Explanation:** You specified an incorrect port number for the Hayes AutoSync connection.

**User Response:** Change the port number to one that is available on your personal computer. If you are using a PCMCIA modem, it may be that it has not been enabled or that it has been assigned to a different COM port

**PCSHAM002** **The SDLC station address is invalid. Only values from 01 to FE are allowed.**

**Explanation:** You selected **OK** in the Hayes AutoSync Attachment window, but the value in the **SDLC station address** entry field was not valid. Or, you attempted to start the session with a profile that specifies an invalid SDLC station address.

**User Response:** Change the SDLC station address in the Hayes AutoSync Attachment window.

**PCSHAM003** **The PU ID in your WorkStation profile is invalid.**

**Explanation:** The PU ID specified in the workstation profile is not valid. The workstation profile has probably been changed manually or has been corrupted.

**User Response:** Correct the workstation profile manually. Valid characters for the PU ID are 0–9, A–F (hex).

**PCSHAM004** **The Block ID in your WorkStation profile is invalid.**

**Explanation:** The block ID specified in the workstation profile is not valid. The workstation profile has probably been changed manually or has been corrupted.

**User Response:** Correct the workstation profile manually. Valid characters for the block ID are 0–9, A–F (hex).

**PCSHAM011** **The communication port selected is already being used by another application.**

**Explanation:** None

**User Response:** Change the port number to one that is not currently being used.

**PCSHAM012** **No more ports can be opened.**

**Explanation:** You tried to open two or more ports at the same time. You may use only a single port at one time for the SNA-over-Async (SNA-A) attachment, so all SNA-A sessions must use the same port.

**User Response:** Use the same profile for all SNA-A sessions.

**PCSHAM013** **Hayes Autosync Attachment does not support multiple ports.**

**Explanation:** You attempted to connect multiple Hayes Autosync attachments. Only one such connection can be used at a time.

**User Response:** Reconfigure the session to use the same port as the session that is already running.

**PCSHPO001** **The communication-port number in your WorkStation profile is invalid.**

**Explanation:** You specified an incorrect port number for the IBM Global Network Connection.

**User Response:** Change the port number to another that is available on your personal computer. If you are using a PCMCIA modem, it may be that it has not been enabled or that it has been assigned to a different COM port.

**PCSHPO002** **The line speed in your WorkStation profile is invalid.**

**Explanation:** The line-speed entry in your workstation profile may have been altered manually.

**User Response:** Reconfigure the session through the panels so that a valid value will be entered in the profile.

**PCSHPO011** **The communication port selected is already being used by another application.**

**Explanation:** None.

**User Response:** Change the port number to one that is not currently being used.

**PCSHPO013** **IBM Global Network Connection does not support multiple ports.**

**Explanation:** You attempted to connect multiple IBM Global Network attachments. Only one such connection can be used at a time.

**User Response:** Reconfigure the session to use the same port as the session that is already running.

**PCSINST002** **The Personal Communications installation program is already running. You can run it only once at a time.**

**Explanation:** You tried to start the installation program when it was already running.

**User Response:** If you really want to start the program again, close the current instance of it.

**PCSINST003** **Personal Communications installation has been cancelled.**

**Explanation:** You selected **Cancel** during the installation operation. The installation process did not complete.

**User Response:** Restart the installation process from the beginning.

**PCSINST010** **The Personal Communications installation program does not recognize the specified file:** *file-name***.**

**Explanation:** You attempted to start the Personal Communications installation program with the file *file-name* as a parameter.

**User Response:** The **install** command does not allow file names as parameters. Remove the file name and try again.

**PCSINST011** **The Personal Communications installation program does not allow the parameter:** *parameter***.**

**Explanation:** You attempted to start the installation program with an incorrect parameter.

**User Response:** Remove the incorrect parameter and try again.

**PCSINST012** **The Personal Communications files have not been correctly installed on the server, so you cannot use them.**

**Explanation:** You attempted to start the installation program with the option /**N**, but the program files have not been correctly installed on the server.

**User Response:** Contact your system administrator. It is likely that the files will have to be re-installed on the server with the **Install** /**A** command.

**PCSINST019** **Files cannot be backed up to the source sub-directory. Please change the target drive or directory.**

**Explanation:** For the backup directory, you specified the same path as that from which you are trying to install Personal Communications.

**User Response:** Change the backup drive or directory.

**PCSINST020** **Do you want to overwrite the previous version of Personal Communications that is in the specified directory?**

**Explanation:** As the target directory, you specified the directory in which the previous version of Personal Communications was installed.

**User Response:** Select **Yes** if you do not care if the installation program destroys the previous version. Otherwise, select **No**, and specify another drive and directory.

**PCSINST021** **FileS cannot be copied into the source sub-directory. Please change the target drive or directory.**

**Explanation:** As the target directory, you specified the source directory.

**User Response:** Change the target drive or directory and try again.

**PCSINST022** **Error creating the sub-directory. Please change the target drive or directory.**

**Explanation:** You specified a subdirectory that does not exist, and the installation program could not create that subdirectory.

**User Response:** Change the target drive or directory and try again.

**PCSINST030** **Personal Communications requires** *xxxx* **bytes of disk space on drive** *disk-drive***: to complete the installation.**

**Explanation:** There is not enough space for Personal Communications on the target disk.

**User Response:** Make space on the disk or make another disk the target, and try again.

**PCSINST031** **The files required to install Personal Communications cannot be found on the source diskette or in the fixed-disk subdirectory.**

**Explanation:** The files required to install Personal Communications were not found in the source path. The source diskette may have been corrupted.

**User Response:** Try again, using the correct installation diskettes, or check that you specified the correct drive and path.

**PCSINST040** **Error opening the Personal Communications file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to open the file: *file-name* in either the installation source diskette or directory or the target directory. The source diskette may have been corrupted.

**User Response:** Check the status of the target directory, and try again, using the correct installation diskettes.

**PCSINST041** **Error reading the Personal Communications file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to read the file: *file-name* from the source diskette or disk. The source diskette may have been corrupted.

**User Response:** Try again, using the correct installation diskettes.

**PCSINST042** **Error writing the Personal Communications file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications tried to write the file: *file-name* to the target directory.

**User Response:** Check the status of the target directory and try again.

**PCSINST050** **You are installing Personal Communications from a server. Do you want to share the program files with other users? If so, INSTALL will copy only your private files to a directory on your own PC or to a private drive on a server.**

**Explanation:** None.

**User Response:** To share the Personal Communications files, except some private files, with other users on the network, select **Yes**.

To copy all the Personal Communications files to your own PC or server directory, select **No**.

**PCSINST100** **A Personal Communications folder has been created. To start the first session, double-click the Start/Configure session icon.**

**Explanation:** The installation program has created a folder called Personal Communications and has put the standard icons into it. If you have migrated from a previous release, or from Communications Manager/2, you will also find icons for migrated sessions.

**User Response:** If this is a first-time installation, double-click the Start/Configure Session icon; this will allow you to configure your session parameters.

**PCSINST101** **Icons for Personal Communications have not been added to the desktop. You must start the programs manually.**

**Explanation:** You chose not to add the Personal Communications icons to the folder.

**User Response:** You have to start Personal Communications manually from the OS/2 command prompt.

To start a single session, you must enter: *d:\path***pcsws.exe** *d:\path***private\xxx.ws**

To start a Personal Communications batch file, you must enter: *d:\path***pcsbat.exe** *d:\path***private\xxx.bch /R**

**PCSKBD001** *file-name* **cannot be found.**

**Explanation:** The file *file-name* could not be found in the specified path.

**User Response:** Make sure that the correct path and file name are given.

**PCSKBD002** *file-name* **is not a valid filename.**

**Explanation:** None.

**User Response:** Make sure that the correct name is specified.

**PCSKBD100** **The file:** *file-name* **is not a Personal Communications keyboard file.**

**Explanation:** The file *file-name* does not have a valid format as a Personal Communications keyboard file. This message may appear if you have manually modified the file.

**User Response:** Make sure that the file name is correct, and, if it is, re-create the file in the Customize Keyboard window, then try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD101** **Unrecognized expression in keyboard-file:** *file-name***. Expression:** *key-name***=***value*

**Explanation:** There is an incorrect expression (*key-name=value*) in the Personal Communications keyboard file *file-name*. This message may appear if you have manually modified the file.

**User Response:** Re-create the file, using the Customize Keyboard window, and try again. If the problem persists, install Personal Communications again.

**PCSKBD110** *keyboard-name* **is not supported.**

**Explanation:** The *keyboard-name* keyboard configured for your personal computer is not supported.

**User Response:** Change the keyboard to one supported by Personal Communications using the OS/2 Selective Install program, stop and restart OS/2, then try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD150** **The Customize Keyboard dialog box is already open.**

**Explanation:** You selected **Customize** in the Keyboard Setup window while the Customize Keyboard window was already open.

**User Response:** Close the Customize Keyboard window in the other session before attempting to open it in this one.

**PCSKBD151** *file-name* **has been changed. Save the changes?**

**Explanation:** You attempted to exit the Customize Keyboard window without saving the changes,

**User Response:** To exit after saving the changes, select **Yes**. To exit without saving the changes, select **No**. To do neither, select **Cancel**; the Customize Keyboard window remains open.

**PCSKBD152** **Error writing keyboard file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to write the file *file-name* to disk.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSKBD160** **Unrecognized key-action:** *key-action*.

**Explanation:** You clicked **Change Key** in the Customize Keyboard window, but an unrecognized key action was found in the highlighted edit field.

**User Response:** Correct the key action manually or select a key action from the Function list, and click select the appropriate arrow, then try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD200** **The file:** *file-name* **is not a Personal Communications popup-keypad file.**

**Explanation:** The file *file-name* does not have a valid format as a Personal Communications pop-up keypad file. This message may appear if you have manually modified the file.

**User Response:** Make sure that the file name is correct, and, if it is, re-create the file in the Customize Pop-up Keypad window, then try again. If the problem persists, install Personal Communications again.

**PCSKBD201** **Error in the dimensions of the popup keypad defined in popup-keypad file:** *file-name*. **Dimension: Pad=***xx*, **Column=***yy*, **Row=***zz*.

**Explanation:** The dimension (*Pad=xx, column=yy, Row=zz*) defined in the Personal Communications pop-up keypad file *file-name* is not within the supported range. This message may appear if you have manually modified the file.

**User Response:** Re-create the pop-up keypad file, using the Customize Popup Keypad window, and try again. If the problem persists, install Personal Communications again.

**PCSKBD203** **Unrecognized expression in popup-keypad file:** *file-name*.

**Expression:** *key-name*=*value*.

**Explanation:** An incorrect expression (*key-name=value*) was found in the Personal Communications pop-up keypad file *file-name*. This message may appear if you have manually modified the file.

**User Response:** Re-create the file, using the Customize Popup Keypad window, and try again. If the problem persists, install Personal Communications again.

**PCSKBD210** **Error in the dimension of the popup keypad. dimension: Pad=***xx*, **Column=***yy*, **Row=***zz*.

**Explanation:** A Personal Communications internal error was detected in the pop-up keypad operation.

**User Response:** Ask your system administrator for assistance.

**PCSKBD250** **Customize Popup Keypad window is already open.**

**Explanation:** You attempted to select **Customize** in the Popup Keypad Setup window while the Customize Popup Keypad window was already open.

**User Response:** Close the Customize Popup Keypad window before attempting to select it.

**PCSKBD251** *file-name* **has been changed. Save the changes?**

**Explanation:** You attempted to exit the Customize Popup Keypad window without saving the changes,

**User Response:** To exit after saving the changes, select **Yes**. To exit without saving the changes, select **No**. To cancel without exiting, select **Cancel**; the Customize Popup Keyboard window remains open.

**PCSKBD252** **Error writing popup-keypad file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to write the Personal Communications pop-up keypad file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSKBD300** **The file:** *file-name* **is not a Personal Communications mouse file.**

**Explanation:** The file *file-name* did not have a valid format for a Personal Communications mouse file. This message sometimes appears if you have manually modified the mouse file.

**User Response:** Make sure that the correct file name is given, and if it is, re-create the Personal Communications mouse file in the Customize Mouse window, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD301** **Unrecognized key expression in mouse file:** *file-name***. key expression:** *key-name***.**

**Explanation:** The key name (*key-name*) was not found in the Personal Communications mouse file *file-name*. This message sometimes appears if you have manually modified the mouse file.

**User Response:** Re-create the Personal Communications mouse file using the Customize Mouse window, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD302** **Unrecognized expression in mouse file:** *file-name***. expression:** *key-name***=***value***.**

**Explanation:** An incorrect expression (*key-name=value*) was found in the Personal Communications mouse file *file-name*. This message sometimes appears if you have manually modified the mouse file.

**User Response:** Re-create the Personal Communications mouse file using the Customize Mouse window, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD350** **Customize Mouse window is already open.**

**Explanation:** You attempted to select **Customize** in the Mouse Setup window while the Customize Mouse window was already open.

**User Response:** Close the Customize Mouse window before attempting to select it.

**PCSKBD351** *file-name* **has been changed. Save the changes?**

**Explanation:** You attempted to exit the Customize Mouse window without saving the changes,

**User Response:** To exit after saving the changes, select **Yes**. To exit without saving the changes, select **No**. To cancel without exiting, select **Cancel**; the Customize Mouse window remains open.

**PCSKBD352** **Error writing mouse file:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to write the Personal Communications mouse file *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSKBD400** **The file:** *file-name* **is not a Personal Communications macro file.**

**Explanation:** The file *file-name* did not have a valid format for a Personal Communications macro file. This message sometimes appears if you have manually modified the macro file.

**User Response:** Make sure that the correct file name is given, and if it is, re-create the Personal Communications macro file in the Customize Macro window, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD401** **No macro file can be found in the directory:** *directory-name***.**

**Explanation:** No Personal Communications macro file was found in the directory *directory-name*.

**User Response:** Make sure that the Personal Communications macro file exists in the directory, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD402** **Unrecognized expression in macro file:** *file-name***. expression:** *value***.**

**Explanation:** An incorrect expression (*value*) was found in the Personal Communications macro file *file-name*. This message sometimes appears if you have manually modified the macro file.

**User Response:** Re-create the Personal Communications macro file using the Customize Macro window, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD410** **Macro:** *macro-name* **cannot be found.**

**Explanation:** The macro *macro-name* was not found in the macro table currently loaded.

**User Response:** Close the Personal Communications workstation program, restart it, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD450** **Customize Macro window is already open.**

**Explanation:** You attempted to select **Customize** in the Macro Setup window while the Customize Macro window was already open.

**User Response:** Close the Customize Macro window before attempting to select it.

**PCSKBD451** *file-name* **has been changed. Save the changes?**

**Explanation:** You attempted to exit the Customize Macro window without saving the changes,

**User Response:** To exit after saving the changes, select **Yes**. To exit without saving the changes, select **No**. To cancel without exiting, select **Cancel**; The Customize Macro window remains open.

**PCSKBD452** **The file:** *file-name* **is not a Personal Communications macro file. The file extension must be "MAC."**

**Explanation:** The file *file-name* was not a Personal Communications macro file.

**User Response:** Make sure that the correct file name and file extension are given, and then try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD453** **Macro file:** *file-name* **is too large.**

**Explanation:** You attempted to open the file *file-name* in the Customize Macro window, but it was too large.

**User Response:** Make sure that the given file is the Personal Communications macro file, and try the operation again. If the problem persists, install Personal Communications again.

**PCSKBD460** **Unrecognized key action in the highlighted line.**

**Explanation:** You attempted to save the macro into the macro file in the Customize Macro window, but an unrecognized key action was found in the macro statements.

**User Response:** Select a key action from the List of Key Actions or type any interspersed text strings necessary to complete the macro; then try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD461** **Macro:** *macro-name* **cannot be found. Please create it, otherwise this macro will not work correctly.**

**Explanation:** You attempted to save the macro into the macro file in the Customize Macro window, but the macro used in the current macro does not exist.

**User Response:** Follow the instruction in the message and create the macro referred to by the current macro. Otherwise, when you invoke the current macro, you will get an error message.

**PCSKBD462** **String in the highlighted line is too long.**

**Explanation:** You attempted to save the macro into the macro file in the Customize Macro window, but the macro in the highlighted line was too long.

**User Response:** Change the macro expression so that it does not exceed 253 characters, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSKBD500** **The label name '*label-name*' was not found in '*macro-name*.'**

**Explanation:** Although you specified the target label '*label-name*' followed by the GOTO statement, it was not found in the macro.

**User Response:** Check if the label name exists in the macro, and then add or correct the required label in the macro.

**PCSKBD501** **Invalid label name was found in '*macro-name*.'**

**Explanation:** An incorrect label name was found in the macro. The possible reasons for the error are as follows:

A character other than alphabetic characters (A–Z) and numeric characters (0–9) is used.

The length of the label name exceeds 32 characters.

The label name is defined as a case-sensitive character string.

**User Response:** Identify the cause of the error, and then remove or correct the label name in the macro.

**PCSKBD502** **The label name '*label-name*' already exists in '*macro-name*.'**

**Explanation:** A duplicate label name was found in the macro.

**User Response:** Change one of these label names to an appropriate one.

**PCSKBD601** **The current host code page conflicts with the selected keyboard-file code page.**

**Explanation:** The code page in the keyboard file does not match the current host code page. Some characters may not be displayed correctly.

**User Response:** Open the Keyboard Setup window and either define a new keyboard file or redefine the current keyboard file.

**PCSKBD602** **The current host code page conflicts with the selected popup-keypad file code page.**

**Explanation:** The code page in the popup-keypad file does not match the current host code page. Some characters may not be displayed correctly.

**User Response:** Open the Popup Keyboard Setup window and either define a new popup-keypad file or redefine the current popup-keypad file.

**PCSKBD603** **The current host code page conflicts with the selected mouse-file code page.**

**Explanation:** The code page in the mouse file does not match the current host code page. Some characters may not be displayed correctly.

**User Response:** Open the Mouse Setup window and either define a new mouse file or redefine the current mouse file.

**PCSKBD604** **The current host code page conflicts with the loaded macro *%s* code page.**

**Explanation:** The code page in the loaded macro *macro-name* does not match the current host code page. Some characters included in the macro *macro-name* may not be displayed correctly.

**User Response:** Open the Macro Setup window and either define a new macro or redefine the current macro.

**PCSKBD610** **Selected keyboard layout conflicts with personal computer code page of the file** *file-name***. Do you want to customize this?**

**Explanation:** You attempted to choose **Customize** while the selected keyboard layout conflicted with the personal computer code page of the file *file-name*.

**User Response:** Select **Yes** to accept that the customized file name is specified as the code page for the selected keyboard layout. Select **No** to cancel **Customize**.

**PCSKBD611** **Current host code page conflicts with personal computer code page of the file** *file-name***. Do you want to customize this?**

**Explanation:** You attempted to choose **Customize** while the current host code page conflicted with the personal computer code page of the file *file-name*.

**User Response:** Select **Yes** to accept that the customized file name is specified as the code page according to the current host code page. Select **No** to cancel **Customize**.

**PCSMT001** **The file :** *file-name* **cannot be found in the source drive and directory. Please insert another diskette or name a different drive and directory.**

**Explanation:** You attempted to install a CSD or apply a PTF, but there is no required component. This operation has been canceled.

**User Response:** Insert a correct CSD diskette (diskette-1), or specify the correct drive and directory for the CSD diskette. Then try the operation again.

**PCSMT002** **The file :** *file-name* **cannot be found in the target drive and directory. This correction has not been applied.**

**Explanation:** You attempted to apply a PTF, but there is no required component. This operation has been canceled.

**User Response:** Specify the correct target drive and directory to install the CSD diskette, or apply your APAR fix diskette.

**PCSMT003** **The file :** *file-name* **cannot be found in the source drive and directory. Please check your APAR Fix diskette.**

**Explanation:** You attempted to apply a PTF, but there are no fixed modules, which are listed in **PTF.TXT** in your APAR fix diskette.

**User Response:** Check if there are necessary files to apply a PTF in your APAR fix diskette. If you cannot find them, contact an IBM representative to get a correct APAR fix diskette.

**PCSMT004** **This APAR fix is not applicable to this Personal Communications.** *Version/CSD-level* **is required to apply this APAR fix.**

**Explanation:** You attempted to apply a PTF, but the base level of Personal Communications did not match your APAR fix diskette.

**User Response:** Contact an IBM representative to get a correct APAR fix diskette.

**PCSMT005** **File :** *file-name* **cannot be found.**

**Explanation:** You attempted to view the CSD information, but there was no **APARLIST.TXT** found in your CSD diskette. The display CSD information operation has been canceled.

**User Response:** Contact an IBM representative to get the correct Personal Communications CSD diskettes.

**PCSMT006** **PCSMAINT.EXE failed:** *file-name* **file not found.**

**Explanation:** You attempted to apply a PTF by executing **PCSMAINT.EXE**, but there was no **PCSPROD.INF** or **PCSMAINT.TXT** in the current drive and directory, which is required to apply a PTF.

**User Response:** Check if there is **PCSPROD.INF** or **PCSMAINT.TXT** in the current drive and directory. If it is not found, install Personal Communications, a CSD, or APAR fix again.

**PCSMT007** **Personal Communications is active. You must terminate it before you apply a fix.**

**Explanation:** You attempted to apply a PTF, but Personal Communications was running.

**User Response:** Terminate Personal Communications before applying a PTF.

**PCSMT011** **Error happened while Opening the Personal Communications file :** *file-name***. Please retry the operation.**

**Explanation:** You attempted to apply a PTF, but a critical error occurred in opening a file.

**User Response:** Check that your APAR fix diskette is not damaged.

**PCSMT012** **Error happened while reading the Personal Communications file :** *file-name***. Please retry the operation.**

**Explanation:** You attempted to apply a PTF, but a critical error occurred in reading a file.

**User Response:** Check that your APAR fix diskette is not damaged.

**PCSMT013** **Error happened while writing the Personal Communications file :** *file-name***. Please retry the operation.**

**Explanation:** You attempted to apply a PTF, but a critical error occurred in writing a file.

**User Response:** Check that the target disk is not damaged.

**PCSMT015** **Error happened while writing the Personal Communications file :** *file-name* **because the disk is full. Please clear some disk space and retry the operation.**

**Explanation:** You attempted to apply a PTF, but there was no space to save the PTF modules on the disk.

**User Response:** Erase unnecessary files to make free space on the disk, and then try the operation again.

**PCSMT016** **A file could not be copied. Perhaps the disk is full or you are not authorized to write.**

**Explanation:** You attempted to apply a PTF, but the target drive has a problem as follows:

There is no space to save the fix modules on the disk.
When the target drive is a network drive, it is a read-only drive.

**User Response:** If the target disk is full, erase unnecessary files to make free space on the disk. When the target drive is a network drive and you do not have authorization to write, contact your system administrator.

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**PCSNWCS001** **The Server Name specified in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an incorrect server name for the LAN via NetWare for SAA attachment. This message might appear if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct server name in the **Server Name** entry field in the LAN via NetWare for SAA window; then try the operation again. If the problem persists, install Personal Communications again.

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**PCSNWCS002** **The User Name specified in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with the profile, or you attempted to open the profile, specifying an incorrect user name for the LAN via NetWare for SAA attachment. This message might appear if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct user name in the **User Name** entry field in the LAN via NetWare for SAA window; then try the operation again. If the problem persists, install Personal Communications again.

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**PCSNWCS003** **The Service Name specified in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an incorrect service name for the LAN via NetWare for SAA attachment. This message might appear if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct service name in the **Service Name** entry field in the LAN via NetWare for SAA window; then try the operation again. If the problem persists, install Personal Communications again.

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**PCSNWCS004** **The LU Category specified in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an incorrect LU category for the LAN via NetWare for SAA attachment. This message might appear only if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct LU category in the LU Category entry field in the LAN via NetWare for SAA window; then try the operation again. If the problem persists, install Personal Communications again.

**PCSNWCS005** **The LU Name (or LU Pool Name) specified in your WorkStation profile is not valid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an incorrect LU name (or LU pool name) for the LAN via NetWare for SAA attachment. This message might appear if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct LU name (or LU pool name) in the **LU Name** (or **LU Pool Name**) entry field in the LAN via NetWare for SAA window; then try the operation again. If the problem persists, install Personal Communications again.

**PCSNWCS007** **The trace entry size specified in your WorkStation profile is invalid. Default value (576 bytes) will be used instead.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an incorrect trace entry size for the LAN via NetWare for SAA attachment. Only values from 576 to 16384 are allowed.

**User Response:** You can continue your operation, but you should modify the trace entry of your workstation profile.

**PCSNWCS101** **Invalid character is specified.**

**Explanation:** You selected **OK** in the LAN via NetWare for SAA window, but you specified an incorrect character in the entry field.

**User Response:** Type correct characters in the entry field.

**PCSNWCS102** **Required parameter is not specified.**

**Explanation:** You selected **OK** in the LAN via NetWare for SAA window, but you specified nothing in the entry field.

**User Response:** Fill in the entry field and try again.

**PCSNWCS103** **You entered an invalid character in your password.**

**Explanation:** You selected **OK** in the LAN via NetWare for SAA Password window, but you specified an incorrect character in the entry field.

**User Response:** Type a correct character in the entry field.

**PCSNWCS301** **The connection request has been canceled.**

**Explanation:** The connection request was canceled. You might have selected **Cancel** in the LAN via NetWare for SAA Password window, or some network error occurred when the window was displayed.

**User Response:** Disconnect and reconnect to establish the communication.

**PCSNWCS401** **The NetWare Client for OS/2 is not installed.**

**Explanation:** The NetWare Client for OS/2 was not available in your workstation.

**User Response:** Make sure the correct version of NetWare Client for OS/2 is installed before using LAN via NetWare for SAA attachment. For more information, refer to online help.

**PCSNWCS403** **Socket Open Failure: return code -** *xx***.**

**Explanation:** NetWare IPX/SPX driver failed to open a socket.

**User Response:** Ask your system administrator for assistance.

**PCSNWCS404** **IPX.SYS is not installed.**

**Explanation:** NetWare IPX** driver (**IPX.SYS**) is not configured in **CONFIG.SYS**.

**User Response:** Install and configure NetWare Requester for OS/2. For more information, refer to the *NetWare Requester for OS/2* manual.

**PCSNWCS405** **SPX.SYS is not installed.**

**Explanation:** NetWare SPX driver (**SPX.SYS**) is not configured in the **CONFIG.SYS** file.

**User Response:** Install and configure SPX Support. For more information, refer to the *NetWare Requester for OS/2* manual.

**PCSPCO001** **DisplayWrite is not supported.**

**Explanation:** You cannot use DisplayWrite from DBCS devices.

**User Response:** Change to the OfficeVision/400 editing program.

**PCSPCO002** **PCO command processor (PCSPCOC.EXE) failed: DosStartSession return code -** *xx***.**

**Explanation:** When PC400 attempted to execute the PCO command processing program, OS/2 returned an error status.

**User Response:** Install Personal Communications again, and then retry the operation. If this error persists, contact your system administrator.

**PCSPCO003** **Application** *program-name* **is already running.**

**Explanation:** The program *program-name* specified has already been running in OS/2.

**User Response:** Stop the active application program; then run the program again.

**PCSPCO004** **You asked for more than one DisplayWrite 5/2 (DW 5/2) editing session. Only one is allowed.**

**Explanation:** You asked for more than one DisplayWrite 5/2 (DW 5/2) editing session.

**User Response:** If you already canceled a DW 5/2 editing request from the host, close the DW 5/2 editing session associated with it. Then try the operation again.

If not, return to the editing session. You cannot start a new editing session until the first editing session is closed.

**PCSPCO005** **PC Organizer could not assign a system drive.**

**Explanation:** PC Organizer requires a shared folders system drive to be assigned before using the word processing function.

**User Response:** Use the Shared Folders Assign command to explicitly assign a system drive.

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**PCSPCO006** **Path** *path-name* **could not be accessed.**

**Explanation:** The access was denied for one of the following reasons:

The specified path is a secured path. You do not have authority to access the folder.

Your user ID is not in the system directory.

**User Response:** Do one of the following things:

Submit the request again using a different folder.

Have the security officer give you authority to access the folders in the path specified.

Add your user ID in the system directory.

---

**PCSPCO007** **PC Organizer cannot run on the version of DisplayWrite 5/2 being used. Version 1.1.2 or higher is needed.**

**Explanation:** PC Organizer cannot run on the version of DisplayWrite 5/2 being used.

**User Response:** Install DisplayWrite 5/2 Version 1.1.2 or later.

---

**PCSPCO008** **PC Organizer detected a system error.**

**Explanation:** PC Organizer detected a system error.

**User Response:** Restart your computer and retry the operation you were attempting when the problem occurred.

If the problem persists, follow your local network operating procedures. If this does not resolve the problem, contact your service representative.

---

**PCSPCO009** **Program** *program-name* **was not found.**

**Explanation:** Program *program-name* was not found.

**User Response:** Check that you entered the program name correctly. If you did, make sure the specified program is installed and try the operation again.

---

**PCSPCO010** **DisplayWrite 5/2 (DW 5/2) was not loaded.**

**Explanation:** DW 5/2 was not loaded correctly with the information provided in the editor-of-choice fields.

**User Response:** Correct the editor-of-choice fields to reflect the correct location of DW 5/2 and the appropriate startup sequence.

**PCSPCO011** **The editor could not interpret the request it received from PC Organizer.**

**Explanation:** The editor could not interpret the request from PC Organizer.

**User Response:** Close the PC Organizer session. Restart it, and try the operation again.

If the problem persists, follow your local network operating procedures. If this does not resolve the problem, contact your service representative.

**PCSPCO012** **DisplayWrite 5/2 could not process an edit request.**

**Explanation:** DisplayWrite 5/2 could not process an edit request.

**User Response:** Try the operation again.

If the problem persists, follow your local network operating procedures. If this does not resolve the problem, contact your service representative.

**PCSPCO013** **PC Organizer timed out while waiting for a response from the host.**

**Explanation:** PC Organizer timed out while waiting for a response from the host.

**User Response:** If you want to try the operation again, select **Retry**. If you want to cancel the operation, select **Cancel**.

**PCSPCO014** **The request to edit a document failed.**

**Explanation:** The failure occurred for one of the following reasons:

The file extension specified is either **.RFT** or **.FFT**; both are reserved.

The fully qualified file name is longer than 44 characters.

**User Response:** Correct the file name.

**PCSPD010** **You have not set up a printer for this session, so OS/2 default printer will be used instead.**

**To select a printer, choose Printer Setup in the File menu.**

**Explanation:** A printer was not selected for this workstation.

**User Response:** Select a printer using **Printer Setup...** in the File menu. The OS/2 default printer is selected if a printer is not selected.

**PCSPD020** *printer-name* **cannot be found. The OS/2 default printer will be used instead.**

**Explanation:** The specified printer was not found.

**User Response:** Create the specified printer object, or select another printer using **Printer Setup...** in the File menu.

**PCSPD050** **You have not chosen an OS/2 default printer. Print canceled.**

**Explanation:** The print function was canceled, because the OS/2 default printer was not selected.

**User Response:** Select the printer using **Printer Setup...** in the File menu, or select a default printer from a printer object pop-up menu.

**PCSPD070** **You have not chosen a OS/2 default printer. The font list is empty.**

**Explanation:** The font list for the printer was empty, because the printer was not selected.

**User Response:** Select the printer using **Printer Setup...** in the File menu.

**PCSPD090** **Not enough disk space for spooling.**

**Explanation:** There was not enough disk space available in your personal computer for printing.

**User Response:** Delete unnecessary files from your disk, and try the operation again.

**PCSPD091** **Not enough memory space for spooling.**

**Explanation:** There was not enough memory available in your personal computer for printing.

**User Response:** Close one or more applications and try the operation again.

**PCSPD092** **General print error. Command:** *xxxx***.**

**Explanation:** A printer error was reported from the printer driver.

**User Response:** If this error message is displayed before the previous print job is finished, try the operation again after it is finished. Ask your system administrator for assistance if you continue to get this message.

**PCSPFC000** **Converting** *file-name1* **to** *file-name2***.**

**Explanation:** PFT Migration Utility (**PCSPFC.EXE**) is converting the printer function table (PFT) to the printer definition file (PDF).

**User Response:** None.

**PCSPFC001** **PFT conversion completed successfully.**

**Explanation:** The conversion from the PFT to the PDF was completed successfully.

**User Response:** None.

**PCSPFC002** **PFT conversion completed with** *xx* **errors.**

**Explanation:** The conversion from the PFT to the PDF was completed, but errors occurred.

**User Response:** Correct the errors, and execute the conversion again if necessary.

**PCSPFC003** **PFT conversion failed with** *xx* **errors.**

**Explanation:** The conversion from the PFT to the PDF failed because errors occurred.

**User Response:** Correct the errors and execute the conversion again.

**PCSPFC004** **Fatal error: Cannot open file:** *file-name*.

**Explanation:** The conversion from the PFT to the PDF failed, because the PFT Migration Utility could not open the file.

**User Response:** Check the file, and try the operation again.

**PCSPFC005** **Cannot close file:** *file-name*.

**Explanation:** The conversion from the PFT to the PDF failed, because the PFT Migration Utility could not close the file.

**User Response:** Check the file, and try the operation again.

**PCSPFC006** **Cannot delete file:** *file-name*.

**Explanation:** The conversion from the PFT to the PDF failed, because the PFT Migration Utility could not delete the file.

**User Response:** Check the file, and try the operation again.

**PCSPFC007** **Cannot read file:** *file-name*.

**Explanation:** The conversion from the PFT to the PDF failed, because the PFT Migration Utility could not read the file.

**User Response:** Check the file, and try the operation again.

**PCSPFC008** **Cannot write file:** *file-name*.

**Explanation:** The conversion from the PFT to the PDF failed, because the PFT Migration Utility could not write the file.

**User Response:** Check the file, and try the operation again.

**PCSPFC009** **File** *file-name* **is not a PFT file.**

**Explanation:** The conversion from the PFT to the PDF failed, because the specified file was not a PFT file.

**User Response:** Check the file, and try the operation again.

**PCSPFC010** **Cannot migrate** *PDF-field-name*.

**Explanation:** No data was converted into the *PDF-field-name*.

**User Response:** Check the file, and try the operation again. Or specify the data at the field in the PDF file.

**PCSRBW001** **The system settings will not allow you to use the PCS/400 functions. Do you want to change the system settings now?**

**Explanation:** A module required to use PC Support/400 has not yet been loaded.

**User Response:** To change the system settings and load the required module, select **Yes**.

**PCSRTR001** **The PC Support/400 Router has not been started.**

**Explanation:** The PC Support/400 Router has not been started or it has terminated abnormally.

**User Response:** Exit the Windows operating system, and then start the router program.

**PCSRTR002** **The PC Support/400 Windows Compatibility Module has not been installed.**

**Explanation:** The PC Support/400 Windows Compatibility Module (**PCSWIN.EXE**) has not been installed.

**User Response:** Exit the Windows operating system, and then install the PC Support/400 Windows Compatibility Module. Ensure that the Microsoft Windows option is specified in the PC Support/400 configuration.

**PCSRTR003** **The communication buffer for the PC Support/400 Windows Compatibility Module is too small.**

**Explanation:** The communication buffer for the PC Support/400 Windows Compatibility Module (**PCSWIN.EXE**) is too small.

**User Response:** Specify a larger value for the /B= parameter for the PC Support/400 Windows Compatibility Module in the PC Support/400 startup program **STARTPCS.BAT** file. With PC/3270, each session requires 6 KB.

**PCSRTR004** **The AS/400 system is not active.**

**Explanation:** Communication has not been established with the specified host.

**User Response:** Ensure that a valid host system is specified in the PC Support/400 configuration.

**PCSRTR010** **The PC Support/400 Router can not allocate the memory. Please terminate application programs that you are not using.**

**Explanation:** The PC Support/400 Router cannot allocate the conventional memory that is required to perform the request.

**User Response:** Terminate the application programs that are not used or remove the unnecessary Terminate and Stay Resident (TSR) program and start the Windows operating system again.

**PCSRTR021** **The Network Services has not been started.**

**Explanation:** Network Services has not been started or it has terminated abnormally.

**User Response:** Start the Network Services program.

**PCSRUI001** **The LU Name is invalid.**

**Explanation:** The specified LU name is not valid. The LU name must be 1 to 8 characters, and the first character must be an alphabetic (A–Z) or a special character (@, #, $). The remaining characters can be alphanumeric (a–z, A–Z, 0–9) or special characters (@, #, $).

**User Response:** Type the correct LU name.

**PCSRUI002** **The LU Name was not specified.**

**Explanation:** The LU name must be specified for this connectivity.

**User Response:** Type the correct LU name.

**PCSRUI005** **The LU Name *lu-name* is not configured in *CM/2-configuration-file-name* CM/2 configuration. Do you want to change it?**
**Note: If you create a new LU, you must also add it to your CM/2 configuration.**

**Explanation:** You are attempting to exit the LUA 3270 configuration panel with an LU name that is not configured on Communication Manager/2.

**User Response:** Change the specified LU after selecting **No**, or configure the specified LU on Communication Manager/2 after selecting **Yes**.

**PCSRUI006** **Communications Manager/2 did not start. The specified CM/2 configuration is not valid or cannot be found.**

**Explanation:** Communications Manager/2 did not start. The specified CM/2 configuration is not valid or cannot be found.

**User Response:** Verify that Communications Manager/2 is installed and configured correctly.

**PCSRUI010** **The LU Name specified in your workstation profile is invalid.**

**Explanation:** You specified an incorrect LU name in your workstation profile.

**User Response:** The name can contain alphanumeric characters and the special characters $, #, and @.

**PCSRUI011** **The LU Name specified in your WorkStation profile exceeds 8 characters.**

**Explanation:** The LU name length must be eight characters or shorter.

**User Response:** Specify a name from one to eight characters long.

**PCSRUI020** **Communication Manager/2 or its necessary components have not been installed.**

**Explanation:** This connectivity requires Communication Manager/2 and its LUA API feature. Personal Communications could not find the necessary modules of Communication Manager/2.

**User Response:** Install Communication Manager/2. If it has already been installed, make sure that the LUA API feature is properly installed.

**PCSRUI022** **The specified LU name is being used by another session.**

**Explanation:** Each LUA 3270 session requires a unique LU. The LU must be configured on Communication Manager/2 LUA configuration. The other Personal Communications session has already used the LU specified in this session configuration.

**User Response:** Change the LU specified in this session configuration, or stop the session that is using the LU.

**PCSRUI023** **Communication Manager/2 or its necessary components have not been installed. Do you want to continue? If you choose Yes, you can install CM/2 later.**

**Explanation:** You are attempting to configure LUA3270, but Communication Manager/2 is not installed or its LUA API feature is not properly installed. It might be easier to configure LUA3270 after installing Communication Manager/2.

**User Response:** Install Communication Manager/2 before starting communication.

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**PCSSDLC002 The PU ID in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an unrecognized PU ID for Synchronous Data Link Control. This message sometimes appears if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct PU ID in the **Physical Unit ID** entry field in the SDLC Attachment window; then try the operation again. If the problem persists, install Personal Communications again.

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**PCSSDLC003 The Block ID in your WorkStation profile is invalid.**

**Explanation:** You attempted to start the Personal Communications workstation program with a profile, or you attempted to open a profile, specifying an unrecognized block ID for the Synchronous Data Link Control. This message might appear if you have manually modified the workstation profile.

**User Response:** Re-create the Personal Communications workstation profile after specifying the correct block ID in the **Block ID** entry field in the SDLC Attachment window; then try the operation again. If the problem persists, install Personal Communications again.

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**PCSSDLC010 An SDLC adapter has not been installed.**

**Explanation:** You attempted to connect the Personal Communications workstation window to your application through Synchronous Data Link Control, but the adapter was not found.

**User Response:** Make sure that the adapter for Synchronous Data Link Control is installed on your personal computer and the adapter number specified in your profile matches the installed adapter number; then try the operation again. If the problem persists, ask your system administrator for assistance.

---

**PCSSETUP001 The Personal Communications files that are needed to perform the function you selected have not been installed. Do you want to install the files now?**

**Explanation:** You attempted to perform some functions of Personal Communications, but the required modules or files did not exist in the directory where Personal Communications is installed.

**User Response:** Select **Yes** to install the required modules or files to perform that function. You are prompted to insert the *Personal Communications* diskette into drive A. An error message is displayed if you select **No**.

---

**PCSSLAN010 IBM LAN Adapter and Protocol Support (LAPS) has not been loaded.**

**Explanation:** You attempted to connect the Personal Communications workstation window to your application through either LAN via IEEE 802.2 connection or 3174 peer communication connection, but IBM LAN Adapter and Protocol Support (LAPS) was not installed.

**User Response:** Install IBM LAN Adapter and Protocol Support (LAPS).

**PCSSLAN011** **The correct adapter has not been installed.**

**Explanation:** You attempted to connect the Personal Communications workstation window to your application through either LAN via IEEE 802.2 connection or 3174 peer communication connection, but the network adapter was not installed on your personal computer.

**User Response:** Correct the **Adapter Number** in the IEEE 802.2 window if it is not valid. Or exit OS/2 and make sure that the proper network adapter is installed on your personal computer. Restart OS/2 and try the operation again. If the problem persists, ask your system administrator for assistance.

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**PCSSLAN012** **Number of Link Stations on this Local SAP is not sufficient. Close all 802.2 sessions, increase Link-Station Count in 802.2 setting then restart sessions.**

**Explanation:** You attempted to connect the Personal Communications workstation window to your application through either LAN via IEEE 802.2 connection or 3174 peer communication connection, but enough link stations were not available on the local SAP. This message appears, for example, when you specify different destination addresses on the same local SAP.

The number of link stations on the SAP is determined by the application or device driver that opens the SAP. It could be the Personal Communications workstation program, another application, or OS/2 device driver.

**User Response:** Disconnect all workstation windows currently connected to your application through either LAN via IEEE 802.2 connection or 3174 peer communication, increase the number of link stations in the **Link Station Count** entry field in the IEEE 802.2 advanced options window, and then try the operation again.

If the problem persists, it could be another application or the device driver that opens the SAP. Ask your system administrator for assistance.

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**PCSSLAN020** **Destination Address is invalid. Only values from 000000000000 to 7FFFFFFFFFFF are allowed.**

**Explanation:** You selected **OK** in the IEEE 802.2 window, but the value in the **Destination Address** entry field was not valid.

**User Response:** Correct the value in the **Destination Address** entry field as instructed in the message, and try the operation again.

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**PCSTBAR001** **File is not a tool bar file, or is corrupted.**

**Explanation:** The selected file is not recognized as a tool bar file. This is because the file was not created with the tool bar **Save** option, or the file contents have been corrupted.

**User Response:** Verify the file name and try again. If the file contents have been corrupted, delete the file and save the tool bar again using the tool bar **Save** option.

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**PCSTDLC001** **TDLC Configuration data is saved. You must reboot OS/2 so that the changes you made can take effect.**

**Explanation:** The configuration information for the adapter is saved.

**User Response:** Restart OS/2.

**PCSTDLC002** **Since the twinaxial station address is already used by another session, this session cannot be opened. Please try again after closing another session.**

**Explanation:** You attempted to connect a workstation window application by the twinaxial station address. But it failed, because the address was used by another session configured for other attachments.

**User Response:** Close another session using the same address, and then try to open the session again.

**PCSTDLC003** **TDLC Adapter open failed.**

**Explanation:** An error occurred when opening the twinaxial adapter.

**User Response:** Check that the twinaxial adapter is installed correctly. Restart the system.

**PCSTD012** **System environment is not correct. Please check your environment.**

**Explanation:** The basic input/output system (BIOS) returned an error during 5250 adapter card initialization.

**User Response:** Make sure that the personal computer on which this error occurred is supported by Personal Communications. If so, make sure that you do not specify the same address for another adapter card.

**PCSTD014** **Twinaxial adapter card RAM Error. Please check Twinaxial card.**

**Explanation:** The 5250 adapter card was found to have a problem.

**User Response:** Install the 5250 adapter card again, and test it as specified in the 5250 adapter installation procedures.

**PCSTD015** **PCSTDBOT.LEX is not found.**

**Explanation:** **PCSTDBOT.LEX** could not be found in the directory where Personal Communications is installed.

**User Response:** Make sure that **PCSDBOT.LEX** is in the directory where Personal Communications is installed. If you have accidentally erased it, install Personal Communications again.

**PCSTD016** **PCSTDOCM.LEX is not found.**

**Explanation:** **PCSTDOCM.LEX** could not be found in the directory where Personal Communications is installed.

**User Response:** Make sure that **PCSDOCM.LEX** is in the directory where Personal Communications is installed. If you have accidentally erased it, install Personal Communications again.

**PCSTD017** **Error occurs while loading 5250 adapter micro code.**

**Explanation:** An error occurred while loading the adapter microcode for the 5250 adapter card. This error can occur if the adapter card is defective or an address used by another device driver duplicates that used by the 5250 adapter card.

**User Response:** Set a memory address for the 5250 adapter card that does not duplicate that of another card or device driver.

**PCSTD018** **Since another twinaxial adapter handler is already loaded, twinaxial device driver for Personal Communications is not loaded.**

**Explanation:** Another twinaxial adapter handler, such as CM/2, and the twinaxial device driver for Personal Communications cannot be loaded together.

**User Response:** Remove the other twinaxial adapter handler from **CONFIG.SYS** and restart OS/2.

**PCSTLNET001** **SO32DLL.DLL could not be loaded.**

**Explanation:** An attempt to load **SO32DLL.DLL** failed. **SO32DLL.DLL** does not exist on the LIBPATH.

**User Response:** Make sure that **SO32DLL.DLL** exists on the LIBPATH. If not, install TCP/IP for OS/2.

**PCSUPM001** **The user ID is not specified.**

**Explanation:** A user ID must be specified as part of a user profile at automatic logon.

**User Response:** Specify a user ID.

**PCSUPM002** **The password is not specified.**

**Explanation:** A password must be specified as part of a user profile at automatic logon.

**User Response:** Specify a password.

**PCSUPM003** **Please enter your password again to confirm it.**

**Explanation:** To confirm that the password has been entered as desired, the system requests that it be entered a second time.

**User Response:** Enter the desired password again.

**PCSUPM004** **The new and confirmation passwords are not the same.**

**Explanation:** The first and second password entries are different.

**User Response:** Reenter the password, taking care to specify it exactly as desired.

**PCSUPM005** **No user profile is selected.**

**Explanation:** A user profile name must be specified.

**User Response:** Specify a user profile name or select a user profile name by using the Windows Browse function.

**PCSUPM006** **The selected file does not contain the user profile information.**

**Explanation:** The specified user profile does not contain the required user ID or password information.

**User Response:** Specify a user ID and password.

**PCSVPD001** **Invalid character in Device Type field. Valid input characters are: A-Z a-z 0-9 space.**

**Explanation:** You attempted to select **OK** in the Vital Product data window while incorrect characters were in the **Device Type** entry field. Characters a–z, A–Z, 0–9, and space are valid characters in this field.

**User Response:** Remove the incorrect characters from the **Device Type** entry field, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSVPD002** **Invalid character in Model field. Valid input characters are: A-Z a-z 0-9 space.**

**Explanation:** You attempted to select **OK** in the Vital Product data window while incorrect characters were in the **Model** entry field. Characters a–z, A–Z, 0–9, and space are valid characters in this field.

**User Response:** Remove the incorrect characters from the **Model** entry field, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSVPD003** **Invalid character in Machine Serial field. Valid input characters are: A-Z a-z 0-9 space.**

**Explanation:** You attempted to select **OK** in the Vital Product data window while incorrect characters were in the **Machine Serial** entry field. Characters a–z, A–Z, 0–9, and space are valid characters in this field.

**User Response:** Remove the incorrect characters from the **Machine Serial** entry field, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSVPD010** **Invalid character is in No.*xx* Data field. Valid input characters are: A-Z a-z 0-9 space + < = > % & * '' ' ( ) . , _ - / : ; ?**

**Explanation:** You attempted to select **OK** in the Extended Vital Product data window while incorrect characters were in the **Data** entry field. Characters a–z, A–Z, 0–9, space, + < = > % & * " ' ( ) . , _ – : ; ? are valid characters in these field.

**User Response:** Remove the incorrect characters from the **Data** entry field, and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSWKBD001** *file-name* **cannot be found.**

**Explanation:** The file *file-name* was not found.

**User Response:** Make sure that the correct path and file name are given.

**PCSWKBD002** *file-name* **is not a valid file name. Please make sure that you specified the correct file name.**

**Explanation:** The file *file-name* did not form a valid file name.

**User Response:** Make sure that the correct file name is given.

**PCSWKBD003** *file-name* **is not a valid filename; wild-card characters are not supported.**

**Explanation:** A wildcard character was found in the file name.

**User Response:** Remove the wildcard character from the file name.

**PCSWKBD004** **Path:** *path-name* **does not exist. Please verify that you specified the correct path.**

**Explanation:** The path *path-name* did not exist.

**User Response:** Make sure that the correct path name is given.

**PCSWKBD100** **Macro does not exist. Please select a function.**

**Explanation:** You attempted to select **OK** in the Keyboard/Macro window after selecting a no-macro in the Macro combination box. (You did not create the macro, so nothing was in the Macro combination box.)

**User Response:** Select a function from the Function combination box, and try the operation again.

**PCSWKBD200** **Please specify a keyboard-file name.**

**Explanation:** You attempted to select **OK** in the Keyboard Setup window after selecting **User defined** keyboard, but the keyboard file name was not specified.

**User Response:** Type a file name of the keyboard file in the **Keyboard File Name** entry field, and try the operation again.

**PCSWKBD201** **Please select a keyboard layout.**

**Explanation:** You attempted to select **OK** in the Keyboard Setup window without selecting a keyboard language from the Keyboard Layout combination box.

**User Response:** Select a keyboard language from the Keyboard Layout combination box, and try the operation again.

**PCSWKBD300** **Please specify a popup-keypad-file name.**

**Explanation:** You attempted to select **OK** in the Popup Keypad Setup window after selecting **User defined** pop-up keypad, but the **Popup Keypad File Name** was not specified.

**User Response:** Type a file name of the pop-up keypad file in the **Popup Keypad File Name** entry field, and try the operation again.

**PCSWKBD400** **Please specify a mouse-file name.**

**Explanation:** You attempted to select **OK** in the Mouse Setup window after selecting **User defined** mouse, but the **Mouse File Name** was not specified.

**User Response:** Type a file name of the keyboard file in the **Mouse File Name** entry field, and try the operation again.

**PCSWKBD500** **Macro does not exist.**

**Explanation:** You attempted to select **OK** in the Play Macro window, but there was no macro file to play.

**User Response:** Select **Cancel** to close the Play Macro window.

**PCSWS001** **Extremely low on memory. Close one or more OS/2 applications and start again.**

**Explanation:** Your OS/2 system does not have enough available memory to start the Personal Communications workstation program.

**User Response:** Close one or more OS/2 applications and start the Personal Communications workstation program again.

**PCSWS010** **WorkStation profile:** *file-name* **cannot be found. Do you want to select another?**

**Explanation:** The profile *file-name* defining the characteristics of the Personal Communications workstation window was not found. A possible reason is that the path does not exist, the path is not correct, or the file name is not correct.

**User Response:** Select **Yes** to select another profile and continue the operation. The Open Workstation Profile window will appear and allow you to select another profile. Select **No** to quit the operation.

**PCSWS011** **The file:** *file-name* **is not a Personal Communications WorkStation Profile.**

**Explanation:** The file *file-name* does not have a valid format as a profile for the Personal Communications workstation window. This message might appear if you have manually modified the workstation profile.

**User Response:** Make sure that the correct file name is given, and if it is, re-create the Personal Communications workstation profile and try the operation again. If the problem persists, install PC/3270 again.

**PCSWS020** **You have asked to close this session. It may be a new session or you may have changed one or more of its settings; do you want to save the current definitions?**

**Explanation:** You attempted to exit the Personal Communications workstation window without saving the settings changed since the last time you selected **New** in the File pull-down menu, opened the profile, or saved the settings into the profile.

**User Response:** To exit after saving the changes, select **Yes**. To exit without saving the changes, select **No**. To cancel without exiting, select **Cancel**; the Personal Communications workstation window remains open.

**PCSWS021** **Because you have changed the profile for this session, communication will be terminated if you proceed. Are you sure?**

**Explanation:** You attempted to change the profile of the Personal Communications workstation window without disconnecting the communication.

**User Response:** Select **OK** to continue the operation. The communication is automatically disconnected before the settings are loaded from the new profile and reconnected if **AutoConnect** is selected in the new profile.

Select **Cancel** to quit the operation. The settings of the Personal Communications workstation window remains unchanged.

**PCSWS022** **Do you want to add an icon for this session to the desktop?**

**Explanation:** You created a new profile for the Personal Communications workstation.

**User Response:** Select **Yes** to add the icon of the Personal Communications workstation program with the current settings. The Add Workstation Program-to-Program Group window prompts you to specify the folder name to which the icon is added. To not add the icon of the Personal Communications workstation program with the current settings, select **No**.

**PCSWS023** **To start this session with the modified definitions, enter '***(drive:path)***PCSWS** *(drive:path)file-name***' from the OS/2 command prompt.**

**Explanation:** You did not add the icon of the Personal Communications workstation program when you created the new profile.

**User Response:** Follow the instruction in the message the next time you start the Personal Communications workstation program.

**PCSWS024** **To start the WorkStation (session) that you have just saved, choose the '***icon-name***' icon in the '***folder-name***' folder.**

**Explanation:** You added the icon of the Personal Communications workstation program when you created the new profile.

**User Response:** Follow the instruction in the message the next time you start the Personal Communications workstation program.

**PCSWS025** **An icon was not added to the desktop.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to add the icon of the Personal Communications workstation program to the desktop.

**User Response:** Try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSWS026** **Error saving the WorkStation profile:** *file-name***.**

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to write the Personal Communications workstation profile *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSXFER001** **Insufficient OS/2 system memory available. Close one or more unnecessary OS/2 application program, and try again.**

**Explanation:** Your OS/2 system does not have enough available memory to transfer the files you selected.

**User Response:** If you were sending or receiving more than one file, try sending or receiving one file at a time. If the problem persists, close one or more OS/2 applications and try again. If the problem persists, ask your system administrator for assistance.

**PCSXFER010** **PC file:** *file-name* **cannot be found in the path specified.**

**Explanation:** The file *file-name* was not found.

**User Response:** Make sure that the correct path and file name are given.

**PCSXFER011** **Error reading file:** *file-name* **from the personal computer disk.**

**Explanation:** The file might have write-only access, or the disk or the diskette might be damaged. Or you might have specified an incorrect subdirectory or file name.

**User Response:** Make sure that the correct path name and file name are given. If they are correct, make sure that the file can be read by checking that the file is not a write-only file. If the problem persists, ask your system administrator for assistance.

**PCSXFER012** **Error creating file:** *file-name* **on the personal computer disk.**

**Explanation:** The disk or diskette was either damaged, full, or unformatted. Or you might have specified an incorrect subdirectory or file name.

**User Response:** Make sure that the correct path name and file name are given. If they are correct, make sure that the file can be written by checking that the diskette is not write-protected, and ensure that there is adequate space available. If the problem persists, ask your system administrator for assistance.

**PCSXFER013** **Error writing file:** *file-name* **to the personal computer disk.**

**Explanation:** The disk or diskette was either damaged, full, or unformatted. Or you might have specified an incorrect subdirectory or file name.

**User Response:** Make sure that the correct path name and file name are given. If they are correct, make sure that the file can be written by checking that the diskette is not write-protected or that the file is not a read-only file. Also ensure that there is adequate space available. If the problem persists, ask your system administrator for assistance.

**PCSXFER014** **Error writing file:** *file-name* **to the personal computer disk because the disk is full.**

**Explanation:** The disk or diskette is full.

**User Response:** Erase unnecessary files from the target disk and try the operation again. If the problem persists, ask your system administrator for assistance.

**PCSXFER015** **PC file:** *file-name* **which was to be appended to, could not be found in the path specified. It has been created as a new file.**

**Explanation:** There was no *file-name* file to append.

**User Response:** Make sure the correct path and file name are given.

**PCSXFER020** **Error opening send/receive-list file:** *file-name*.

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to open the send/receive file: *file-name*.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSXFER030** **Cannot send zero-length file:** *file-name*.

**Explanation:** You attempted to send an empty file *file-name* to the host.

**User Response:** Erase the file.

**PCSXFER040** **Lost contact with the host.**

**Explanation:** The host was inactive, or the communication link with the host was lost. Or the transfer was executed when a cursor was not in the command line.

**User Response:** If you have received an error code in the operator information area, copy it down and refer to the OIA messages in the online help. Or make sure that a cursor is at the command line, and then try to request the transfer again.

**PCSXFER041** **Host has not responded within timeout period. You may have to disconnect from IND$FILE by pressing the PF2 key once or twice.**

**Explanation:** IND$FILE is the host application program that manages file transfers. The Personal Communications workstation window canceled the file transfer, because IND$FILE did not respond within the timeout period. The workstation window screen might look incorrect because of the IND$FILE process.

**User Response:** Exit IND$FILE by pressing F2 once or twice and restart the file transfer. Make sure that the ready prompt appears on the screen before transferring the files.

If the problem persists, you might need to increase the timeout value in the Miscellaneous Settings-Session X window. The default timeout value is 30 seconds.

**PCSXFER042** **Transfer has been canceled. You may have to disconnect from IND$FILE by pressing the PF2 key once or twice.**

**Explanation:** IND$FILE is the host application program that manages file transfers. You canceled the file transfer, and the workstation window screen might look incorrect because of the IND$FILE process.

**User Response:** Exit IND$FILE by pressing F2 once or twice to terminate IND$FILE completely and restore the screen.

**PCSXFER045** **File transfer has been canceled because the host is busy.**

**Explanation:** The host session is busy. The file transfer command has been canceled.

**User Response:** The specified host session is performing another file transfer operation. Try the operation again, when the specified host session is ready.

**PCSXFER046** **The specified terminal session is not available.**

**Explanation:** The specified terminal session is not started or is disconnected. The file transfer command cannot start.

**User Response:** Try the operation again, after the specified terminal session is ready.

**PCSXFER050** **The combination of host code page and PC code page is not valid. The default PC code page will be used.**

**Explanation:** You attempted to start file transfer, but the combination of the host code page and personal computer code page was not valid.

**User Response:** Reconnect the communication after selecting the proper host code page from the Host Code Page combination box in the Customize Communication-3270 or 5250 Host window. Then select the proper personal computer code page from the PC code page combination box in the Miscellaneous Settings-Session X window and try the operation again.

If the problem persists, ask your system administrator for assistance.

**PCSXFER060** **Transfer had finished successfully before your pause request was accepted.**

**Explanation:** You selected **Pause** in the Send Files Status or the Receive Files status window while transferring multiple files. But the file transfer completed successfully before your request was accepted.

**User Response:** None.

**PCSXFER070** *file-name* **is not a valid file-name. Please make sure that you specified the correct file-name.**

**Explanation:** The file *file-name* does not form a valid file name.

**User Response:** Make sure you have specified the correct file name.

**PCSXFER071** *file-name* **cannot be found.**

**Explanation:** The file *file-name* could not be found.

**User Response:** Make sure you have specified the correct path and file name.

**PCSXFER072** **Path:** *path-name* **does not exist. Please make sure that you specified the correct path.**

**Explanation:** The path *path-name* does not exist.

**User Response:** Make sure that correct path name is given.

**PCSXFER073** **Please specify a translation-file name.**

**Explanation:** A translation file name has not been specified in the **File Name** field of the Translation-Table Setup window.

**User Response:** Select **OK** and specify a translation file name.

**PCSXLT001** **The file:** *file-name* **is not a Personal Communications code-page-translation file.**

**Explanation:** The file *file-name* was not a Personal Communications code-page translation file.

**User Response:** Make sure that the correct file name is given, and then try the operation again. If the problem persists, install Personal Communications again.

**PCSXLT002** **A character outside the revisable range was found and ignored.**

**Explanation:** A character outside the revisable range was found and ignored.

**User Response:** Re-create the Personal Communications code-page translation file and try the operation again. If the problem persists, install Personal Communications again.

**PCSXLT350** **Customize Translation Table window is already open.**

**Explanation:** You attempted to open the Translation Table window while it was already open.

**User Response:** Close the Translation Table window.

**PCSXLT351** *file-name* **has been changed. Save the changes?**

**Explanation:** You attempted to exit the Translation Table window, but the translation table has been changed.

**User Response:** Select **OK** to save the changes, or select **NO** to cancel the changes.

**PCSXLT352** **Error writing translation file:** *file-name*

**Explanation:** OS/2 returned an error condition when Personal Communications attempted to save the translation table.

**User Response:** Determine the cause of the error condition and correct it, or ask your system administrator for assistance.

**PCSXLT353** *hex-code1* **has been translated from** *hex-code2***. Replace** *hex-code2* **by undefined code?**

**Explanation:** You attempted to specify the code: *hex-code1*, which has been already translated from *hex-code2*. Therefore, change the code *hex-code2* to the undefined code.

**User Response:** Select **OK** to replace *hex-code2* to the undefined code. Select **NO** to cancel the change.

**PCSXLT354** *file-name* **is not a valid file-name. Please make sure that you specified the correct file-name.**

**Explanation:** The extension of the file: *file-name* is not XLT.

**User Response:** Select **OK** and specify the correct file name.

**PCSXLT355** *file-name* **cannot be found.**

**Explanation:** The file: *file-name* cannot be found.

**User Response:** Select **OK** and specify the correct file name.

**PCSXLT356** **Path:** *path-name* **does not exist. Please make sure that you specified the correct path.**

**Explanation:** The path: *path-name* does not exist.

**User Response:** Select **OK** and specify the correct path.

**PCSXLT357** **Please specify a translation-file name.**

**Explanation:** A translation file name has not been specified in the **File Name** field of the Translation-Table Setup window.

**User Response:** Select **OK** and specify a translation file name.

## File Transfer Messages

TRANS03 and TRANS04 are not error messages and are usually not displayed. When file transfer terminates with no messages having been displayed, it indicates that file transfer was successful. More than one file can be transferred by a single file-transfer request. If the operation is normal, the system does not display messages during the transfer, This avoids interrupting the transfer operation.

**TRANS03** **File transfer complete.**

**Explanation:** The file transfer operation was completed normally. There is now a file either in the host or in the personal computer with the name and characteristics you specified in the SEND or RECEIVE command.

**User Response:** None.

**TRANS04** **File transfer complete, with records segmented.**

**Explanation:** The file transfer operation was completed. But there were some records that were longer than the logical record length. These records have been segmented.

**User Response:** Increase the record length, and try the file transfer again.

Messages TRANS12 – TRANS99 are error messages. File transfer is abnormally ended. Error information might also be output from the host system or from the AS/400 system. You can view this information using the DSPJOBLOGT command.

**TRANS12** **Write error, insufficient PC disk space, or defective disk: File transfer aborted.**

**Explanation:** None.

**User Response:** Ensure that there is sufficient free space available on the personal computer. Then request the transfer again. If the same message is displayed, check whether the personal computer disk is defective, as described in the manual for your personal computer.

**TRANS13** **Error writing file to host: File transfer canceled.**

**Explanation:** The host program has detected an error in the file data being sent to it by the SEND command.

**User Response:** Try the file transfer again. If the message recurs, ask your system administrator for assistance.

**TRANS14** **Error reading file from host: File transfer canceled.**

**Explanation:** The host program has detected an error in the file data during a receive operation.

**User Response:** Try the file transfer again. If the message recurs, ask your system administrator for assistance.

**TRANS15** **Required host storage unavailable: File transfer canceled.**

**Explanation:** You need 30 KB of main storage for file transfer in addition to that required by your host. This should not be confused with disk space.

**User Response:** Ask your local host system support representative for assistance.

---

**TRANS16** **Incorrect request code: File transfer canceled.**

**Explanation:** An incorrect parameter was sent by the SEND or RECEIVE application.

**User Response:** Verify that the current version of SEND, RECEIVE, and IND$FILE MODULE are correctly installed. If they are, follow local procedures and have available:

The sequence of events, including keys pressed and in what order
The system level
The message number

---

**TRANS17** **Missing or Incorrect TSO data set name: File transfer canceled.**

**Explanation:** The TSO data set name was is missing or not a sequential or partitioned data set.

**User Response:** Correct the TSO data set name in the command, and try the operation again.

---

**TRANS17** **Missing or Incorrect CMS file name: File transfer canceled.**

**Explanation:** The CMS file name was missing or incorrectly specified.

**User Response:** Correct the CMS file name in the command, and try the operation again.

---

**TRANS17** **Missing or incorrect library/file/member name**
**File Transfer Canceled.**

**Explanation:** To execute a RECEIVE command, the specified library or file or member must exist. When a SEND command is executed, a file or member is automatically created if it does not already exist. The library, however, must already exist.

**User Response:** Specify a valid library or file or member. Then request file transfer again.

---

**TRANS18** **Incorrect option specified: File transfer canceled.**

**Explanation:** You specified an option that is not acceptable.

**User Response:** Correct the command to specify an acceptable option, and try the operation again.

---

**TRANS19** **Error reading or writing to host disk: File transfer canceled.**

**Explanation:** There was not enough space available for data on the host.

**User Response:** Look at the host session message for indications and correct the problem.

**TRANS28** **Invalid option *xxxxxxxx*: File transfer canceled.**

**Explanation:** *xxxxxxxx* was not recognized, was specified as a positional keyword, or has an associated value that is incorrect.

**User Response:** Correct the option in the command, and try the operation again.

**TRANS29** **Invalid option *xxxxxxxx* with RECEIVE: File transfer canceled.**

**Explanation:** *xxxxxxxx* is not valid with RECEIVE, but it can be used with SEND.

**User Response:** Remove the option from the command, and try the operation again.

**TRANS30** **Invalid option *xxxxxxxx* with APPEND: File transfer canceled.**

**Explanation:** *xxxxxxxx* is not valid with the APPEND command.

**User Response:** Remove the option from the command, and try the operation again.

**TRANS31** **Invalid option *xxxxxxxx* without SPACE: File transfer canceled.**

**Explanation:** *xxxxxxxx* can be used only if space is also specified.

**User Response:** Remove the option from the command, and try the operation again.

**TRANS32** **Invalid options *xxxxxxxx* with PDS: File transfer canceled.**

**Explanation:** *xxxxxxxx* is not valid with a host-partitioned data set.

**User Response:** Remove the option from the command, and try the operation again.

**TRANS33** **Only one of TRACKS, CYLINDERS, AVBLOCK allowed: File transfer canceled.**

**Explanation:** Space can be specified in units of TRACKS, CYLINDERS, or AVBLOCK. Only one can be specified.

**User Response:** Remove the unwanted option from the command, and try the operation again.

**TRANS34** **CMS file not found: File transfer canceled.**

**Explanation:** An existing CMS file must be specified for RECEIVE.

**User Response:** Correct the CMS file specification in the command, and try the operation again.

**TRANS35** **CMS disk is Read-Only: File transfer canceled.**

**Explanation:** The CMS file mode specified for SEND must allow write access.

**User Response:** Correct the CMS file specification in the command, and try the operation again.

**TRANS36** **CMS disk is not accessed: File transfer canceled.**

**Explanation:** The CMS file mode was not in the CMS disk search order.

**User Response:** Access the required disk in CMS or correct the CMS file specification in the command. Try the command again.

**TRANS37** **CMS disk is full: File transfer canceled.**

**Explanation:** The CMS disk was full, the maximum number of files (3400) on the minidisk has been reached, or the maximum number of data blocks per file (16,060) has been reached.

**User Response:** Use another disk with enough space, or remove unwanted files from the specified disk. If the personal computer file is very large (over 1 MB), consider dividing it into several pieces. When one of these actions has been taken, try the command again.

**TRANS51** **File type option is not proper.**
**File Transfer Canceled.**

**Explanation:** Only physical files and source physical files can be sent or received to and from the personal computer by using the PCT/400 file transfer facility. The issued command is identified as a source physical file if specified with the SCR option, or as a physical file if specified without the SCR option. An option specified in the command, however, is not compatible with the type of the existing file.

**User Response:** Check the type of the file. Then request transfer again.

**TRANS53** **Library not found.**
**File Transfer Canceled.**

**Explanation:** None.

**User Response:** Check the library name. Then request file transfer again.

**TRANS54** **Member not found.**
**File Transfer Canceled.**

**Explanation:** None.

**User Response:** Check the member name. Then request file transfer again.

**TRANS55** **Can not access to the file.**
**File Transfer Canceled.**

**Explanation:** The target file cannot be opened due to a problem with the AS/400 system.

**User Response:** Execute the AS/400 command DSPJOBLOG to view detailed error information. Remove the cause of the error. Then request file transfer again.

**TRANS56** **No authorization to library.**
**File Transfer Canceled.**

**Explanation:** None.

**User Response:** Obtain the required authority from the system administrator or the library owner. Then request file transfer again.

**TRANS57** **No authorization to file.**
**File Transfer Canceled.**

**Explanation:** None.

**User Response:** Obtain the required authority from the system administrator or the file owner. Then request file transfer again.

**TRANS58** **Can not create file/member.**
**File Transfer Canceled.**

**Explanation:** A file or member cannot be created when using the SEND command. The reason could be one of the following things:

1. "Maximum Member Count" is included as an AS/400 file attribute. The member count has already reached the maximum, thus a new member cannot be created.
2. An incorrect AS/400 file or member name has been specified. For example, a name beginning with a number cannot be specified as an AS/400 file name.
3. Two requests were simultaneously issued for a single file or member.

You can determine the cause by viewing the AS/400 job log. To view the detailed error information, execute the DSPJOBLOG command.

**User Response:**

To include two or more members in one file, create a file for which MAXMBRS( NOMAX) is specified.

Check the file name or member name. Then request file transfer again.

Wait a short while. Then request file transfer again.

**TRANS60** **Error on AS/400 program - APVAFILE**
**File Transfer Canceled.**

**Explanation:** None.

**User Response:** Contact your system administrator.

**TRANS99** **Host program error.** *xx xxxxxxxx*: **File transfer canceled.**

**Explanation:** This message indicates a program error.

**User Response:** Follow your local procedures and have available:

The sequence of events
The variable data, *xx xxxxxxxx*, from this message
The system level

Other error messages might also be displayed on the AS/400 screen. Determine and remove the cause of these errors by checking the job log. Typical error messages are as follows.

**Command APVAFILE not found in Library *LIBL.**

**Explanation:** For you to use the file transfer facility, the system administrator must install PCT/400, and set up the AS/400 system as its destination.

**User Response:** Contact your system administrator and confirm that Personal Communications Tool/400 has been installed and set up.

---

**Cursor is positioned to a protected area of the screen.**
**Only a number from 0 to 9 can be specified.**
**Unable to use the specified option number. and others.**

**Explanation:** When you run the file transfer facility, the cursor must be on the command line (a field available for input and execution of a command) of the AS/400 screen.

**User Response:** Ensure that the cursor is on the command line. Then request file transfer again.

The PCSXFERxx error messages might also be displayed during file transfer. These messages are listed under “Personal Communications Messages” on page 9-2.

# Personal Communications/3270

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# Chapter 10. Building a Printer Definition Table (PDT) for PC/3270

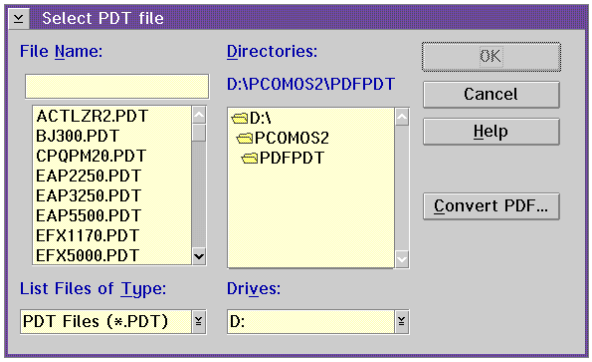
This chapter explains how to create and change the printer definition table (PDT) used for PC/3270.

The PDT is created by converting the printer definition file (PDF), which defines how characters and control codes are sent to the printer and how printer output is formatted. You can create a PDF by using a text editor that produces an ASCII file or by modifying one of the PDFs provided by PC/3270. All PDFs have the extension **.PDF**.

## Customizing the PDT

To customize the PDT:

1. Select **File** from the menu bar of the workstation window.
2. Select **Printer Setup** from the File pull-down menu. The Printer Setup window appears.
3. Select the **Use PDT file** check box and click on **Select PDT**. The Select PDT File window appears:




4. Select **Convert PDF**.
5. Select the PDF to be converted from the list in the Convert PDF to PDT window; then select **Convert**. After the file has been converted, control is returned to the Convert PDF to PDT window.
6. Select **Close**. Control is returned to the Select PDT File window, and the converted PDT file is listed.
7. Select the PDT file; then select **OK**.
8. Select **OK** on the Printer Setup window.

   After printer setup is complete, the Printer Setup window is closed.

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## PDF Format

A PDF consists of a ***macro definitions section*** and a ***definitions section***.

In the ***macro definitions section***, you can assign a name (macro name) to a sequence of hexadecimal numbers, decimal numbers, or ASCII characters. This name can be referred to from within the definitions section, which follows the macro definitions section. The macro definitions section must start with a BEGIN_MACROS statement and end with an END_MACROS statement. The left part of the statement is the macro name assigned, and the right part of the statement is the value referred to by that macro name.

In the ***definitions section***, the left side of each statement contains the name of a character or control command (field name). The right side of each statement contains hexadecimal numbers, decimal numbers, ASCII characters, or predefined macro names that define the character or the control codes sent to a printer.

Different printer manuals define printer control strings in different ways. Some printer manuals describe control sequences in hexadecimal, whereas others use such symbols as 'esc J1 K'. You can use either format and define macros to make the file more readable. In the macro definitions section and the definitions section of a PDF, the following things can be specified to the right of each statement:

A single character, which is treated as an ASCII value
Two digits, which are treated as a hexadecimal number
Three or more digits, which are treated as a decimal number
A predefined macro, which is expanded by the printer table compiler

If you leave the right side of a statement blank or if you delete it, the character or the control code is interpreted as a null string. If a character or a control code is defined more than once in a file, the last definition is used. If an error is detected in a statement, the printer table compiler ignores the statement and proceeds to the next statement.

After you have created your PDF, convert it to a PDT by using the printer table compiler. The resulting file has a **.PDT** extension.

The /* symbol indicates the beginning of a comment. The */ symbol indicates the end of a comment. A comment can be placed anywhere within a PDF. It is ignored by the printer table compiler.

A macro definition cannot contain another macro definition.

There is a sample file, **IBM4202.PDF**, on your PC/3270 diskettes. You can copy this file and modify the copy to customize your own PDT.

Standard PDT file names are of the form **IBM**nnnnn**.PDT**. Tables containing code page fonts are of the form **PRN**nnnnn**.PDT**, where nnnnn is a machine type.

## Example PDF

The following example is an annotated version of a printer definition file for the IBM 4202 Proprinter. (This is an example only; the actual file might differ.)

Example 4202 Proprinter Definition

```
/                                                                  /
/                                                                                /
/       PRINTER SESSION DEFINITION FILE FOR: Proprinter XL 42 2-1                /
/                                                                                /
/                                                                  /
/                                                                  /
/                                  Macro  Definitions                            /
/ Define values here that will be used commonly throughout your                  /
/ definitions.    Then use the left hand side of the equate as you               /
/ define your characters and control strings.    The printer compiler            /
/ will substitute the right hand side of the equate for each                     /
/ occurrence of the left hand side throughout the file.                          /
/                                                                                /
/ Macro names must be at least three characters long and may not                 /
/ begin with a number.                                                           /
/                                                                                /
/ Format                                                                         /
/ A Macro Name is associated with a value or string of values by the             /
/ EQU statement.    The right hand side of an EQU statement must be a            /
/ string of zero or more two digit hexadecimal numbers.    If a macro            /
/ definition is more than one line long, you may extend it to the                /
/ next line by ending the first line with a comma.    In this manner            /
/ you may define a macro which is many lines long by terminating each            /
/ line except the last with a comma.    No macro names are allowed on            /
/ right hand side.                                                               /
/                                                                  /
BEGIN_MACROS
/ The following values are standard for most printers.    Check your            /
/ printer manual to verify that these are correct for your printer               /
NUL EQU                  / Nul character                                         /
BEL EQU  7               / Beeper                                                  /
BAK EQU  8               / Back Space                                              /
TAB EQU  9               / Tab                                                      /
LFF EQU  A               / Line Feed                                               /
VTB EQU  B               / Vertical Tab                                            /
FFF EQU  C               / Form Feed                                               /
CRR EQU  D               / Carriage Return                                         /
P 5 EQU 1B 57  1         / 5 Pitch-Characters/inch                                 /
                         / Same as Double Wide                                     /
SEL EQU 11               / Select Printer                                          /
P1  EQU 12               / 1  Pitch-Characters/inch                                /
CDW EQU 1B 57            / Cancel Double Wide contin.                              /
CDL EQU 14               / Cancel Double Wide line                                 /
ESC EQU 1B               / Escape                                                   /
CAN EQU 18               / Cancel Data                                             /
SPA EQU 2                / Space                                                   /
P17 EQU 12  F            / 17.1 Pitch-Characters/inch                              /
CS2 EQU 1B 36            / Select Character Set 2                                  /
CS1 EQU 1B 37            / Select Character Set 1                                  /
P12 EQU 1B 3A            / 12 Pitch-characters/inch                                /
SVT EQU 1B 42            / Set Vertical Tabs                                       /
SFL EQU 1B 43            / Set Form Length                                         /
SHT EQU 1B 44            / Set Horizontal Tabs                                     /
SDS EQU 1B 47            / Start Double Strike                                     /
CDS EQU 1B 48            / Cancel Double Strike                                    /
SSP EQU 1B 4E            / Set skip perforation                                    /
CSP EQU 1B 4F            / Cancel skip perforation                                 /
CAT EQU 1B 52            / Cancel all tabs Clears VT                               /
                         / and sets HT every 8 position                            /
CSS EQU 1B 54            / Cancel Subscript or Superscript                         /
SSO EQU 1B 53            / Set Superscript over                                    /
SSU EQU 1B 53  1         / Set Subscript under                                     /
SUL EQU 1B 2D  1         / Start Underline                                         /
CUL EQU 1B 2D            / Cancel Underline                                        /
```

```
LL6 EQU 1B 41  C 1B 32 /  Set line length 6 lines/inch                    /
LL8 EQU 1B 41  9 1B 32 /  Set line length 8 lines/inch                    /
LL  EQU 1B 41  7 1B 32 /  Set line length 1  lines/inch                   /
                          /  actually 7/72 inch                                 /
SDQ EQU 1B 49             /  Select Draft Printing Quality                /
SLQ EQU 1B 49  2          /  Select Letter Printing Quality               /
END_MACROS
/                                 Session  Parameters                             /
/  These parameters determine the way in which output will be             /
/  formatted for your printer.                                                    /
/  Numeric Parameters                                                             /
/  These parameters should be defined with a two digit hex number         /
/  or a three digit decimal number.    The range of the number is zero    /
/  to 255 (decimal).                                                              /
MAXIMUM_PAGE_LENGTH= 66                   /  Printed lines per page             /
MAXIMUM_PRINT_POSITION=132                /  Printed characters per line      /
INTERV_REQ_TIMER=  1
RESELECT_TIME_EXCPT_52 4=  1
INTERV_TIMER_ON_PE_ONLY?=NO
/  YES/NO Parameters                                                           /
/  These parameters should be defined with either "YES" or "NO" on the /
/  right hand side of the '='                                                     /
COMPRESS_LINE_SPACING?=NO                 /  Should blank or null lines       /
                                          /  be printed?                        /
FORM_FEED_ANY_POSITION?=YES               /  Should the form feed be            /
                                          /  valid in any position?             /
OVERRIDE_FORMATTED_PRINT?=YES             /  Should nulls be printed as       /
                                          /  blanks?                            /
AUTO_NEWLINE_AT_MAX_POS?=NO
/                                 Control  Codes                                  /
/  These definitions tell the emulator what control strings to send to /
/  your printer to issue control commands.                                        /
/                                                                                 /
/  Format                                                                         /
/  The name of the control command should always be at the beginning      /
/  of a line followed by a '=' and then a definition string.              /
/  A Definition String is any combination of macro names, hexadecimal  /
/  numbers, and characters separated by blanks.    A macro must have      /
/  previously defined in the macro definitions section above. A          /
/  hexadecimal number must be two digits ( ,..,F) long. and a            /
/  character must be preceded and followed by a blank.    If a           /
/  definition string will not fit on a line, it may be continued         /
/  as many lines as you wish by ending each line except the last with  /
/  a comma;    ','.      You made add any comments you wish to by including /
/  them between a slash     and a  slash where slash is the symbol /.      /

/  START_JOB is the control string which will be sent to your printer  /
/  at the beginning of each print job.                                            /
START_JOB=SEL CDW CDL CUL CDS CS2
/  END_JOB is the string which will be sent to your printer at the end /
/  of each print job.                                                             /
END_JOB=CAT CDW CDL CUL CDS FFF
BACKSPACE=BAK
BEL=BEL
CARRIAGE_RETURN=CRR
NEW_LINE=CRR LFF
LINE_FEED=LFF
FORM_FEED=FFF
HORIZONTAL_TAB=TAB
VERTICAL_TAB=VTB
START_SUBSCRIPT=SSU
END_SUBSCRIPT=CSS
START_SUPERSCRIPT=SSO
END_SUPERSCRIPT=CSS
DUP=
FIELD_MARK=;
/  The following commands specify control codes for which most PC         /
/  printers require command strings which contain a variable value       /
/  or values somewhere in the middle of the string.                       /
/  Place the word "value(s)" in the position of your definition           /
/  string where the Personal Communications 327  should fill in           /
/  the hexadecimal value(s) indicated.                                            /
```

```
/ For example, on the IBM Proprinter, the SET_HORIZONTAL_TABS              /
/ definition is:                                                          /
/ SET_HORIZONTAL_TABS=ESC D values NUL                                    /
SET_HORIZONTAL_TABS=SHT values NUL     / "values" are the tab stops       /
                                       / in column numbers                /
SET_VERTICAL_TABS=SVT values NUL       / "values" are the tab stops       /
                                       / in line numbers                  /
SET_HORIZONTAL_MARGINS=
SET_PAGE_LENGTH=SFL value              / "value"=number of lines          /
SET_AUTO_PERFORATION_SKIP=SSP value
                                       / "value"=number of lines to       /
                                       / skip over the perforation        /
                                       / between pages.   Used to set     /
                                       / top and bottom margins.          /
SET_VARIABLE_LINE_DENSITY=ESC A value ESC 2
                                       / "value"=number of points.        /
                                       / A point is 1/72 of an inch.      /
SET_CHARACTER_SET=
/ SET_CHARACTER_SET=ESC I NULL   selects the normal font                  /
/ SET_CHARACTER_SET=ESC I  2    selects the NLQ (near letter quality)     /
/ SET_CHARACTER_SET=ESC I  4    selects the normal downloaded font        /
/ SET_CHARACTER_SET=ESC I  6    selects the NLQ downloaded font           /
/ SET_CHARACTER_SET=CS1           selects the Character set 1             /
/ SET_CHARACTER_SET=CS2           selects the Character set 2             /

/ These control codes set the printer lines per inch and characters     /
/ per inch to fixed amounts.                                            /
/ If your printer does not support setting the line density in points /
/ then you can enter control strings for the following commands.        /
/ When Personal Communications 327 gets a command from the host to     /
/ set the lines per    inch, it will round it to the closest line per   /
/ inch setting that you provide.   Note that if you provide a command  /
/ for the SET_VARIABLE_LINE_DENSITY command above that it will be      /
/ used and any control strings you provide for the set lines per inch /
/ commands below will not be used.                                      /

SET_6_LINES_PER_INCH=LL6
SET_8_LINES_PER_INCH=LL8
SET_1 _LINES_PER_INCH=LL               / 7/72 inch or 9/96 inch          /
SET_1 _CHARACTERS_PER_INCH=P1
SET_12_CHARACTERS_PER_INCH=P12
SET_15_CHARACTERS_PER_INCH=            / The proprinter does not         /
                                       / support 15 pitch except in      /
                                       / graphs mode                     /
SET_17_CHARACTERS_PER_INCH=P17         / Condensed mode                  /
START_DOUBLE_WIDTH_CHARACTERS=P 5
END_DOUBLE_WIDTH_CHARACTERS=CDW

/ These control codes are used to select the source drawer number      /
/ when your printer has the dual drawer sheet feed option.             /
SELECT_DRAWER1=
SELECT_DRAWER2=
SELECT_DRAWER3=
/ These control codes select the print mode (quality of print).        /
SELECT_DRAFT_QUALITY=SDQ
SELECT_LETTER_QUALITY=SLQ
SELECT_ENHANCED_QUALITY=
SELECT_SETUP_QUALITY=
/                        Color  Specifications                         /
START_COLOR_BLUE=
END_COLOR_BLUE=
START_COLOR_GREEN=
END_COLOR_GREEN=
START_COLOR_CYAN=
END_COLOR_CYAN=
START_COLOR_RED=
END_COLOR_RED=
START_COLOR_MAGENTA=
END_COLOR_MAGENTA=
START_COLOR_YELLOW=
END_COLOR_YELLOW=
START_COLOR_BLACK=
```

```
END_COLOR_BLACK=
START_COLOR_WHITE=
END_COLOR_WHITE=

/                    Highlight  Specifications                    /
/ These definitions will determine how things which are sent by the    /
/ host to be displayed or printed as underlined, reverse video, or      /
/ blinking will be highlighted on your printer.                          /

START_HIGHLIGHT_INTENSE=SDS              / This is double strike          /
END_HIGHLIGHT_INTENSE=CDS
START_HIGHLIGHT_UNDERLINE=SUL
END_HIGHLIGHT_UNDERLINE=CUL
START_HIGHLIGHT_REVERSE_VIDEO=
END_HIGHLIGHT_REVERSE_VIDEO=
START_HIGHLIGHT_BLINK=
END_HIGHLIGHT_BLINK=

/                    Character  Definitions                    /
/ The remainder of the definitions are for printable characters.        /
/ See your users guide for the actual character referred to by each    /
/ character name.                                                        /
/ Format                                                                 /
/ The format of a character definition is the same as for a control    /
/ code.                                                                  /

SPACE=SPA
EXCLAMATION_POINT=21
QUOTATION_MARKS=22
NUMBER_SIGN=23
DOLLAR_SIGN=24
PERCENT_SIGN=25
AMPERSAND=26
APOSTROPHE=27
LEFT_PARENTHESIS=28
RIGHT_PARENTHESIS=29
ASTERISK=2A
PLUS_SIGN=2B
COMMA=2C
HYPHEN=2D
PERIOD=2E
SLASH=2F
ZERO=
ONE=1
TWO=2
THREE=3
FOUR=4
FIVE=5
SIX=6
SEVEN=7
EIGHT=8
NINE=9
COLON=3A
SEMICOLON=3B
LESS_THAN_SIGN=3C
EQUAL_SIGN=3D
GREATER_THAN_SIGN=3E
QUESTION_MARK=3F
AT_SIGN=4
A_CAPITAL=A
B_CAPITAL=B
C_CAPITAL=C
D_CAPITAL=D
E_CAPITAL=E
F_CAPITAL=F
G_CAPITAL=G
H_CAPITAL=H
I_CAPITAL=I
J_CAPITAL=J
K_CAPITAL=K
L_CAPITAL=L
M_CAPITAL=M
```

```
N_CAPITAL=N
O_CAPITAL=O
P_CAPITAL=P
Q_CAPITAL=Q
R_CAPITAL=R
S_CAPITAL=S
T_CAPITAL=T
U_CAPITAL=U
V_CAPITAL=V
W_CAPITAL=W
X_CAPITAL=X
Y_CAPITAL=Y
Z_CAPITAL=Z
LEFT_BRACKET=5B
BACKSLASH=5C
RIGHT_BRACKET=5D
CIRCUMFLEX_ACCENT=5E
UNDERLINE=5F
GRAVE_ACCENT=6
A_SMALL=a
B_SMALL=b
C_SMALL=c
D_SMALL=d
E_SMALL=e
F_SMALL=f
G_SMALL=g
H_SMALL=h
I_SMALL=i
J_SMALL=j
K_SMALL=k
L_SMALL=l
M_SMALL=m
N_SMALL=n
O_SMALL=o
P_SMALL=p
Q_SMALL=q
R_SMALL=r
S_SMALL=s
T_SMALL=t
U_SMALL=u
V_SMALL=v
W_SMALL=w
X_SMALL=x
Y_SMALL=y
Z_SMALL=z
LEFT_BRACE=7B
VERTICAL_BAR=B3
RIGHT_BRACE=7D
TILDE_ACCENT=7E
C_CEDILLA_CAPITAL=8
U_DIAERESIS_SMALL=81
E_ACUTE_SMALL=82
A_CIRCUMFLEX_SMALL=83
A_DIAERESIS_SMALL=84
A_GRAVE_SMALL=85
A_OVERCIRCLE_SMALL=ESC 4C  8     6 6A AA AA 6A 1E  2
C_CEDILLA_SMALL=87
E_CIRCUMFLEX_SMALL=88
E_DIAERESIS_SMALL=89
E_GRAVE_SMALL=8A
I_DIAERESIS_SMALL=8B
I_CIRCUMFLEX_SMALL=8C
I_GRAVE_SMALL=8D
A_DIAERESIS_CAPITAL=8E
A_OVERCIRCLE_CAPITAL=8F
E_ACUTE_CAPITAL=9
AE_DIPTHONG_SMALL=91
AE_DIPTHONG_CAPITAL=92
O_CIRCUMFLEX_SMALL=93
O_DIAERESIS_SMALL=94
O_GRAVE_SMALL=95
U_CIRCUMFLEX_SMALL=96
```

```
U_GRAVE_SMALL=97
Y_DIAERESIS_SMALL=98
O_DIAERESIS_CAPITAL=99
U_DIAERESIS_CAPITAL=9A
/                                                    /
/ The following character is printed by printing an o    (6F) then        /
/ backspacing(BAK) and over printing with a slash(2F).                    /
/                                                    /
O_SLASH_SMALL=6F BAK 2F
POUND_SIGN=9C
O_SLASH_CAPITAL=4F BAK 2F
/                                                    /
/ The following escape sequence defines the character in all points  /
/ addressable mode (APA).    The ESC 4C starts the APA mode.    The          /
/  8    is the count low and count high and defines eight bytes of     /
/ APA data. The    44 28 1  28 44       are the eight bytes of data. /
/ A bit set to 1 prints the dot and a bit set to   does not print.     /
/ The most significant bit prints as the top dot.    The least               /
/ significant bit prints as the bottom dot.    The first byte is            /
/ printed on the left following the last character.    The next byte     /
/ is printed to the right one dot column to the right of the last       /
/ byte etc..    Refer to the Proprinter Guide to Operations for             /
/ more information.                                                                  /
/                                                    /
MULTIPLY_SIGN=ESC 4C  8      44 28 1  28 44
A_ACUTE_SMALL=A
I_ACUTE_SMALL=A1
O_ACUTE_SMALL=ESC 4C  8     C 12 12 52 92 12  C
U_ACUTE_SMALL=A3
N_TILDE_SMALL=A4
N_TILDE_CAPITAL=A5
ORDINAL_INDICATOR_FEMININE=A6
ORDINAL_INDICATOR_MASCULINE=A7
QUESTION_MARK_INVERTED=A8
REGISTERED_TRADEMARK_SYMBOL=ESC 4C  9    7E 81 BD A9 B9 A5 81 7E
LOGICAL_NOT=AA
ONE_HALF=AB
ONE_QUARTER=AC
EXCLAMATION_POINT_INVERTED=AD
LEFT_ANGLE_QUOTES=AE
RIGHT_ANGLE_QUOTES=AF
A_ACUTE_CAPITAL=ESC 4C  8     6  C 54 A4 14  C  6
A_CIRCUMFLEX_CAPITAL=ESC 4C  8     6 4C 94 A4 94 4C  6
A_GRAVE_CAPITAL=ESC 4C  8     6  C 14 A4 54 4C  6
COPYRIGHT_SYMBOL=ESC 4C  9    7E 81 99 A5 A5 A5 81 7E
CENT_SIGN=9B
YEN_SIGN= 9D
A_TILDE_SMALL=ESC 4C  9     6 2A 2A CA AA 5E 42 8
A_TILDE_CAPITAL=ESC 4C  8     6 4C 94 A4 54 4C 86
INTERNATIONAL_CURRENCY_SYMBOL=ESC 4C  9    82 54 28 44 44 28 54 82
ETH_ICELANDIC_SMALL=EB
ETH_ICELANDIC_CAPITAL=ESC 4C  8    92 FE 92 92 44 7C 38
E_CIRCUMFLEX_CAPITAL=ESC 4C  8    3E 6A AA AA AA 62 22
E_DIAERESIS_CAPITAL=ESC 4C  8    3E AA AA 2A 2A A2 A2
E_GRAVE_CAPITAL=ESC 4C  8    3E 2A 2A AA 6A 22 22
I_DOTLESS_SMALL=ESC 4C  8          12 1E  2
I_ACUTE_CAPITAL=ESC 4C  8          52 9E 12
I_CIRCUMFLEX_CAPITAL=ESC 4C  8       4  92 9E 92 4
I_DIAERESIS_CAPITAL=ESC 4C  8       4  52 1E 52 4
VERTICAL_LINE_BROKEN=ESC 4C  8             77
I_GRAVE_CAPITAL=ESC 4C  8          12 9E 52
O_ACUTE_CAPITAL=ESC 4C  8     E 11 11 51 81 11  E
SHARP_S_SMALL=ESC 4C  8     2 3E 4  52 52 2A  4
O_CIRCUMFLEX_CAPITAL=ESC 4C  8    1C 22 62 A2 A2 62 1C
O_GRAVE_CAPITAL=ESC 4C  8    1C 22 22 A2 62 22 1C
O_TILDE_SMALL=ESC 4C  8     C 12 52 92 52 92 8C
O_TILDE_CAPITAL=ESC 4C  8    1C 22 62 A2 62 A2 9C
MICRO_SYMBOL=E6
THORN_ICELANDIC_SMALL=ESC 4C  8     2 FC    48 3  3
THORN_ICELANDIC_CAPITAL=ESC 4C  8    81 FF FF 42 24 3C 18
U_ACUTE_CAPITAL=ESC 4C  8    3C  2 42 82  2  2 3C
U_CIRCUMFLEX_CAPITAL=ESC 4C  8    3C  2 42 82 82 42 3C
```

```
U_GRAVE_CAPITAL=ESC 4C  8    3C  2  2 82 42  2 3C
Y_ACUTE_SMALL=ESC 4C  8    2  1  4A 84  8 1  2
Y_ACUTE_CAPITAL=ESC 4C  8    2  1  48 86  8 1  2
OVERLINE=ESC 4C  8    8  8  8  8  8  8  8
ACUTE_ACCENT=ESC 4C  8         4  8
SYLLABLE_HYPHEN=ESC 4C  8    1  1  1
PLUS_OR_MINUS_SIGN=F1
THREE_QUARTERS=ESC 4C  9    89 AA 74  8 16 2A 47 82
PARAGRAPH_SYMBOL=ESC 4C  8    6  F  FE      FE
SECTION_SYMBOL=ESC 4C  8    3  4B A9 A5 95 D2  C
DIVIDE_SIGN=F6
CEDILLA=ESC 4C  8            3  C  C
DEGREE_SYMBOL=F8
DIAERESIS=ESC 4C  8      8  8       8  8
MIDDLE_DOT_ACCENT=F9
ONE_SUPERSCRIPT=ESC 4C  8        48 F8  8
THREE_SUPERSCRIPT=ESC 4C  8        88 A8 A8 D8
TWO_SUPERSCRIPT=ESC 4C  8      48 98 A8 A8 48
REQUIRED_SPACE=FF
/                                          /
/                    PC/327  Internal Data Area.                    /
/  Do not change these statement.                                  /
/                                          /
TOP_MARGIN=
LEFT_MARGIN=
DYNAMIC_START_JOB=
DYNAMIC_END_JOB=
DYNAMIC_SET_PAGE_LENGTH=
PRINTER_ID=42  2
/                          End of Definition File                  /
```

## Supplemental Explanation of PDF Statements

The PDF statements have the following functions:

**MAXIMUM_PAGE_LENGTH**
Printed lines per page. If you change this value, you must also change the SET_PAGE_LENGTH statement.

**MAXIMUM_PRINT_POSITION**
Printed characters per line.

**COMPRESS_LINE_SPACING?**
(For LU 2 and LU 3 only) whether blank or null lines are to be printed if all characters on that line are nulls.

**FORM_FEED_ANY_POSITION?**
Whether a form feed is to be valid in any position. If NO, a form feed is valid only in the following positions:

First print position of the buffer
After a valid new line (NL) operation
First print position of a line

**OVERRIDE_FORMATTED_PRINT?**
Whether nulls are to be printed as blanks.

**RESELECT_TIME_EXCPT_5204**
This statement is ignored.

**ESC/P_LINE_FEED?**
If YES, the line feed (LF) function is emulated when a line feed command is received. This is useful for the user who does not want a line feed accompanied by a carriage return (CR) on the printer using ESC/P printer language. If NO, the value defined by the LINE_FEED statement is sent to the printer.

**IGNORE_FORM_FEED_AT_FIRST_POS?**
If YES, the form feed (FF) function is ignored at the first position (for LU 2, LU 3, and non-SNA sessions) or at the beginning of the print job (for LU 1 sessions). Using this option eliminates extra blank pages at the beginning of each print job.

**FORM_FEED_TAKES_POSITION?**
If YES, the form feed (FF) function is effective if followed by data (LU 2, LU 3, and non-SNA sessions only).

## SCS TAB Setting

A PC/3270 printer session LU type 1 can accept any number of tab positions, and the host printer session can send any number of tabs to the printer session. However, the personal computer printer you are using might support fewer tab positions than the host application sets; for example, the IBM Proprinter supports 27 tab positions.

If the number of tab positions that the host application sets exceeds the maximum number of positions that the printer supports, your printed output will not look like what you expect. You can avoid this situation by modifying the PDF and reconfiguring PC/3270 as follows:

1. Modify the SET_HORIZONTAL_TABS statement as follows:

   **SET_HORIZONTAL_TABS=**

2. Save the file under a new name.
3. Compile the PDF and select the PDT file generated.

## PDF Field Names and Symbols

Table 10-1 lists the symbols that are defined for a PDF:

*Table 10-1 (Page 1 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| SPACE | |
| EXCLAMATION_POINT | ! |
| QUOTATION_MARKS | " |
| NUMBER_SIGN | # |
| DOLLAR_SIGN | $ |
| PERCENT_SIGN | % |
| AMPERSAND | & |
| APOSTROPHE | ' |
| LEFT_PARENTHESIS | ( |
| RIGHT_PARENTHESIS | ) |
| ASTERISK | * |
| PLUS_SIGN | + |
| COMMA | , |
| HYPHEN | - |
| PERIOD | . |
| SLASH | / |
| ZERO | 0 |

*Table 10-1 (Page 1 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| ONE | 1 |
| TWO | 2 |
| THREE | 3 |
| FOUR | 4 |
| FIVE | 5 |
| SIX | 6 |
| SEVEN | 7 |
| EIGHT | 8 |
| NINE | 9 |
| COLON | : |
| SEMICOLON | ; |
| LESS_THAN_SIGN | < |
| EQUAL_SIGN | = |
| GREATER_THAN_SIGN | > |
| QUESTION_MARK | ? |
| AT_SIGN | @ |
| A_CAPITAL | A |

*Table 10-1 (Page 2 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| B_CAPITAL | B |
| C_CAPITAL | C |
| D_CAPITAL | D |
| E_CAPITAL | E |
| F_CAPITAL | F |
| G_CAPITAL | G |
| H_CAPITAL | H |
| I_CAPITAL | I |
| J_CAPITAL | J |
| K_CAPITAL | K |
| L_CAPITAL | L |
| M_CAPITAL | M |
| N_CAPITAL | N |
| O_CAPITAL | O |
| P_CAPITAL | P |
| Q_CAPITAL | Q |
| R_CAPITAL | R |
| S_CAPITAL | S |
| T_CAPITAL | T |
| U_CAPITAL | U |
| V_CAPITAL | V |
| W_CAPITAL | W |
| X_CAPITAL | X |
| Y_CAPITAL | Y |
| Z_CAPITAL | Z |
| LEFT_BRACKET | [ |
| BACKSLASH | \ |
| RIGHT_BRACKET | ] |
| CIRCUMFLEX_ACCENT | ^ |
| UNDERLINE | _ |
| GRAVE_ACCENT | ` |
| A_SMALL | a |
| B_SMALL | b |
| C_SMALL | c |
| D_SMALL | d |
| E_SMALL | e |
| F_SMALL | f |
| G_SMALL | g |
| H_SMALL | h |
| I_SMALL | i |
| J_SMALL | j |
| K_SMALL | k |
| L_SMALL | l |

*Table 10-1 (Page 2 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| M_SMALL | m |
| N_SMALL | n |
| O_SMALL | o |
| P_SMALL | p |
| Q_SMALL | q |
| R_SMALL | r |
| S_SMALL | s |
| T_SMALL | t |
| U_SMALL | u |
| V_SMALL | v |
| W_SMALL | w |
| X_SMALL | x |
| Y_SMALL | y |
| Z_SMALL | z |
| LEFT_BRACE | { |
| VERTICAL_BAR | \| |
| RIGHT_BRACE | } |
| TILDE_ACCENT | ~ |
| C_CEDILLA_CAPITAL | Ç |
| U_DIAERESIS_SMALL | ü |
| E_ACUTE_SMALL | é |
| A_CIRCUMFLEX_SMALL | â |
| A_DIAERESIS_SMALL | ä |
| A_GRAVE_SMALL | à |
| A_OVERCIRCLE_SMALL | å |
| C_CEDILLA_SMALL | ç |
| E_CIRCUMFLEX_SMALL | ê |
| E_DIAERESIS_SMALL | ë |
| E_GRAVE_SMALL | è |
| I_DIAERESIS_SMALL | ï |
| I_CIRCUMFLEX_SMALL | î |
| I_GRAVE_SMALL | ì |
| A_DIAERESIS_CAPITAL | Ä |
| A_OVERCIRCLE_CAPITAL | Å |
| E_ACUTE_CAPITAL | É |
| AE_DIPTHONG_SMALL | æ |
| AE_DIPTHONG_CAPITAL | Æ |
| O_CIRCUMFLEX_SMALL | ô |
| O_DIAERESIS_SMALL | ö |
| O_GRAVE_SMALL | ò |
| U_CIRCUMFLEX_SMALL | û |
| U_GRAVE_SMALL | ù |
| Y_DIAERESIS_SMALL | ÿ |

*Table 10-1 (Page 3 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| O_DIAERESIS_CAPITAL | Ö |
| U_DIAERESIS_CAPITAL | Ü |
| O_SLASH_SMALL | ø |
| POUND_SIGN | £ |
| O_SLASH_CAPITAL | Ø |
| MULTIPLY_SIGN | × |
| A_ACUTE_SMALL | á |
| I_ACUTE_SMALL | í |
| O_ACUTE_SMALL | ó |
| U_ACUTE_SMALL | ú |
| N_TILDE_SMALL | ñ |
| N_TILDE_CAPITAL | Ñ |
| ORDINAL_INDICATOR_FEMININE | a |
| ORDINAL_INDICATOR_MASCULINE | o |
| QUESTION_MARK_INVERTED | ¿ |
| REGISTERED_TRADEMARK_SYMBOL | ® |
| LOGICAL_NOT | ¬ |
| ONE_HALF | ½ |
| ONE_QUARTER | ¼ |
| EXCLAMATION_POINT_INVERTED | ¡ |
| LEFT_ANGLE_QUOTES | « |
| RIGHT_ANGLE_QUOTES | » |
| A_ACUTE_CAPITAL | Á |
| A_CIRCUMFLEX_CAPITAL | Â |
| A_GRAVE_CAPITAL | À |
| COPYRIGHT_SYMBOL | © |
| CENT_SIGN | ¢ |
| YEN_SIGN | ¥ |
| A_TILDE_SMALL | ã |
| A_TILDE_CAPITAL | Ã |
| E_CIRCUMFLEX_CAPITAL | Ê |
| E_DIAERESIS_CAPITAL | Ë |
| I_ACUTE_CAPITAL | Í |
| I_CIRCUMFLEX_CAPITAL | Î |
| I_DIAERESIS_CAPITAL | Ï |
| VERTICAL_LINE_BROKEN | ¦ |
| I_GRAVE_CAPITAL | Ì |
| O_ACUTE_CAPITAL | Ó |
| O_CIRCUMFLEX_CAPITAL | Ô |
| O_GRAVE_CAPITAL | Ò |
| O_TILDE_SMALL | õ |
| O_TILDE_CAPITAL | Õ |
| MICRO_SYMBOL | µ |

*Table 10-1 (Page 3 of 3). Printer Symbol Definitions*

| Field Name | Symbol |
|---|---|
| U_ACUTE_CAPITAL | Ú |
| U_CIRCUMFLEX_CAPITAL | Û |
| U_GRAVE_CAPITAL | Ù |
| ACUTE_ACCENT | ´ |
| SYLLABLE_HYPHEN | - |
| PLUS_OR_MINUS_SIGN | ± |
| THREE_QUARTERS | ¾ |
| PARAGRAPH_SYMBOL | ¶ |
| SECTION_SYMBOL | § |
| DIVIDE_SIGN | ÷ |
| DEGREE_SYMBOL | ° |
| ONE_SUPERSCRIPT | |
| THREE_SUPERSCRIPT | |
| TWO_SUPERSCRIPT | |
| REQUIRED_SPACE | |
| INTERNATIONAL_CURRENCY_SYMBOL | ¤ |
| ETH_ICELANDIC_SMALL | ð |
| ETH_ICELANDIC_CAPITAL | Ð |
| SHARP_S_SMALL | ß |
| THORN_ICELANDIC_SMALL | þ |
| THORN_ICELANDIC_CAPITAL | Þ |
| Y_ACUTE_SMALL | ý |
| Y_ACUTE_CAPITAL | Ý |
| OVERLINE | ¯ |
| CEDILLA | ¸ |
| DIAERESIS | .. |
| MIDDLE_DOT_ACCENT | . |

## Printer Color Mixing

Some printers, such as the IBM 5182, compose certain colors by mixing colors. Colors are mixed by printing the text in one color and then printing over the same text in another color on a second pass.

PC/3270 composes a color if the color is not defined in the PDT of a color printer that is capable of mixing colors. Therefore, if you are using a printer that composes some colors by mixing two colors, you must leave the definition of the composed colors blank in the PDF. Only the composite colors defined in Table 10-2 are created by double-printing the primary colors.

*Table 10-2. Color Mixes*

| Composite Color | Primary Colors |
|---|---|
| Blue | Magenta, cyan |
| Green | Yellow, cyan |
| Red | Yellow, magenta |

For example, to create red, you must define yellow and magenta. The primary colors must be defined in the PDT.

## Printer Session Data Stream Support

There are two types of host-directed print data streams supported by PC/3270: the 3270 data stream and the SNA character string (SCS) data stream.

## 3270 Data Stream

The 3270 data stream is a buffer-oriented data stream. The print data is formatted as if it were going to be displayed on a screen. The host system sends commands to format the presentation space; these commands can change the presentation space in any location at any time. After the host system finishes formatting the presentation space, it issues a START PRINT command and the presentation space is printed as accurately as the printer hardware allows. The 3270 data stream can be sent to PC/3270 workstations over an SNA LU 3 session or a non-SNA DFT printer session.

Table 10-3 lists the commands that can be sent in the 3270 data stream:

*Table 10-3 (Page 1 of 2). 3270 Data Stream Commands*

| Command | Meaning |
|---|---|
| EAU | Erase All Unprotected |
| EW | Erase/Write |
| EWA | Erase/Write Alternate |
| RB | Read Buffer |
| RM | Read Modified |
| RMA | Read Modified All |
| W | Write |

*Table 10-3 (Page 2 of 2). 3270 Data Stream Commands*

| Command | Meaning |
|---|---|
| WSF | Write Structured Field |

The RB, RM, and RMA commands cannot be used with an SNA attachment.

Table 10-4 lists the orders that can be sent in the 3270 data stream:

*Table 10-4. 3270 Data Stream Orders*

| Order | Meaning |
|---|---|
| EUA | Erase Unprotected to Address |
| IC | Insert Cursor |
| MF | Modify Field |
| PT | Program Tab |
| RA | Repeat to Address |
| SA | Set Attribute |
| SBA | Start Buffer Address |
| SFE | Start Field Extended |
| SSF | Start Field |

The last three orders in this list manage the color, extended highlighting, and programmed symbols attributes for fields and individual characters. The programmed symbols attribute is not supported by PC/3270 for printing.

In addition to the commands and orders in the preceding list, there are special printer formatting control codes that can be included in the 3270 data stream.

Table 10-5 lists the control codes that can be sent in the 3270 data stream:

*Table 10-5. 3270 Data Stream Control Codes*

| Code | Description |
|---|---|
| CR | Carriage Return moves the print position to the left margin. |
| EM | End of Message ends the print operation. |
| FF | Form Feed moves the print position to the left margin at the top of the next page. |
| NL | New Line moves the print position to the left margin and down one line. |

**Note:** NL, CR, and EM are valid only if a line-length format specified by the WCC is not used.

PC/3270 printer support interprets each 3270 attribute and printer control code and translates them into a sequence of one or more personal computer printer control codes. For more information about the 3270 data stream, refer to the *IBM 3270 Information Display Data Stream Programmer's Reference*.

## SCS Data Stream

The SCS data stream is a sequential data stream that is oriented toward line printers. The characters are translated according to the host system code page and printed according to the attributes and formatting specified by the control commands. The way in which SCS characters are printed depends only on the control codes that precede them. Therefore, it is not necessary to buffer the characters before they are printed. The SCS data stream flows across the SNA LU 1 session only.

The valid SCS control codes supported by PC/3270 are listed in Table 10-6.

*Table 10-6. Supported SCS Control Codes*

| Code | Value | Command |
|---|---|---|
| BEL | X'2F' | Bell Function |
| BS | X'16' | Backspace |
| CR | X'0D' | Carriage Return |
| ENP | X'14' | Enable Presentation |
| FF | X'0C' | Form Feed |
| GE | X'08' | Graphic Escape |
| HT | X'05' | Horizontal Tab |
| INP | X'24' | Inhibit Presentation |
| IRS | X'1E' | Interchange-Record Separator |
| LF | X'25' | Line Feed (Index) |
| NL | X'15' | New Line |
| NUL | X'00' | Null |
| PPM | X'2BD2 xx48' | Page Presentation Media |
| SA | X'28' | Set Attribute |
| SHF | X'2B C1' | Set Horizontal Format |
| SLD | X'2B C6' | Set Line Density |
| SPD | X'2BD2 xx29' | Set Print Density |
| SVF | X'2B C2' | Set Vertical Format |
| TRN | X'35' | Transparent |
| VCS | X'04 xx' | Vertical Channel Select |
| VT | X'0B' | Vertical Tab |

**Note:** The ENP and INP commands are accepted, but are ignored.

For more information about the SCS printer data stream, refer to *IBM Systems Network Architecture — Sessions between Logical Units*, GC20-1868.

## Delimiting Print Jobs

Many print jobs can be sent over a single PC/3270 printer session. PC/3270 allows multiple sessions and applications to share a single personal computer printer between jobs. PC/3270 needs to know when each print job starts and ends so that printers can be shared properly and begin and end job strings can be sent at the appropriate times. The emulator recognizes several different methods of delimiting print jobs:

**By session**
PC/3270 Printer Support assumes, by default, that all print jobs are delimited by sessions. That is, in the absence of all other indicators, PC/3270 assumes that a print job begins when a printer session is started and ends when it is reset.

**Timeout interval**
On non-SNA distributed function terminal (DFT) sessions, print jobs can be delimited by a user-specified timeout interval. A print job on a non-SNA DFT printer session begins when the first host-outbound data for that job is received, and ends when no host-outbound data is received for a period of time exceeding the user-specified non-SNA DFT timeout interval. For PC/3270, this interval is specified during configuration.

**By brackets**
On an SNA session with an LU 1 or LU 3 host application, PC/3270 can use bracket indicators to delimit print jobs. The emulator opens the printer when it receives the begin bracket; then it processes and prints the data. The emulator closes the printer after it receives an end bracket.

When the emulator receives another begin bracket, it again opens a printer and begins processing a print job.

**Structured fields**
The host can use structured fields to indicate to the device that a new file is beginning or that the current file is completed. PC/3270 delimits print jobs with Begin of File and End of File structured fields to perform host-directed printing. Structured fields are described in the next section.

## Structured Fields (SFs)

The host uses Begin of File and End of File structured fields (SFs) to indicate to a device that a file is beginning or ending.

### Begin/End of File Query Reply

The Begin/End of File query reply indicates that a device supports Begin of File and End of File to delineate print jobs. The PC/3270 sends a query reply, as shown in Table 10-7, to the host in response to a Read Partition General query.

*Table 10-7. Begin/End of File Query Reply Format*

| Byte | Contents | Description |
|---|---|---|
| 0–1 | X'0005' | The length of this structure |
| 2 | X'81' | Query reply |
| 3 | QCODE X'9F' | Begin/End of File |
| 4 | FLAGS | Reserved; must be set to 0's |

## Begin/End of File SFs

Begin/End of File SFs are accepted on either LU 1 or LU 3 sessions. Table 10-8 shows the format of the Begin/End of File SFs.

*Table 10-8. Begin/End of File SF Format*

| Byte | Bit | Contents | Description |
|---|---|---|---|
| 0–1 | | X'0007' | The length of this structure |
| 2–3 | | X'0F85' | Begin/End of File |
| 4 | | PID | Partition ID |
| 5 | | FLAG1* | |
| | 0–1 | B'00' | Reserved |
| | | B'01' | End of File is being sent |
| | | B'10' | Begin of File is being sent |
| | | B'11' | Reserved |
| | 2–7 | | Reserved. |
| 6 | | FLAG2 | Reserved; must be set to 0's. |

* This byte indicates whether Begin of File or End of File is being sent.

**Processing Begin/End of File SFs:** When the Begin/End of File SFs are used with brackets or non-SNA timeout intervals, the Begin/End of File SFs take precedence over the brackets or timeout intervals in determining when a print job begins or ends. Refer to the following examples:

Begin/End of File SF overriding brackets:

Begin Bracket, Begin of File SF, ...Data...,
End Bracket

The device waits indefinitely until the End of File SF is received before ending the print job.

Begin/End of File SF overriding non-SNA timeout intervals:

Begin of File SF, ...Data..., pause > timeout value

The device waits indefinitely until the End of File SF is received before ending the print job.

Inconsistent use of Begin/End of File SFs and brackets:

Begin Bracket, ...Data1...,Begin of File SF,...Data2..,
End of File SF, ...Data3..., End Bracket

When you use the Begin of File and End of File SFs inconsistently with brackets, the results are unpredictable. In the preceding example, the device might process Data1, Data2, and Data3 as separate jobs, or it might combine two or more of them into a single file.

For predictable results, each data block must be enclosed by a Begin of File SF and an End of File SF. The following example shows three print jobs all delimited by Begin/End of File SFs:

Begin Bracket, Begin of File SF, ...Data1...,
End of File SF,(job1)
Begin of File SF, ...Data2..., End of File SF,(job2)
Begin of File SF, ...Data3..., End of File SF,
End Bracket(job3)

PC/3270 always keeps track of brackets and timeout intervals. After the emulator receives a Begin of File SF, it takes no action on Begin Brackets, End Brackets, or timeout until it receives an End of File SF. After a valid End of File SF is processed, the emulator defaults to delimiting jobs by brackets or timeout intervals until it receives the next Begin of File SF.

**Begin/End of File SF Error Conditions:** PC/3270 does not accept transmission of data belonging to two separate print jobs in the same chain. To be accepted by the emulator, Begin of File SFs must be the first SF of a chain, and End of File SFs must be the last SF of a chain.

PC/3270 rejects transmission in the following instances:

- The emulator receives an End of File SF without first receiving a Begin of File SF.
- The emulator receives a second Begin of File SF without receiving an intervening End of File SF.
- The emulator receives a Begin of File SF that is not the first structured field following a Write Structured Field command (LU 2, LU 3, and non-SNA sessions) or a function management header 1 (LU 1 sessions).
- The emulator receives an End of File SF that is not the last structured field following a Write Structured Field command (LU 2, LU 3, and non-SNA sessions) or a function management header 1 (LU 1 sessions).

**Processing SCS Data Streams:** When processing an SCS data stream, PC/3270 treats Begin/End of File SFs as follows:

- A Begin of File SF indicates that all SCS data in the same transmission is part of a new print job until an End of File SF is received.
- An End of File SF indicates that any SCS data received in the same chain as the End of File SF is the last data of the current print job.

**Processing 3270 Data Streams:** When processing a 3270 data stream, PC/3270 treats Begin/End of File SFs as follows:

- A Begin of File SF indicates that the next presentation space print (initiated by a write type command with the start print bit turned on in the write control character) is the first in a print job.
- An End of File SF indicates that the last presentation space print was the last of the current print job. The emulator immediately sends a terminate string to the printer to close the printer session.

If PC/3270 receives a Begin of File SF and an End of File SF without at least one presentation space separating them, it ignores the SFs.

# Chapter 11. File Transfer Commands for PC/3270

You can send data files to and receive them from IBM host systems that are running:

| | |
|---|---|
| **CICS/MVS** | Customer Information Control System running under MVS |
| **CICS/VSE** | CICS running under Virtual Storage Extended |
| **MVS/TSO** | Multiple Virtual Storage/Time Sharing Option |
| **OV/MVS** | OfficeVision/MVS |
| **VM/CMS** | Virtual Machine/Conversational Monitor System |

For more information on using these commands, select **Help** from the Personal Communications menu bar, then select **Commands** and **Transfer** in the pop-up menus that follow.

## File Transfer Methods

You can transfer files in the following ways with PC/3270:

By using the Transfer menu of the workstation window
By using the **SEND** and **RECEIVE** commands at the OS/2 command prompt
By using **ALMCOPY**

## Requirements and Restrictions

Install the file transfer program, IND$FILE, at your host system. Ask your system administrator for additional file transfer procedures and precautions.

You should not use the following words as a VM file name or file type, as an MVS data set name, or as a CICS file name, because they are reserved for use as option commands. However, if it you must use them for files, add a '\' (backslash), as a separate word, immediately after the file name and so on, even if you do not specify any options.

ASCII, APPEND, TIME, CLEAR, NOCLEAR, SILENT, QUIET, PROGRESS, JISCII, SO, NOSO, BLANK, USER, CRLF, BINARY, NOCRLF

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## Sending and Receiving Files from the OS/2 Command Prompt

The workstation is the point of reference for the SEND and RECEIVE commands: You send from the workstation to the host and receive from the host to the workstation

To send or receive a file:

1. Make sure you are logged on to your host.
2. Make sure the **Ready** message of the host system is displayed, except if you are transferring files through the command option of the ISPF application.

   **Note:** In the latter case, you must specify the NOCLEAR option for the file transfer command.

   If your screen is blank, make sure that no applications are running and that your host session is not in a *holding* state.

   **Note:** If you receive any messages from host application programs while you are transferring files, the transfer might not succeed. To prevent messages from interfering, enter the appropriate host command to set messages off temporarily. When file transfer is finished, set messages on again.
3. Switch to your OS/2 Window session or OS/2 full-screen session.
4. If you use a hard disk, make sure the **SEND.EXE** and **RECEIVE.EXE** files are in your current directory or in your path.
5. Type the appropriate SEND or RECEIVE command at the OS/2 command prompt.

   Details on the SEND and RECEIVE commands and their options are explained in the following sections.

## Using the VM/CMS SEND Command

Use the following information when sending a file to VM/CMS:

Figure 11-1 shows the command and information that you must provide. Enter it as shown (including parentheses). You can use either uppercase or lowercase letters.

**Note:** means to insert a space. There must ***not*** be a space between **h:** and **fn**.

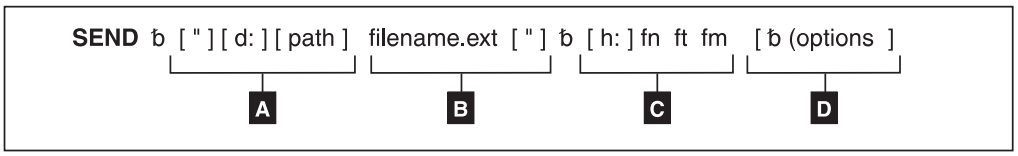


*Figure 11-1. VM/CMS SEND Command Syntax*

A The workstation drive and path of the file to send.

B The name of the workstation file to send.

C Host session specifications for the file to be sent to the host.

- h: The short name of the session (which can be omitted if it is **a**)
- fn File name
- ft File type
- fm File mode

D Optional changes made to the file during transfer. More than one option can be selected. Valid options are:

APPEND
ASCII
CLEAR
CRLF
LRECL n
NOCLEAR
PROGRESS
QUIET
RECFM x
TIME n

The parts of the VM/CMS SEND command are:

SEND — The command.

d: — The name of the diskette or hard disk drive on which the file is located.

path — The path to the subdirectory that the file is in.

filename.ext — The name of the file to be sent, including the extension.

h: — The short name of the host session to which you want to send the file. The default is a:.

fn ft fm — The name the file is to have on your VM/CMS disk. You must specify the file name (fn) and file type (ft). You can omit file mode (fm) if you want the file placed on your A-disk. You can create a new name or use a name that is already on your disk. If you use a new name, the file that you send is added to your disk. If you use

the name of an existing file, the file that you send either replaces or is added to the old file. (Refer to the description of the APPEND option.)

(options

These options can be specified:

APPEND
Specifies that the file being sent is to be added to the end of an existing VM/CMS file. Omit this option if you want the file to replace an existing file. You cannot specify the LRECL n or RECFM x option if you use the APPEND option.

ASCII Specifies ASCII-to-EBCDIC character translation.

CLEAR
Clears the workstation window at the beginning of the file transfer.

CRLF Specifies preserving of the carriage return and line feed codes. You need the ASCII and CRLF options for text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files, such as programs.

LRECL n
Specifies the file's record length. Include a record length only if you want the file to have a record length on your VM/CMS disk other than 80. Replace n with the record length you want. If you omit this option, the record length is set to 80 for fixed-length records or to a maximum of 80 for variable-length records.

NOCLEAR
Suppresses the sending of a Clear command at the beginning of the file transfer. **NOCLEAR** is the default.

PROGRESS
Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

RECFM x
Specifies the file record format. Use this parameter to specify variable-length or fixed-length records in the file. Replace x with V for variable or F for fixed. By default, the file has fixed-length records unless you specify the CRLF option; then the file has variable-length records unless you specify otherwise.

TIME n
Specifies the length of time n, in units of 30 seconds, that the program waits for a response from the host before it sends an error message. Replace n with an integer value in the range from 1 through 2184. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, of large block sizes, or for slow communication lines (such as SDLC and ASYNCH), 3 seconds is recommended. At least one blank space is required between TIME and n.

## Examples

The following examples show the command syntax you can use to send files. The parameters of the SEND command can be combined into a single set of parentheses.

To send a workstation file from your default drive and add it as a new file on your VM/CMS A-disk:

**SEND pc.txt a:cmsfile script a (ASCII CRLF LRECL 72 RECFM V**

**Note:** If you use a command that exceeds one line, do not press Enter when you fill that line; continue typing your command.

This command sends a workstation file named **PC.TXT** from your default drive to your host in your host session named **a**. You do not need to specify the workstation drive if the file you are sending is on the current drive. The command creates a new file, named **CMSFILE SCRIPT**, on your A-disk. The records in the file can vary in length up to 72 characters.

To send a workstation file from your default drive to replace a file on your VM/CMS A-disk:

**SEND pc.txt a:cmsfile script a (ASCII CRLF**

This command sends a workstation file named **PC.TXT** from your default drive to your VM/CMS A-disk in your host session named **a**. You do not need to name the workstation drive if the file you are sending is on the default drive. The file replaces a **SCRIPT** file named **CMSFILE**. The new **CMSFILE** has the same record length and format as the old **CMSFILE**.

If you do not have a file called **CMSFILE SCRIPT** on your A-disk, **PC.TXT** is added to your A-disk as a new file called **CMSFILE SCRIPT**. The records in the file are 80 characters long and have fixed length.

To send a binary workstation file from a drive other than your default drive:

**SEND a:pc.exe c:cmsfile exebin b**

This command sends a workstation file named **PC.EXE** from a diskette in drive A to your VM/CMS B-disk in your host session named **c**. It is a new file, or it replaces a file named **CMSFILE**.

The records in the file are 80 characters long and have fixed length.

To send a file from your hard disk and add it to the end of a file on your VM/CMS A-disk:

**SEND c:pc.txt cmsfile script a (ASCII CRLF APPEND**

This command sends a workstation file named **PC.TXT** from your hard disk to your host session. You do not need to name the host session if you are sending to the **a** session. The file is added to the end of a script file named **CMSFILE** on your VM/CMS A-disk.

To send a file from a subdirectory on your hard disk to your VM/CMS A-disk:

**SEND c:\sd1\pc.txt cmsfile script a (ASCII CRLF**

This command sends a file named **PC.TXT** from subdirectory **SD1** on your hard disk to your host session. It replaces a **SCRIPT** file named **CMSFILE** on your VM/CMS A-disk.

## Using the VM/CMS RECEIVE Command

Use the following information when receiving a file from VM/CMS:

Figure 11-2 shows the command and information you must provide. Enter it as shown (including parentheses), except that you can use either uppercase or lowercase letters.

**Note:** means to insert a space. There must ***not*** be a space between **h:** and **fn**.

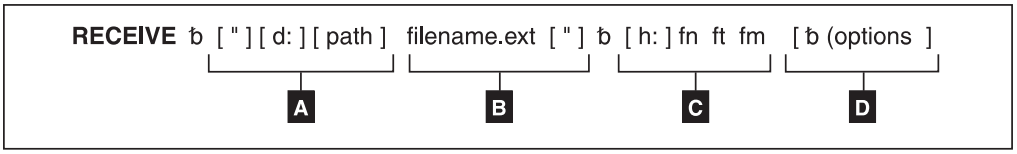


*Figure 11-2. VM/CMS RECEIVE Command Syntax*

A The workstation drive and path of the file to be received.

B The name of the workstation file to be received.

C Host session specifications for the file to be received from the host.

- h: The short name of the session (which can be omitted if it is **a**)
- fn File name
- ft File type
- fm File mode

D Optional changes made to the file during transfer. More than one option can be selected. Valid options are:

APPEND
ASCII
CLEAR
CRLF
NOCLEAR
PROGRESS
QUIET
TIME n

The parts of the VM/CMS RECEIVE command are:

RECEIVE The command.

d: The name of the diskette or hard disk drive on which the file is to be received.

path The path indicating the directory to which the file is to be stored.

filename.ext The name of the workstation file, including the extension. Use a new name or one that already exists. If you use a new name, the file that you receive is added to your diskette or hard disk. If you use the name of an existing file, the file that you receive either replaces or supplements the existing file. (Refer to the APPEND option.)

h: The short name of the host session from which you want to get the file. The default is a:.

fn ft fm The name of the file you want to receive from your VM/CMS disk. The file name fn is required.

(options

These options can be specified:

APPEND
Specifies that the file being received is to be added to the end of an existing file. Omit this option if you want the VM/CMS file that is received to replace an existing file.

ASCII Specifies EBCDIC-to-ASCII character translation.

CRLF Specifies the carriage return and line feed codes. You need ASCII and CRLF for text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files, such as programs.

CLEAR
Clears the workstation window at the beginning of the file transfer.

NOCLEAR
Suppresses the sending of a Clear command at the beginning of the file transfer.

PROGRESS
Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

TIME n
Specifies the length of time, in units of 30 seconds, that the program waits for a response from the host before it sends an error message. The value n is an integer value in the range from 1 through 99. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, of large block sizes, or for slow communication lines (such as SDLC and ASYNCH), 5 seconds is recommended.

## Examples

The following examples show the command syntax you can use to receive files from a VM/CMS host. The parameters of the RECEIVE command can be combined into a single set of parentheses.

To receive a file from your VM/CMS A-disk to your default drive for a workstation session:

**RECEIVE pc.txt a:cmsfile script a (ASCII CRLF**

This command sends a **SCRIPT** file **CMSFILE** from your VM/CMS A-disk in a host session named **A** to your workstation session. It adds the file to your default drive (diskette or hard disk) with the name **PC.TXT**.

To receive a file from your VM/CMS B-disk and replace a file on a drive other than your default:

**RECEIVE a:pc.txt a:cmsfile script b (ASCII CRLF**

This command sends a **SCRIPT** file named **CMSFILE SCRIPT** from your VM/CMS B-disk in a host session named **A** to a drive other than the default for your workstation session. It replaces a file named **PC.TXT** on a diskette in drive A.

To receive a file from your VM/CMS A-disk and add it to the end of a file on your hard disk:

**RECEIVE c:pc.txt a:cmsfile script a (ASCII CRLF APPEND**

This command sends a **SCRIPT** file named **CMSFILE SCRIPT** from your VM/CMS A-disk in a host session named **A** to your workstation session. It adds the contents of **CMSFILE** to the end of a file named **PC.TXT** on your hard disk.

To receive a file from your VM/CMS A-disk and place it in a subdirectory on your default drive:

**RECEIVE \sd1\pc.txt a:cmsfile script a (ASCII CRLF**

This command sends a **SCRIPT** file named **CMSFILE SCRIPT** from your VM/CMS A-disk to your default drive. It creates or replaces a file named **PC.TXT** in a subdirectory named **SD1**.

## Using the MVS/TSO SEND Command

Use the following information when entering the SEND command to the MVS/TSO host:

Figure 11-3 shows the command and information you must provide. Enter it as shown (including parentheses), except that you can use either uppercase or lowercase letters.

**Note:** ␣ means to insert a space. There must ***not*** be a space between **h:** and **data-set-name**.

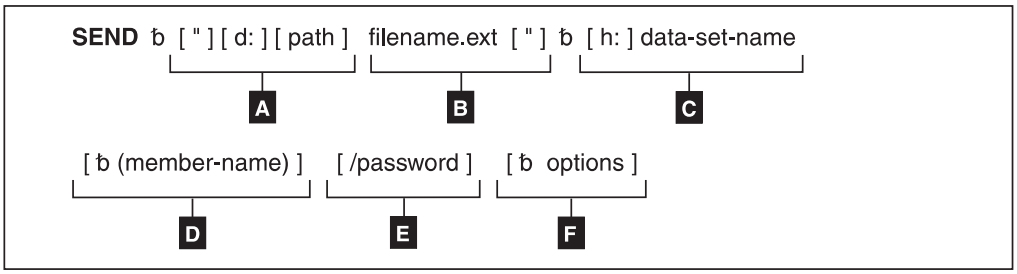


*Figure 11-3. MVS/TSO SEND Command Syntax*

A The workstation drive and path of the file to send.

B The name of the workstation file to send.

C The short name of the host session and the data set name of the file to send.

D The member name if the file is put in a partitioned data set.

E The password of the data set if it has one.

F Optional changes made to the file during transfer. More than one option can be specified. Valid options are:

APPEND
ASCII
BLKSIZE(n)
CLEAR
CRLF
LRECL(n)
NOCLEAR[1]
PROGRESS
QUIET
RECFM(x)
SPACE(n[,n1]) unit
TIME(n)

The parts of the MVS/TSO SEND command are:

SEND The command.

d: The name of the diskette or hard disk drive where the file is located.

[1] You must use the NOCLEAR option when you are transferring files while in ISPF command mode on the host.

path The path indicating the directory where the file is located.

filename.ext The name of the file to be sent. Include the extension if the file has one.

h: The name of the MVS/TSO host session to which you want to send the file. You can omit this name if you have only one host. If you have more than one host, this is the short name of the MVS/TSO host session. The default short name is **A**.

data-set-name The data set name that the file you send is to have on your MVS/TSO volume; this name is required. Enclose the data set name with the member name in single quotation marks if you are using a fully qualified data set name.

This option creates a new name or uses a data set name already on your TSO volume. If you use a new name, the file that you send is added to your MVS/TSO volume. If you use the name of an existing data set, the file you send either replaces or supplements the existing data set. Refer to the APPEND option.

(member-name) The member name if the file is to be put into a partitioned data set. If you use *member-name*, you cannot use LRECL(n), BLKSIZE(n), RECFM(x), and SPACE(n,[n1]) unit.

**Note:** If someone else is using the partitioned data set, you cannot send a file to your MVS/TSO host.

/password The password of the data set, if the data set has a password.

options

These options can be specified:

APPEND
Specifies that the file being sent is added to the end of an existing MVS/TSO data set. Omit this option if you want the file to replace an existing MVS/TSO data set. You cannot use LRECL(n), RECFM(x), SPACE(n[,n1]) unit, or BLKSIZE(n) options if you use the APPEND option.

ASCII Specifies ASCII-to-EBCDIC character translation.

BLKSIZE(n)
Specifies the size of the blocks of data in a new data set on your MVS/TSO volume. To set the block size for a new data set, replace n with the new size. If you omit this option, the block size is determined in the following manner:

If the record format is variable, the block size is 6233.

If the record format is fixed, the block size is the largest multiple of the record length that is less than 6233:

BLKSIZE = LRECL (6233/LRECL)

If you use the (member-name) or APPEND option, do not use this option.

CLEAR
Clears the workstation window at the beginning of the file transfer.

CRLF Specifies the global use of carriage return and line feed codes. You need to specify ASCII and CRLF options for sending text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files.

LRECL(n)
Specifies the record length for a new data set on your MVS/TSO volume, where n is a whole number from 1 through 32760 representing the number of characters per record. If you want to set the record length for a new data set, replace n with the new length. If you omit this option, the record length is set to 80 for fixed-length records and to 255 for variable-length records. If you use the (member-name) or APPEND options, do not use this option.

NOCLEAR
Suppresses the sending of a Clear command at the beginning of the file transfer. This option is required for ISPF command mode.

PROGRESS
Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

RECFM(x)
Specifies the record format for a new data set on your MVS/TSO volume, where x = V, F, or U. For variable-, fixed- or undefined-length records in the data set, replace the x with V, F, or U, respectively.

If you omit this option, the record format of the host data set is determined by the setting of the CRLF parameter: if you specify CRLF, the data set has variable-length records; if you do not specify CRLF, it has fixed-length records. If you use the (member-name) or APPEND options, do not use this option.

SPACE(n[,n1]) unit
Specifies an amount of space to be set aside for a new data set on your MVS/TSO volume. To set aside a certain number of blocks, tracks, or cylinders for the new data set:

Provide unit as the type of space you want (AVBLOCK, TRACKS, or CYLINDERS).

Give n as the amount of space that you want the data set to occupy (in the unit of measure you select).

If the data set needs more space than you ask for with n, give n,n1 where n1 is the size of additional space to be used only when necessary.

These values are similar to the values on the ALLOCATE command of MVS/TSO.

If you omit this option, you get space for one block. The length of the block is set by the BLKSIZE(n) or LRECL(n) options. If you use the (member-name) or APPEND options, do not use this option.

TIME (n)

Specifies the length of time, in seconds, the program waits for a response from the host before it sends an error message. Replace n with an integer value in the range from 1 through 2184. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, of large block sizes, or for slow communication lines (such as SDLC or ASYNCH), 3 seconds is recommended.

## Examples

The following examples show the command syntax you can use to send files from your workstation to an MVS/TSO host:

To send a file from your default drive to replace a file on the MVS/TSO host:

**SEND pc.txt g:ds.script ASCII CRLF**

This command sends a workstation file named **PC.TXT** from your default drive to your MVS/TSO host in a host session named **G**. It creates or replaces a data set named **DS.SCRIPT** on your MVS/TSO volume.

To send a file from a drive other than the default to your MVS/TSO host:

**SEND a:pc.txt g:ds.script ASCII CRLF**

This command sends a workstation file named **PC.TXT** from a diskette in drive A to your MVS/TSO host in a host session named **G**. It replaces a data set named **DS.SCRIPT** on your MVS/TSO volume.

To send a file from your default drive to your MVS/TSO host and add it to the end of an MVS/TSO data set:

**SEND a:pc.txt g:ds.script ASCII CRLF APPEND**

This command sends a workstation file named **PC.TXT** from a diskette in drive A to your MVS/TSO host in a host session named **G**. It adds the file to the end of a data set named **DS.SCRIPT** on your MVS/TSO volume.

To send a file to your MVS/TSO host and add it to the end of a data set that has a password:

**SEND a:pc.txt g:ds.script/odyssey8 ASCII CRLF APPEND**

This command sends a workstation file named **PC.TXT** from a diskette in drive A to your MVS/TSO host in a host session named **G**. It adds the file to the end of a data set named **DS.SCRIPT** on your MVS/TSO volume. This data set has a password of odyssey8.

To send a file from a subdirectory on your hard disk to a partitioned data set on your MVS/TSO host:

**SEND c:\sd1\pc.txt g:ds.script (m1) ASCII CRLF**

This command sends a workstation file named **PC.TXT** from a subdirectory named **SD1** on your hard disk to your MVS/TSO host in a host session named **G**. It creates or replaces a member named **M1** in a partitioned data set named **DS.SCRIPT** on your MVS/TSO volume.

To send a file to a partitioned data set that has a password:

**SEND a:pc.txt g:ds.script (m2)/ili11 ASCII CRLF APPEND**

This command sends a workstation file named **PC.TXT** from a diskette in drive A to your MVS/TSO host in a host session named **G**. It adds the file as

a member named **M2** to a partitioned data set named **DS.SCRIPT** on your MVS/TSO volume. This data set has a password of ili11.

To send a file from your default drive and add it as a new data set on your MVS/TSO volume:

```
SEND pc.txt g:ds.script/aeneid2  ASCII CRLF LRECL(132)
     BLKSIZE(132) RECFM(V) SPACE(2 ,1 ) TRACKS
```

This command sends a workstation file named **PC.TXT** from your default drive to your MVS/TSO host. It adds the file as a new data set named **DS.SCRIPT** on your MVS/TSO volume. A password of aeneid2 is assigned. The records in the data set can vary in length up to 132 characters. Data blocks are the same length as the records. Twenty tracks are set aside for this data set. If more tracks are needed, they are added in groups of 10.

## Using the MVS/TSO RECEIVE Command

Use the following information when receiving a file from MVS/TSO:

Figure 11-4 shows the command and information you must provide. Enter it as shown (including parentheses), except that you can use either uppercase or lowercase letters.

**Note:** ␣ means to insert a space. There must ***not*** be a space between **h:** and **data-set-name**.

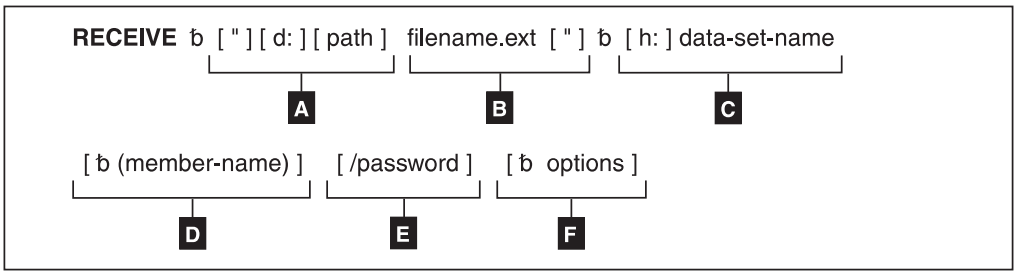


*Figure 11-4. MVS/TSO RECEIVE Command Syntax*

A The workstation drive and path to the directory where the file is to be stored.

B The name of the workstation file to receive.

C The short name of the host session, and the data set name of the file you are receiving.

D The member name if the file is put in a partitioned data set.

E The password of the data set, if any.

F Optional changes made to the file during transfer. More than one option can be specified. Valid options are:

APPEND
ASCII
CRLF
PROGRESS
QUIET
TIME(n)

The parts of the MVS/TSO RECEIVE commands are:

RECEIVE — The command.

d: — The name of the diskette or hard disk drive where the file is to be located. Use **A:**, **B:**, **C:** or **D:**. This part is optional if the file is received on the current drive.

path — The subdirectory where you want the data set located. This part is optional.

filename.ext — The name the file is to have on your diskette or hard disk. Creates a new name or uses a name that is already on your diskette or hard disk.

If you use a new name, the data set that you receive is added to your diskette or hard disk. If you use the name of an existing file,

the data set that you receive either replaces or supplements the existing file. (Refer to the APPEND option on page 11-15.)

h: The short name of the MVS/TSO session where the data set is located. If you have only one host, this part is optional. Use this option if you have more than one host. The default short name is **A**.

data-set-name The name of the data set or the partitioned data set that contains the member you want to send to your workstation session. You must use the qualified name. Enclose the data set name with the member name in single quotation marks if you are using a fully qualified data set name.

(member-name) The member name of a partitioned data set to send to your workstation session. This part is optional. Use it only if the data set is a member of a partitioned data set.

/password The password of the data set. Use it only if the data set has a password.

options

These options can be specified:

APPEND
Adds the data set to the end of an existing file. Omit this part if you want the MVS/TSO data set to replace an existing workstation file.

ASCII Specifies EBCDIC-to-ASCII character translation.

CRLF Specifies the use of carriage return and line feed codes. You need ASCII and CRLF for text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files.

PROGRESS
Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

TIME(n)
Specifies the length of time, in units of 30 seconds, the program waits for a response from the host before it sends an error message. Replace n with an integer value in the range from 1 through 99. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, of large block sizes, or for slow communication lines (such as SDLC and ASYNCH), 5 seconds is recommended.

## Examples

The following examples show the command syntax you can use to receive files from your MVS/TSO host to your workstation:

To receive a data set from an MVS/TSO host to the default drive for your workstation session:

**RECEIVE pc.txt g:ds.script ASCII CRLF**

This command sends a data set named **DS.SCRIPT** from your MVS/TSO volume in a host session named **G** to your OS/2 session. It creates or replaces the file on the default drive with the name **PC.TXT**.

To receive a data set from an MVS/TSO host to a drive other than your default drive:

**RECEIVE A:pc.txt g:ds.script ASCII CRLF**

This command sends a data set named **DS.SCRIPT** from your MVS/TSO volume in a host session named **G**. It replaces a file named **PC.TXT** on a diskette in drive A.

To receive a data set from an MVS/TSO host and add it to a workstation file:

**RECEIVE a:pc.txt g:ds.script ASCII CRLF APPEND**

This command sends a data set named **DS.SCRIPT** from your MVS/TSO volume in a host session named **G**. It adds the data set to the end of a file named **PC.TXT** on the diskette in drive A.

To receive a data set from an MVS/TSO host and place it in a subdirectory on your hard disk:

**RECEIVE c:\sd1\pc.txt ds.script ASCII CRLF**

This command sends a data set named **DS.SCRIPT** from your MVS/TSO volume in a host session named **G**. It creates or replaces a file named **PC.TXT** in a subdirectory named **\SD1** on your hard disk.

To receive a data set that has a password from an MVS/TSO host to your default drive:

**RECEIVE A:pc.txt g:ds.script/odyssey8 ASCII CRLF APPEND**

This command sends a data set named **DS.SCRIPT** from your MVS/TSO volume in a host session named **G**. The data set has the password odyssey8. The data set is added to the end of a file named **PC.TXT** on the diskette in drive A.

To receive a member of a partitioned data set from an MVS/TSO host to your OS/2 session:

**RECEIVE c:\sd1\pc.txt g:ds.script (m1) ASCII CRLF**

This command sends a member named **M1** from a partitioned data set named **DS.SCRIPT** in a host session named **G**. The member is placed on your hard disk in a subdirectory named **\SD1**. It replaces or creates a file named **PC.TXT**.

To receive a member of a partitioned data set that has a password to your OS/2 session:

**RECEIVE a:pc.txt g:ds.script (m2)/ili1 ASCII CRLF APPEND**

This command sends a member named **M2** from a partitioned data set named **DS.SCRIPT** in a host session named **G**. The data set has a password of ili1. The member is added to a file named **PC.TXT** on the diskette in drive A.

## Using the CICS SEND Command

Use the following information when sending a file to CICS:

Figure 11-5 shows the command and information you must provide. Enter it as shown (including parentheses), except that you can use either uppercase or lowercase letters.

**Note:** means to insert a space. There must ***not*** be a space between **h:** and **fn**.

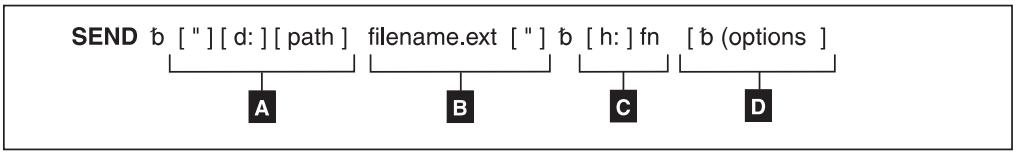


*Figure 11-5. CICS SEND Command Syntax*

A The workstation drive and path of the file to send.

B The name of the workstation file to send.

C The short name of the host session, and the host file name of the file to send.

D Optional changes made to the file during transfer. More than one option can be specified. Valid options are:

ASCII
BINARY
CLEAR
CRLF
NOCLEAR
NOCRLF
PROGRESS
QUIET
TIME n

The parts of the CICS SEND command are:

SEND — The command.

d: — The name of the diskette or hard disk drive where the file is located.

path — The path to the subdirectory that the file is in.

filename.ext — The name of the file to be sent, including the extension.

h: — The short name of the host session where you want to send the file. If you have only one host, this part is optional. The default is session **A**.

fn — The name the file is to have on your CICS disk. You must specify the file name. You can create a new name or use a name that is already on the disk.

(options — These options can be specified:

ASCII Specifies ASCII-to-EBCDIC character translation. The default is ASCII CRLF. You need these control terms for text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files.

**Notes:**

1. CRLF and NOCRLF are mutually exclusive options.
2. BINARY and ASCII are mutually exclusive options.
3. The assumed defaults, if the optional parameters are omitted, are CRLF ASCII.

BINARY
Specifies that the data in the file is binary data. The data can be encrypted, compiled programs, or other data. It is not translated by the host file transfer program but copied unaltered into a temporary storage queue.

CLEAR
Clears the workstation window at the beginning of the file transfer.

CRLF Specifies carriage return and line feed codes in the text file.

NOCLEAR
Suppresses the sending of a Clear command at the beginning of file transfer. This option is required for ISPF command mode.

NOCRLF
Specifies that the workstation file does not consist of logical records delimited by carriage return and line feed characters. No concatenation or splitting of records is performed by the CICS file transfer program.

The file is written into a temporary storage using one item on the queue to represent each inbound data buffer. The items on the CICS temporary storage queue can be of different lengths, but none can be more than 32,767 characters.

PROGRESS
Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

TIME n
Specifies the length of time, in units of 30 seconds, the program waits for a response from the host before it sends an error message. Replace n with an integer value in the range from 1 through 2184. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, large block sizes, or for slow communication lines (such as SDLC and ASYNCH), 3 seconds is recommended. A blank space is required between TIME and n.

## Examples

The following examples show the command syntax you can use to send files from your workstation to your CICS host:

To send a workstation file from your default drive and add it as a new file on your CICS host:

**SEND pc.txt a:cicsfile (ASCII CRLF)**

**Note:** Enter the complete CICS SEND command on one line.

This command sends a workstation file named **PC.TXT** from your default drive on your workstation to your host session **A**. You do not need to provide the workstation drive name if the file you are sending is on the current drive. The command creates a new file named **CICSFILE**.

To send a basic workstation file from a drive other than your default to replace a file on your CICS host:

**SEND a:myprog.exe a:basprog**

This command sends a workstation file named **MYPROG.EXE** from a diskette in drive A to your CICS host in your host session named **A**. It is written to a file named **BASPROG**, replacing any existing file by that name in host session **A**.

## Using the CICS RECEIVE Command

Use the following information when receiving files from CICS:

Figure 11-6 shows the command and information you must provide. Enter it as shown (including parentheses), except that you can use either uppercase or lowercase.

**Note:** ␣ means to insert a space. There must ***not*** be a space between **h:** and **fn**.

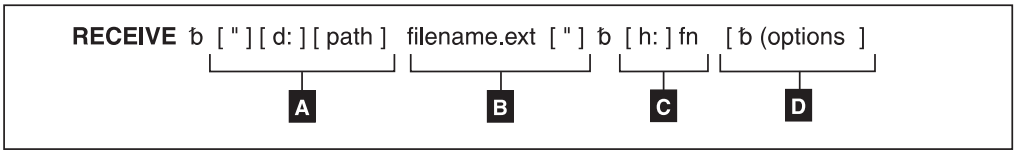


*Figure 11-6. CICS RECEIVE Command Syntax*

A The workstation drive and path where the file is to be received.

B The name of the workstation file.

C The short name of the host session (h:) from which you are receiving the file, and the host file name (fn).

D Optional changes made to the file during transfer. More than one option can be specified. Valid options are:

ASCII
BINARY
CLEAR
CRLF
NOCLEAR
NOCRLF
PROGRESS
QUIET
TIME n

The parts of the CICS RECEIVE command are:

RECEIVE The command.

d: The name of the diskette or hard disk drive where the file is to be received.

path The path to the subdirectory where the file is to be located.

filename.ext The name of the workstation PC file, including the extension. You can create a new name or use a name that is already on your workstation diskette or hard disk. If you use a new name, the file that you receive is added to your diskette or hard disk. If you use the name of an existing file, the file that you receive either replaces or supplements the existing file. Refer to the APPEND option.

h: The short name of the CICS session where the data set is located. If you have only one host, this part is optional. The default session is **A**.

fn The name of the file you want to receive from your CICS host.

(options

These options can be specified:

ASCII Specifies EBCDIC-to-ASCII character translation. The default is ASCII CRLF. You need ASCII and CRLF control terms for text or source files that you want to view or edit, such as SCRIPT files. You do not need them for binary files.

**Notes:**

1. CRLF and NOCRLF are mutually exclusive options.
2. BINARY and ASCII are mutually exclusive options.
3. The assumed defaults, if the optional parameters are omitted, are CRLF ASCII.

BINARY

The data in the file is binary data. The data can be encrypted data, compiled programs, or other data. It is not translated by the host file transfer program but is copied without changes into the workstation file.

CLEAR

Clears the workstation window at the beginning of the file transfer.

CRLF Specifies the use of the carriage return and line feed codes.

NOCLEAR

Suppresses the sending of a Clear command at the beginning of file transfer. This option is required for ISPF command mode.

NOCRLF

Specifies that the host computer file does not consist of logical records. The items in the temporary storage queue are sent in order and concatenated in your workstation into a single string of data.

PROGRESS

Shows a message indicating that the file transfer is in progress or has ended. Such messages do not show the current transferred bytes.

QUIET Does not show any messages.

TIME n

Specifies the length of time, in units of 30 seconds, the program waits for a response from the host before it sends an error message. Replace n with an integer value in the range from 1 through 2184. The default is 1. To avoid a premature error message, specify an adequate value. In cases of large packet sizes, of large block sizes, or for slow communication lines (such as SDLC and ASYNCH), 3 seconds is recommended. A blank space is required between TIME and n.

### Examples

The following examples show the command syntax you can use to receive files from your CICS host to your workstation:

To receive a file from your CICS host to your default drive for a workstation session:

**RECEIVE pc.txt A:cicsfile (ASCII CRLF)**

This command sends a file named **CICSFILE** from your CICS host in session **A** to your workstation session. It adds the file to your default drive (diskette or hard disk) with the name **PC.TXT**.

To receive a basic file from your CICS host and replace a file on a drive other than your default:

**RECEIVE a:myprog.exe a:myprog**

This command sends a file named **MYPROG** from your CICS host in session **A** to a drive other than the default for your workstation session. It replaces a file named **MYPROG.EXE** on a diskette in drive A.

## Configuring File-Transfer Code Translation

When you transfer a file between the host and the workstation using the ASCII option, the host-system file-transfer program performs translation from EBCDIC to ASCII or vice versa, according to the host and workstation code pages specified during PC/3270 configuration. However, you might want to use a different translation from that supplied by IBM. For the details, refer to Chapter 4.

# Chapter 12. Considerations for PC/3270 Installation and Use

This chapter provides technical information, considerations, and restrictions for installing and using PC/3270.

## IEEE 802.2 Support

LAN Adapter and Protocol Support (LAPS) is a prerequisite for Personal Communications. IBM Network Transport Services/2 (NTS/2), which is included in this package, provides support for IBM LAN adapters and a wide range of certified IBM LAN adapters by other manufacturers for the following types of LANs:

Token-Ring Network
IBM PC Network
Ethernet (ETHERAND) Network
IBM 3174 Peer Communications Network

If one of the following products has been installed on your workstation, an acceptable version of LAPS might already be available:

Multiple Protocol Transport Services (MPTS), which is included in this package
IBM TCP/IP for OS/2
IBM LAN Server (or LAN Requester)

## Host Session Window Operations

This section provides information about host session window operations.

## Cursor Color

PC/3270 assigns white as the cursor color by default and mixes the background color (if it exists) with an exclusively-ORed operation. If you want to change this default cursor color assignment, change the **PCSWIN.INI** file and insert the following line into the **[Session]** section:

```
[Session]
CursorColor=<red-value> <green-value> <blue-value>
```

where <red-value>, <green-value>, and <blue-value> are integers from 0 to 255 to specify the color intensity for each color primitive respectively; 0 0 0 for black color, and 255 255 255 for white.

## IBM Custom Color (Display Setup - Palette)

Even if you set the IBM Custom Color setting to **Yes**, the color palette will be the same as the OS/2 system palette, regardless of which display adapter you have. If you want to use the custom color palette, which provides better scaling of the color range, add the following lines in your \pcomos2\private\pcswin.ini file:

```
[Session]
TrueColor=Y
```

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**Note:** The custom color palette has a better appearance than the system palette, but it might cause colors to flash when you start communications, and it might change the window focus to other Presentation Manager applications.

## Releasing Insertion Mode with the Attention Key

To release insertion mode after execution of the Attention key, add the following parameter to the **[Keyboard]** section of the workstation profile (***.WS**):

```
[Keyboard]
ResetInsertByAttn=Y                <- Added.
```

## Scroll Bar

While you select **Font** from the Appearance pull-down menu in the session window and select **Fixed Size** from the Select Display Font dialog box, if you specify **With Scroll-Bar** in the Window Setup dialog box, the entire operator information area might not appear on the screen, because the session window size is not permitted to be larger than the screen size.

## Scroll Lock Key

When the Scroll Lock keyboard indicator is turned on, the cursor movement keys, and **Page Up** and **Page Down** keys are used to scroll windows only when you specify **With Scroll-Bar** in the Window Setup dialog box. If you specify **Without Scroll-Bar**, you will not use the **Scroll Lock** key because the entire screen is displayed; for example, cursor movement keys in Scroll Lock mode do not do anything.

## PC/3270 Screen Size Control

Although you can specify the screen size of the 3270 session in PC/3270 configuration, the final screen is determined by the host according to the SNA BIND negotiation, which is described below in detail.

Sometimes you want to use your configured screen size when it is difficult for you to ask the host VTAM table modification. This section gives you a hint for this purpose. (The following method will satisfy your requirement, but because it violates SNA rules, some applications referring to the VTAM table only might not work.)

You need to modify your workstation profile (***.WS**) to insert the following line into the **[LU]** section:

```
[LU]
InfScreenSize=Y
```

Personal Communications processes byte 24 of the host BIND image correctly and according to the SNA rules. Byte 24 is the last 2 bytes of

PSERVIC=X' 28 3 ' ( 3 in this case)

in the log mode.

If byte 24 is X'03', the default screen size is 24 x 80, and the alternate is what the USER configured with PC/3270.

If byte 24 is X'00' or X'02', the default and alternates screen sizes are 24 x 80.

If byte 24 is X'7E' or X'7F', bytes 20–23 in the BIND control the default and alternate screen sizes.

If you have X'03' in the BIND image, you can customize whatever screen size you want, and the host will query Personal Communications and use the alternate screen size.

The following table shows the details of the BIND image processing:

| | Byte in BIND by Host ==> | | | | | Result(Screen size) | |
|---|---|---|---|---|---|---|---|
| | 24 | 2 | 21 | 22 | 23 | Default | Alternate |
| | == | == | == | == | == | ======= | ========= |
| a) | -- | -- | -- | -- | ==> | 24 x 8 | 24 x 8 |
| b) | 2 | -- | -- | -- | ==> | 24 x 8 | 24 x 8 |
| c) | 3 | -- | -- | -- | ==> | 24 x 8 | R x C |
| d) | 7E | Rd | Cd | -- | ==> | Rd x Cd | Rd x Cd |
| e) | 7F | Rd | Cd | Ra | Ca ==> | Rd x Cd | Ra x Ca |

Legend: RxC: Screen Size defined by PC/327 3. configuration
(R,C) = (24,8 ) , (32,8 ) , (43,8 ) or (27,132)

Rd: Rows in the default screen size mode
Cd: Columns in the default screen size mode
(Rd,Cd) = (24,8 ) , (32,8 ) , (43,8 ) or (27,132)
Rd Cd <= R C

Ra: Rows in the alternate screen size mode
Ca: Columns in the alternate screen size mode
(Ra,Ca) = (24,8 ) , (32,8 ) , (43,8 ) or (27,132)
Ra Ca <= R C

PC/3270 supports query replies. Make sure that the query reply of Implicit Partition returns the final screen size upon receipt of a BIND command.

## Customizing a Display Translation Table

PC/3270 displays the host EBCDIC character by using a workstation (ASCII) graphic symbol so that the character defined by S/390 EBCDIC host code page is displayed correctly by using the same graphic symbol defined by ASCII. However, you might need your own original translation, because your host or workstation application is not designed to use the standard translation.

You can use your original translation table if you refer to the following procedure as an example. But you must keep in mind that the data integrity caused by the user-defined table is your responsibility.

The following example shows how to remap left and right brackets.

1. Stop all PC/3270 sessions that are running.
2. Modify the PC/3270 workstation profile (***.WS**).

   ```
   [Translation]
   IBMDefaultView=N
   DefaultView=C:\PCOMOS2\PRIVATE\BRACKET.XLT
   ```

3. Create the display translation table file (***.XLT**). For this example, **C:\PCOMOS2\PRIVATE\BRACKET.XLT** should be created.

   ```
   [Profile]
   id=XLT
   Description=User-defined Display Translation Table

   [Option]
   Replace=Y

   [SB Xlate]
   ; EBCDIC=ASCII
   ; The next line displays EBCDIC X'AD' as
   ; an ASCII X'5B' (left bracket)
   AD=5B
   ; The next line displays EBCDIC X'BD' as
   ; an ASCII X'5D' (right bracket)
   BD=5D
   ```

4. Create your own keyboard layout (***.KMP**) if you need to enter your new left and right brackets graphic symbols:

   ```
   [KEYBOARD]
   KEY27=ansi dd
   KEY28=ansi a8
   ```

   Where the right-hand side should be lowercase characters and ASCII X'dd' is translated into EBCDIC X'ad' by PC/3270, and then displayed as '[' by the table created in step 3, and so on.

5. Select the session icon corresponding to the modified workstation profile.

# Edit Function

This section provides information about edit function restrictions for specific connectivity types.

## ■ Edit Function Restrictions at CUT Attachment

When you use the CUT attachment, you can use only the **Copy** and **CopyAppend** functions of the edit functions supplied by the menu bar in the display session window.

## ■ Edit Function Restrictions at Home3270 Attachment

When this system is connected to the host system by Home3270 attachment, the following edit functions supplied by the session window are restricted.

**Undo function**

You cannot execute the **Undo** function after using the **Cut**, **Paste**, **PasteNext**, or **Clear** functions, because these functions modify display areas in the protocol converter.

**Cut and Clear functions**

When an area to be cut or cleared contains a field attribute character or protected field, or each line in that area ends at the end of an unprotected field, the following things might happen:

Characters in an unprotected field outside the area to be cut or cleared might also be cleared.

An alarm might sound.

The cursor might not appear at the initial position.

When you execute the Cut or Clear function, specify only the minimum area required (for example, some words or one field in one line); then confirm that the frame exists in an unprotected field.

**Paste and PasteNext functions**

When the area to be pasted contains a field attribute character or protected field, or the end of the paste area on each line is positioned at the end of an unprotected field, the following things might happen:

The character to be pasted might not be written to the expected position.

An alarm might sound.

The cursor might not appear at the initial position.

When you use the paste function, paste the shortest character string possible (for example, a character string, but excluding CRLF); then confirm that the area to be pasted is in an unprotected field.

### Pasting Data to Lotus 1-2-3 from the Clipboard

You can use the Clipboard to copy data from a Personal Communications session to Lotus 1-2-3 for OS/2, but it will not divided into cells. If you want to paste the data into cells, add the following lines to the profile (*.WS) for the session:

```
[EDIT]
CelledText=Y
```

**Note:** If you paste data into another application later, it might appear in a different format.

## File Transfer from the OS/2 Command Prompt

**Note:** For details, refer to the *Information Notebook* or Chapter 11.

### ■ Host File Name and Reserved Words

You should not use the following words as a VM file name or file type, as an MVS data set name, or as a CICS file name, because they are reserved for use as command options. However, if you must use them for files, add a '\' (backslash), as a separate word, immediately after the file name and so on, even if you do not specify any options.

ASCII, APPEND, TIME, CLEAR, NOCLEAR, SILENT, QUIET, PROGRESS, JISCII, SO, NOSO, BLANK, USER

### ■ Changing the Packet Size When Import/Export Is Idle

When Import/Export is idle, select **Setup** from the Transfer pull-down menu. When you change the packet size on the Miscellaneous Settings dialog box, end Import/Export; then rerun it.

### ■ WAIT Option for Multiple File Transfer

If multiple file transfers do not succeed, insert the following statement into the **[Transfer]** section of your ***.WS** file:

```
[Transfer]
WAIT=1
```

This parameter causes a 1000-msec (1 sec) delay between file transfers. If this does not help, you might need to increase the value further.

### ■ NOTRUNC and BLANK Options for the Host File Transfer Program

If you want to add trailing blanks (spaces) to complete the logical record length for each record when downloading a text file, you can use the following options in **Additional Options** edit field of the Transfer-Type Definition dialog box.

NOTRUNC for VM/CMS
NOTRUNC for MVS/TSO
BLANK for CICS

When you download a file from the host to the workstation using the CRLF option, trailing blanks are automatically deleted from the end of each record to save disk space and download time. If you do not want to have the trailing blanks deleted, you can specify the NOTRUNC option. The NOTRUNC option only takes effect when the CRLF option is also specified.

**Note:** The NOTRUNC option is available when you use the IND$FILE program on VM/CMS or MVS/TSO to download the files if the appropriate PTF has been applied to the host program, as follows:

VM/CMS: UR34797 or UR07750
MVS/TSO: UR35492 or UR07751

To verify the current PTF level, enter the following line from a display session:

**IND$FILE ?**

where: the character $ might vary from country to country.

## Graphic Functions

This section provides information, restrictions, and considerations for graphic functions.

### ■ Graphics Protocols

Personal Communications allows you to use host graphics applications, such as GDDM and others. Two types of graphics are supported:

Vector
Programmed symbols

Two protocols are supported for vector graphics:

Advanced
Native

See Configuring Graphics in the online helps for a description of these protocols and to learn how to configure your sessions for graphics.

The following functions ar supported:

Multiple mixed alphanumeric and graphics host sessions
Use of the normal OS/2 printing and plotting facilities
Creation of PIF (Picture Interchange Format) files
Clipping graphics data into the clipboard

## Vector Graphics

Vector graphics are computer graphics in which display images are generated from display commands and coordinate data. Personal Communications provides vector graphics support for the OS/2-Link (advanced) or the 3179G or GOCA (native) protocols. Choose the protocol that is appropriate for your host applications.

***Advanced Protocol:*** Use the advanced protocol when you have GDDM Version 2 Release 3 or later and are using any of the following operating system:

MVS
VSE
VM/SP
VM/XA SP

**Note:** The advanced protocol is not supported by the CICS pseudo-conversational mode with versions of GDDM earlier than Version 3, and not by IMS/VS at all. It is, however, supported by the CICS pseudo-conversational mode with GDDM Version 3 Release 1 or later.

The advanced protocol is equivalent to that used by OS/2-Link, so it supports the same subsystems. However, no download of code from the host system is required for Personal Communications because all the OS/2-Link graphics modules are integrated into the program.

***Native Protocol:*** You should choose the native protocol when you intend to use older GDDM versions or non-GDDM host-graphics applications, such as those originally intended for use on 3270 nonprogrammable terminals as the 3179G, 3192G or 3472G. The native protocol also allows IMS/VS users to display GDDM graphics.

**Note:** A 3174 controller requires a terminal to respond within a certain time; if it does not, a machine check 207 message appears. If you are using a coaxial attachment for graphics in native mode, this can happen for various reasons, such as the complexity of the graphics drawing-orders or the speed of your workstation. In this case, you should change to advanced mode.

## Programmed Symbols

Raster graphics are displayed with programmed symbols, which are downloaded to your workstation. Personal Communications support up to six sets (PSA through PSF) of triple-plane and multiple-color programmed symbols.

You should use programmed symbols as the graphics type when you intend to use host graphics applications originally written for the 3279G terminal.

Graphics applications use one or both of these methods to display graphical screens. Personal Communications allows you to enable or disable support for vector graphics and programmed symbols. Choose the type of support that our host applications require.

**Note:** If you use the OS2-Link (advanced) protocol under the GDDM program, do not choose programmed symbols. Also, do not choose programmed symbols when you use the OS2-Link protocol with other applications.

***Enabling Programmed Symbol Sets:*** PC/3270 provides up to six sets of triple-plane programmed symbols, depending on the type of graphics support that you choose. By default:

Two sets (PSA and PSB) of single-plane programmed symbols are usable if you choose both programmed symbols and vector graphics.

Three sets (PSA, PSB, and PSE) of single-plane programmed symbols and three sets (PSC, PSD, and PSF) of triple-plane programmed symbols are usable if you choose programmed symbols, but not vector graphics.

You can change the number of programmed-symbol sets and triple or single planes available for each programmed-symbol set by editing the [3270] section of the workstation profile:

```
PSSPlanes=xxxxxx
```

Each *x* represents a number (0, 1, or 3) that indicates how many planes are to be available for each set; the first column indicates the number of planes for PSA, the second column for PSB, and so on. For example, to enable six triple-plane programmed symbol sets, enter the following:

```
PSSPlanes=333333
```

To enable two single-plane and two triple-plane sets, enter the following:

```
PSSPlanes=1133
```

## ■ How to Handle Errors Caused by Insufficient Memory

Graphic execution module PCSGRP.DLL uses a large amount of global memory for graphic drawing or printing. When the workstation has insufficient installed memory, results might not be obtained correctly. For example, an area might not be clearly shaded.

In this case, increase the amount of installed workstation memory by at least 1 MB. For host graphic printing, add 1 more megabyte.

Memory might have to be further extended depending on the host graphic application and printer driver used.

## ■ Drawing Buffer Size

The drawing buffer size varies depending on the contents set for **Redraw** of a graphic function.

To set **Redraw**, select **Display Setup** from the Appearance pull-down menu in the session window. On the continuously displayed Display Setup dialog box, select **Graphic** from **Category**.

Selecting **Host** from the optional items of **Redraw** requires no buffer, because the redraw is not executed.

If you select **Retained**, the graphic execution module stores all redrawing data into a buffer. Such a buffer is called a *retained buffer*. The buffer size varies depending on the complexity of the graphic data from an application program.

**Example:**

| | |
|---|---|
| Simple table | 10 KB to 20 KB |
| Complicated graphic image | 200 KB to 300 KB |

When you select **Bitmap** to set **Redraw**, the buffer size is the same as the sum of the retained buffer size and compatible bit-map size.

Following are examples for bit-map size:

(Height) x (Width) x (Number of planes) x (Bits/Pixel) / 8 bytes

**Example:**

When you select a 7x12 font for a VGA 16-Color Display Model 2 (24x80), the bit-map size is as follows:

Bit-map size = (7x80) x (12x24) x 1 x 4 / 8 = 80 KB

When you select a 12x20 font for an IBM PS/55 High-Resolution 256-Color Display Model 2, the bit-map size is as follows:

Bit-map size = (12x80) x (20x24) x 1 x 8 / 8 = 460 KB

## ■ Using Bit Maps for Drawing

The graphic execution module uses a bit map compatible with the display unit to draw an area instruction in overpaint mode. An image instruction requires one plane bit map.

(Buffer for area) = (area width) x (area height) x
(number of planes) x (bits/pixel) / 8

(Image buffer) = (image width) x (image height) / 8

## ■ Printing Graphics

You can print or plot graphics by using the normal OS/2 print support. There are two ways to do this: .

1. When using advanced protocol, by using the GDDM (or other host program) print capability.
2. By using the Print Graphics menu-bar command (from the File menu).

If you have an existing host program that opens a printer, you can specify your workstation printer or plotter instead by putting a nickname statement in you GDDM nickname file (or the equivalent, if you are not using GDDM). For example, for a program that contains a DSOPEN for a printer with the name GRAPRINT specified in its name list, the nickname statement is:

```
ADMMNICK
FAM= ,NAME=GRAPRINT,TOFAM=1,TONAME=( ,PCSWGPRT)
```

where *PCSWGPRT* is the device name of the printer or plotter.

Another way is for your GDDM program to send graphics to a workstation printer or plotter. The program addresses the printer as a Family-1 auxiliary device with a device name of PCSWGPRT:

```
DECLARE PROC_LIST(1) FIXED BINARY(31);
DECLARE N_LIST(2) CHARACTER(8);

N_LIST(1) = ' '
N_LIST(2) = 'PCSWGPRT';

CALL  DSOPEN(97,1,' ', ,PROC_LIST,2,N_LIST);

CALL  DSUSE(1,97);
```

When you specify a device name as *PCSWGPRT*, the printer select in the Printer Setup window is used.

You can also use other printers. To do this, you specify a printer object name (the eight-character physical name of the printer object).

GDDM alphanumerics (ASxxx and MSxxx calls) are supported by printers or plotters, with the following field and character attributes:

Color
Outlining
Reverse video
Transparency
Underscore

**Note:** The appearance of the output depends on the device driver for each printer or plotter.

## ■ Graphic Print Buffer

The retained buffer must be used for printing. The retained buffer is the same size as that used for redrawing. This is also applied when you specify **Bitmap** for **Redraw** on the Display Setup dialog box.

## ■ Editing Graphic Data

An editing operation causes the graphic execution module to copy the graphic data as a bit map and metafile to the clipboard. The graphic data can be executed only copying.

## ■ Printer Fonts

The printer driver can handle two font sets, the device font and system font. The device font is hardware fonts built into the printer.

The system fonts are System (without brackets) or other software fonts.

## ■ Plotter

Because a plotter does not support a raster, the following restrictions are imposed on drawing. A plotter should be used for figures and tables that use mainly lines.

No shading is supported.
Some shading patterns cannot be distinguished.
Image order drawing requires much time and the final printout is of poor quality.
The OR and exclusive OR are not correctly reflected.

## ■ Hole in the Screen Caused by Clearing a Graphic Character

When a character overlaps a graphic image, the graphic image is cleared at the position where the character is to be displayed. When you enter a null character or space having the transparent attribute at the position where a graphic image is displayed, the graphic image in that character cell is not cleared.

If you select **Host** or **Retained** to set **Redraw** on the Display Setup dialog box, when characters in a graphic image are cleared, a hole appears in the graphic area. This is because these two modes do not have a bit-map image, and partial redrawing cannot be performed on the screen.

If you select **Bitmap** mode as **Redraw Graphics**, you can find no hole on the graphic region by the application that overrides any alphanumeric characters (as well as NULL and SPACE) on the graphic image.

To restore the screen, perform either of the following actions:

Press **PA3** to have the application program redraw the screen.

Minimize and restore the graphic image retained in retained mode; then redraw it or select bit-map mode.

**Note:** When you change the setting of **Redraw** in the Display Setup dialog box, the set contents are valid from the next drawing.

## ■ Considerations for Configuring a Character Cell

If you use a host application that has a fixed font size, select **Fixed** for the **Cell Type** in the Configure Graphics dialog box and set the display space size of the session to that of the application. Otherwise, parts of the pictures might be missing or the characters might not fit with the graphics. In this case, unmatched font size of the actual window might make the figure appear warped because of the difference of horizontal-vertical ratio. Select the font in the **Font** of the Appearance pull-down menu to be the same size as the **Cell Size** selected in the Configure Graphics dialog box. If you cannot, select a font size with the same horizontal-vertical ratio.

### ■ Graphic Cursor

The graphic cursor is not supported in systems without a mouse.

## API Considerations

This section describes factors you should consider if you plan to use PC/3270 application programming interfaces (APIs).

### ■ DOS Mode EHLLAPI

Use this function to call PC/3270 (for OS/2) EHLLAPI from EHLLAPI user applications that are created for PC/3270 (for DOS) on the OS/2 DOS box or created for PC/3270 (for Windows) on WIN-OS2. To use this function, specify the DOS mode EHLLAPI available in **API setting**. Then EHLLAPI Virtual Device Drive (VDD) will be added to **CONFIG.SYS**.

To use this function on WIN-OS2, copy the file **PCSHLL.DLL** in the directory, in which OS/2 and PC/3270 are installed, to the place that the environment valuable **PATH=** of WIN-OS2 specified (in **AUTOEXEC.BAT**).

**Note:** **PCSHLL.DLL** is a Windows dynamic link library (DLL), which is a interface module between your EHLLAPI application for PC/3270 and the EHLLAPI VDD.

To use **SEND FILE (90)** or **RECEIVE FILE (91)**, you have to specify the workstation file name with drive and path name.

### ■ Home3270 and HLLAPI Applications

The HLLAPI functions for the Home3270 attachment are slightly different than those for the other attachments. As a result of these differences, you need to change the EHLLAPI code page.

To do this, complete these steps:

1. Select **File** from the menu bar and then select **API Settings**.
2. Select **819** from the Code Page list and then select **OK**.

For a description of the HLLAPI functions, refer to the *Personal Communications/3270 Programmer's Guide for Entry-Level DOS Mode*.

## Print Processing

This section provides information, restrictions, and considerations for print processing.

### ■ Spooler

You have to turn the OS/2 spooler on and use it.

### ■ Using a Printer in a Non-SNA Coaxial Attachment

For the non-SNA coaxial attachment, PC/3270 regards the print job within 30 seconds after the previous one as a continuous job with the previous one. PC/3270 determines the job end artificially by the timeout value, because it is impossible to determine the job end automatically by the protocol of the non-SNA attachment.

You can change the standard timeout value for adapting to your environment. Specify the following parameter in the **[CNDFT]** section of the workstation profile (***.WS**):

**[CNDFT]**
**PrtTimeOut=**nn

**Note:** *nn* is a decimal value of the timeout in seconds.

## ■ Print Job Control by Using SNA Timeout

PC/3270 treats the data packet, which begins with an SNA Begin Bracket (BB) and ends with an SNA End Bracket (EB), as one job, and spools to the print spooler. However, some applications might not use SNA BB and EB appropriately, and an unexpected page eject might sometimes occur. This section describes two timeout controls for you to customize your host print job to fit your environment.

***Concatenation of Multiple Print Jobs to a Single Print Job:*** When a new print job comes from the host before expiring the timer specified by the workstation profile, the print job is concatenated to the previous one, and they are regarded as a single print job. You can change the timer value by specifying the following parameter in the **[printers]** section of the workstation profile (***.WS**):

**[printers]**
**ConcatinateTime=***nn*

**Note:** *nn* is as follows, and its unit is one second:

| | |
|---|---|
| **0:** | No concatenation of print jobs |
| **1 – 32767:** | Concatenation of print jobs by this timeout value |

When the non-SNA attachment is used, the timer should not be specified on the workstation profile.

***Termination of a Print Job:*** When an end of a print job (SNA End of Bracket) does not come from the host until the timer specified by the workstation profile is expired, the print job is automatically terminated. You can change the timer value by specifying the following parameter in the **[printers]** section of the workstation profile (***.WS**):

**[printers]**
**TerminateTime=**nn

**Note:** *nn* is as follows, and its unit is one second:

| | |
|---|---|
| **0:** | No automatic termination of a print job |
| **1 – 32767:** | Automatic termination of a print job by this timeout value |

When the non-SNA attachment is used, the timer should not be specified on the workstation profile.

## ■ SCS TRN Command (LU 1)

When you use printers with the OS/2 printer drivers, you can change the operation of the **SCS TRN** command by adding the following specification to the **[printers]** section of the workstation profile (***.WS**):

| | |
|---|---|
| **ATRN=Y** | Transfers data of the SCS TRN command to the printer driver without conversion. |
| **ATRN=N** | Converts data of the SCS TRN command and transfers the result to the printer device driver. |

When ATRN=Y and ATRN=N are specified, host codes 00H to 3FH are converted to hyphens (-) or characters specified with the SCS SGEA command. The default value is as follows:

```
ATRN=Y
```

When you use PDT, you can change it to the similar setting. To change the PDT file, add one of the following lines to PDF.

```
TRANSPARENT_=Y      (corresponds to ATRN=Y)
TRANSPARENT_=N      (corresponds to ATRN=N)
```

### ■ Ignoring Blank Pages

When you cannot print a blank page correctly, check the following things:

Some printers ignore a blank page if so specified with the **Printer Setup** option (or setting the printers DIP switches). Check whether the printer is set to enable this option.

Some printer drivers ignore a blank page if it is set with the **Printer Driver Setup** option. Check whether this option is supported by the printer driver.

Even if IGNORE_FORM_FEED_AT_FIRST_POS is set to NO, some printers ignore FF at the first position because of hardware specifications.

### ■ Extra Blank Page When Using a PDT

When you are printing in PDT mode and a host print job ends with a form feed (FF), an extra blank page is ejected; this is because PDT files are written to send an FF at the end of each job.

If your host print jobs always end with an FF, you can suppress the extra blank page by removing the FF from the END_JOB definition in the PDF. To do this, recompile the PDF to create a new PDT.

If you use HPLJII.PDT and you find an extra blank page at the end of each print job, change the PDT to HPLJII2.PDT, which is available on the Personal Communications diskettes.

### ■ CPI/LPI of Device Font

When the printer driver cannot print the device font for the specified CPI/LPI, data can be printed by another CPI/LPI.

### ■ Printing Reverse-Display Characters with a Device Font

Most printer drivers do not support reverse-display character printing with the device font.

### ■ Printable Area

Characters might not be printed over the entire paper depending on the printer driver used. When using a printer driver that allows you to set the margins, specify the minimum margins to maximize the printable area.

### ■ SVF Control Code

If the maximum print line (MPL) is shorter than the paper size in the SVF control code, when the printing position reaches MPL, a page feed is performed.

### ■ Printing Using PDT Mode

Printing using the PDT file is restricted as follows:

A graphic image cannot be printed.

No APL character can be printed.

The PostScript** printer is not supported. (There is no PDF file for the PostScript printer.)

## Miscellaneous Considerations

This section lists miscellaneous restrictions.

## 3270 Data Stream

When the structure field is the last field in the transmission, PC/3270 might not allow the host application to transmit any structure field whose length is zero.

## Ignoring Write Control Character (WCC) Start Print

Some TCP/IP gateways send WCC with Start Print even though it was not specified. When this occurs, PC/3270 prints the display session incorrectly.

To avoid this error, add the following lines to your workstation profile:

```
[LT]
IgnoreWCCStartPrint=Yes
```

## Performance Considerations for SNA Connections

If your workstation is connected to a 3745 Communication Controller that has a capability of exchange identification (format-3) processing, you can efficiently transfer data between your workstation and the host system by changing the transmission buffer.

**PIU size**

The default value is 265, but you can expand it up to a larger value that is allowed by your host system.

**Packet size for File Transfer**

The default value is 2500, but you can expand this to a larger value.

For instance, 12,288 is recommended for 802.2 Token Ring connections. The valid value for packet size depends on your host/network environment.

**Packet size for ALMCOPY (3270 only)**

The default value is 2500, but you can expand this to a larger value.

For instance, 12,288 is recommended for 802.2 Token Ring connections.

## FILE Parameter for TCP/IP Connections

Check your TCP/IP documentation to ensure that the value of the **FILES** parameter in your **CONFIG.SYS** file is sufficient. If this value is too low, AnyNet error message ANY0012E is issued. This message indicates that the local resource limit has been exceeded because no more sockets are available for creating connections or sending datagrams.

Considerations and restrictions on use of the PC/3270, and supplementary information other than the items described in this chapter are stored on the installation diskette as a file. To access this information, refer to **README.INF**, which is saved in the directory where PC/3270 is installed, or double-click on the **Readme** icon.

# Personal Communications AS/400

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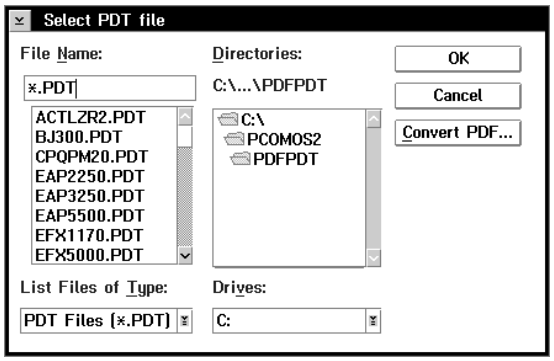
# Chapter 13. Building PC400 Printer Definition Tables (PDTs)

This chapter explains how to create and change the printer definition table (PDT) used for PC400. The PDT is created by converting the printer definition file (PDF), which defines how characters and control codes are sent to the printer and how printer output is formatted. You can create a PDF by using a text editor that produces an ASCII file or by modifying one of the PDFs provided by PC400. All PDFs have the extension **.PDF**.

## Customizing the PDT

To customize the PDT:

1. Select **File** from the menu bar of the workstation window.
2. Select **Printer Setup** from the File pull-down menu. The Printer Setup window appears.
3. Select the **Use PDT** check box and click on **Select PDT**. The Select PDT File window appears:




4. Select **Convert PDF**.
5. Select the PDF to be converted from the list in the Convert PDF to PDT window; then select **Convert**. After the file has been converted, control is returned to the Convert PDF to PDT window.
6. Select **Close**. Control is returned to the Select PDT File window and the converted PDT file is listed.
7. Select the PDT file; then select **OK**.
8. Select **OK** on the Printer Setup window.

   After printer setup is complete, the Printer Setup window is closed.

## PDF Format

A PDF consists of a ***macro definitions section*** and a ***definitions section***.

In the ***macro definitions section***, you can assign a name (macro name) to a sequence of hexadecimal numbers, decimal numbers, or ASCII characters. This name can be referred to from within the definitions section, which follows the macro definitions section. The macro definitions section must start with a BEGIN_MACROS statement and end with an END_MACROS statement. The left part of the statement is

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the macro name assigned, and the right part of the statement is the value referred to by that macro name.

In the ***definitions section***, the left side of each statement contains the name of a character or control command (field name). The right side of each statement contains hexadecimal numbers, decimal numbers, ASCII characters, or predefined macro names that define the character or the control codes sent to a printer.

Different printer manuals define printer control strings in different ways. Some printer manuals describe control sequences in hexadecimal, whereas others use such symbols as 'esc J1 K'. You can use either format and define macros to make the file more readable. In the macro definitions section and the definitions section of a PDF, the following things can be specified to the right of each statement:

A single character, which is treated as an ASCII value
Two digits, which are treated as a hexadecimal number
Three or more digits, which are treated as a decimal number
A predefined macro, which is expanded by the printer table compiler

If you leave the right side of a statement blank or if you delete it, the character or the control code is interpreted as a null string. If a character or a control code is defined more than once in a file, the last definition is used. If an error is detected in a statement, the printer table compiler ignores the statement and proceeds to the next statement.

After you have created your PDF, convert it to a PDT by using the printer table compiler. The resulting file has a **.PDT** extension.

The /* symbol indicates the beginning of a comment. The */ symbol indicates the end of a comment. A comment can be placed anywhere within a PDF. It is ignored by the printer table compiler.

A macro definition cannot contain another macro definition.

## Example of PDFs

The PC400 distribution diskette contains the following PDFs:

| | | |
|---|---|---|
| ACTLZR2.PDF | HPLJII.PDF | IBM5182.PDF |
| BJ300.PDF | HPLJIII.PDF | IBM5201.PDF |
| CPQPM20.PDF | HPLJIIID.PDF | IBM5202.PDF |
| EAP2250.PDF | HPLJ4.PDF | IBM5216.PDF |
| EAP3250.PDF | IBM3812.PDF | IBM5223.PDF |
| EAP5500.PDF | IBM3816.PDF | LBP4.PDF |
| EFX850.PDF | IBM38521.PDF | LQ870.PDF |
| EFX1170.PDF | IBM38522.PDF | NEC6300.PDF |
| EFX5000.PDF | IBM4019.PDF | PANLBP4.PDF |
| ELQ860.PDF | IBM4070.PDF | PANLBP5.PDF |
| ELQ1070.PDF | IBM4070E.PDF | PAN1123.PDF |
| ELQ2550.PDF | IBM4072.PDF | PAN1124.PDF |
| ELQ510.PDF | IBM4201.PDF | PAN1180.PDF |
| ELX810.PDF | IBM4202.PDF | PAN1695.PDF |
| EPLPCL4.PDF | IBM4207.PDF | PAN2123.PDF |
| EPLPCL5.PDF | IBM4208.PDF | PAN2124.PDF |
| ESQ1170.PDF | IBM4212.PDF | PAN2180.PDF |
| HPDJ550C.PDF | IBM4226.PDF | PAN2624.PDF |
| HPDSKJT.PDF | IBM5152.PDF | |

The PDFs contained in the PC400 installation diskette can be used as is. However, you might want to change the definitions of some fields. To do so, copy an existing PDF, modify it, and then convert it to a new PDT file.

Do not attempt to change the statements in a field for which modification is specifically prohibited. If you use a PDT file created according to a changed PDF, the results of printing cannot be guaranteed.

## PDF Field Names

The following table lists the field names of the PDFs, together with their meanings:

*Table 13-1 (Page 1 of 5). PDF Field Names*

| Field Name | Meaning | Remarks |
|---|---|---|
| MAXIMUM_PAGE_LENGTH | Default multiple page length. | |
| MAXIMUM_PRINT_POSITION | Default multiple print position. | |
| DEFAULT_CPI? | Default characters per inch. | |
| DEFAULT_LPI? | Default lines per inch. | |
| COMPRESS_LINE_SPACING? | Specifies whether to print a line containing only space characters or nonprint characters. | |
| FORM_FEED_ANY_POSITION? | Specifies whether to validate the FF control code on the first line. | Do not change this field. |
| OVERRIDE_FORMATTED_PRINT? | Specifies whether to print NULL characters as blanks. | Do not change this field. |
| HORIZONTAL_PEL | FORWARD _HORIZONTAL _SKIP length unit | |
| VERTICAL_PEL | FORWARD _VERTICAL _SKIP length unit | |
| IMAGE_HORIZONTAL_PEL | IMAGE_TRANSMISSION horizontal length unit | |
| IMAGE_VERTICAL_PEL | IMAGE_TRANSMISSION vertical length unit | |
| LINE_SPACING_RATIO | SET_VARIABLE_LINE_DENSITY length unit | |
| PAGE_LENGTH_TYPE? | SET_PAGE _LENGTH page length parameter type | |
| FIRST_LEFT_POSITION | Distance from the left paper edge | |
| FIRST_TOP_POSITION | Distance from the top paper edge | |

*Table 13-1 (Page 2 of 5). PDF Field Names*

| Field Name | Meaning | Remarks |
|---|---|---|
| DRAWER1_ORIENTATION | Default page orientation for drawer 1 | |
| DRAWER2_ORIENTATION | Default page orientation for drawer 2 | |
| AUTOMATIC_ORIENTATION | Specifies whether to calculate the page orientation. | |
| START_JOB | Printer control code sent to a printer to start printing | If the control code specifying LPI/CPI is defined, also change DEFAULT_CPI, DEFAULT_LPI. |
| END_JOB | Printer control code sent to a printer when printing ends | |
| BACKSPACE | Backspace control code | |
| BEL | Bell control code | |
| CARRIAGE_RETURN | Carriage return control code | |
| NEW_LINE | New line (CRLF) control code | |
| LINE_FEED | New line (CRLF) control code | |
| FORM_FEED | Form feed (FF) control code | |
| HORIZONTAL_TAB | Horizontal tab control code | |
| VERTICAL_TAB | Vertical tab control code | |
| DESELECT | Device control 3 control code | |
| START_SUBSCRIPT | Subscript character specification | |
| END_SUBSCRIPT | Subscript character specification end | |
| START_SUPERSCRIPT | Superscript character specification | |
| END_SUPERSCRIPT | Superscript character specification end | |
| DUP | Character used for printing DUP codes | |
| FIELD_MARK | Character used for printing FIELD MARK characters | |
| SET_HORIZONTAL_TABS | Horizontal tab setup | |
| SET_VERTICAL_TABS | Vertical tab setup | |
| SET_HORIZONTAL_MARGINS | Right and left margin setup | |
| SET_PAGE_LENGTH | Page length setup | Assign the unit used for the defined control code page length to the PAGE_LENGTH_TYPE field. When single sheets are to be used, delete this field. |
| SET_VARIABLE_LINE_DENSITY | Line density setup | Assign the unit used for the control code length defined to LINE_SPACING_RATIO field. |
| SET_2_LINES_PER_INCH | New line pitch (2LPI) setup | |
| SET_3_LINES_PER_INCH | New line pitch (3LPI) setup | |
| SET_4_LINES_PER_INCH | New line pitch (4LPI) setup | |
| SET_6_LINES_PER_INCH | New line pitch (6LPI) setup | |
| SET_8_LINES_PER_INCH | New line pitch (8LPI) setup | |
| SET_10_LINES_PER_INCH | New line pitch (10LPI) setup | |
| SET_10_CHARACTERS_PER_INCH | Character pitch (10CPI) setup | |
| SET_12_CHARACTERS_PER_INCH | Character pitch (12CPI) setup | |

*Table 13-1 (Page 3 of 5). PDF Field Names*

| Field Name | Meaning | Remarks |
|---|---|---|
| SET_13_CHARACTERS_PER_INCH | Character pitch (13CPI) setup | |
| SET_15_CHARACTERS_PER_INCH | Character pitch (15CPI) setup | |
| SET_17_CHARACTERS_PER_INCH | Character pitch (17CPI) setup | |
| SET_20_CHARACTERS_PER_INCH | Character pitch (20CPI) setup | |
| IMAGE_TRANSMISSION | Image data setup (vertical 24-dot image) | |
| SELECT_DRAWER1 | Page tray (primary) setup | |
| SELECT_DRAWER2 | Page tray (alternate) setup | |
| SELECT_ENVELOPE | Envelope tray setup | |
| SELECT_DRAFT_QUALITY | Draft print quality setup | |
| SELECT_LETTER_QUALITY | Letter print quality setup | |
| SELECT_ENHANCED_QUALITY | Enhanced print quality setup | |
| SET_DUPLEX | Duplex printing setup | |
| SET_DUPLEX_TUMBLE | Duplex (tumble) printing setup | |
| RESET_DUPLEX | Duplex printing release | |
| SET_PORTRAIT_ORIENT | Page orientation (normal-portrait (upright)) setup | |
| SET_LANDSCAPELEFT_ORIENT | Page orientation (landscape-left (270-degree clockwise rotation of text)) setup | |
| SET_PORTRAITUPDWN_ORIENT | Page orientation (portrait-upside-down (180-degree clockwise rotation of text)) setup | |
| SET_LANDSCAPERGHT_ORIENT | Page orientation (landscape-right (90-degree clockwise rotation of text)) setup | |
| SET_FONT_GLOBAL | Global font ID setup | |
| SET_GFID_0003 | GFID 3 (OCR-B) setup | |
| SET_GFID_0005 | GFID 5 (Orator) setup | |
| SET_GFID_0011 | GFID 11 (Courier 10) setup | |
| SET_GFID_0012 | GFID 12 (Prestige Pica) setup | |
| SET_GFID_0013 | GFID 13 (Artisan 10) setup | |
| SET_GFID_0018 | GFID 18 (Courier Italic 10) setup | |
| SET_GFID_0019 | GFID 19 (OCR-A) setup | |
| SET_GFID_0020 | GFID 20 (Pica) setup | |
| SET_GFID_0030 | GFID 30 (Math Symbol 10) setup | |
| SET_GFID_0038 | GFID 38 (Orator Bold) setup | |
| SET_GFID_0039 | GFID 39 (Gothic Bold 10) setup | |
| SET_GFID_0040 | GFID 40 (Gothic Text 10) setup | |
| SET_GFID_0041 | GFID 41 (Roman Text 10) setup | |
| SET_GFID_0042 | GFID 42 (Serif Text 10) setup | |
| SET_GFID_0043 | GFID 43 (Serif Italic 10) setup | |
| SET_GFID_0044 | GFID 44 (Katakana 10) setup | |
| SET_GFID_0045 | GFID 45 (APL 10) setup | |
| SET_GFID_0046 | GFID 46 (Courier Bold 10) setup | |
| SET_GFID_0050 | GFID 50 (Shalom 10) setup | |
| SET_GFID_0066 | GFID 66 (Gothic Text 12) setup | |
| SET_GFID_0068 | GFID 68 (Gothic Italic 12) setup | |
| SET_GFID_0069 | GFID 69 (Gothic Bold 12) setup | |

*Table 13-1 (Page 4 of 5). PDF Field Names*

| Field Name | Meaning | Remarks |
|---|---|---|
| SET_GFID_0070 | GFID 70 (Serif Text 12) setup | |
| SET_GFID_0071 | GFID 71 (Serif Italic 12) setup | |
| SET_GFID_0072 | GFID 72 (Serif Bold 12) setup | |
| SET_GFID_0080 | GFID 80 (Math Symbol 12) setup | |
| SET_GFID_0084 | GFID 84 (Script 12) setup | |
| SET_GFID_0085 | GFID 85 (Courier 12) setup | |
| SET_GFID_0086 | GFID 86 (Prestige Elite) setup | |
| SET_GFID_0087 | GFID 87 (Letter Gothic 12) setup | |
| SET_GFID_0091 | GFID 91 (Light Italic 12) setup | |
| SET_GFID_0110 | GFID 110 (Letter Gothic Bold 12) setup | |
| SET_GFID_0111 | GFID 111 (Prestige Elite Bold) setup | |
| SET_GFID_0112 | GFID 112 (Prestige Elite Italic) setup | |
| SET_GFID_0115 | GFID 115 (Math Symbol 12) setup | |
| SET_GFID_0155 | GFID 155 (Boldface Italic) setup | |
| SET_GFID_0158 | GFID 158 (Modern) setup | |
| SET_GFID_0159 | GFID 159 (Boldface) setup | |
| SET_GFID_0160 | GFID 160 (Essay) setup | |
| SET_GFID_0162 | GFID 162 (Essay Italic) setup | |
| SET_GFID_0163 | GFID 163 (Essay Bold) setup | |
| SET_GFID_0168 | GFID 168 (Barak PSM) setup | |
| SET_GFID_0173 | GFID 173 (Essay Light) setup | |
| SET_GFID_0175 | GFID 175 (Document) setup | |
| SET_GFID_0176 | GFID 176 (Boldface) setup | |
| SET_GFID_0177 | GFID 177 (Boldface Italic) setup | |
| SET_GFID_0193 | GFID 193 (Math Symbol 12) setup | |
| SET_GFID_0198 | GFID 198 (Math Symbol 10) setup | |
| SET_GFID_0204 | GFID 204 (Gothic Text 13) setup | |
| SET_GFID_0221 | GFID 221 (Prestige 15) setup | |
| SET_GFID_0222 | GFID 222 (Gothic Text 15) setup | |
| SET_GFID_0223 | GFID 223 (Courier 15) setup | |
| SET_GFID_0225 | GFID 225 (Math Symbol 15) setup | |
| SET_GFID_0229 | GFID 229 (Serif Text 15) setup | |
| SET_GFID_0230 | GFID 230 (Gothic Text 15) setup | |
| SET_GFID_0245 | GFID 245 (Courier Bold 5) setup | |
| SET_GFID_0252 | GFID 252 (Courier 17) setup | |
| SET_GFID_0253 | GFID 253 (Courier Bold 17) setup | |
| SET_GFID_0254 | GFID 254 (Courier 17 (sub/super)) setup | |
| SET_GFID_0280 | GFID 280 (APL 20) setup | |
| SET_GFID_0281 | GFID 281 (Gothic Text 20) setup | |
| SET_GFID_0290 | GFID 290 (Gothic Text 27) setup | |
| SET_GFID_0751 | GFID 751 (Sonoran-Serif 8 point Roman Medium) setup | |
| SET_GFID_1051 | GFID 1051 (Sonoran-Serif 10 point Roman Medium) setup | |

*Table 13-1 (Page 5 of 5). PDF Field Names*

| Field Name | Meaning | Remarks |
|---|---|---|
| SET_GFID_1053 | GFID 1053 (Sonoran-Serif 10 point Roman Bold) setup | |
| SET_GFID_1056 | GFID 1056 (Sonoran-Serif 10 point Italic Medium) setup | |
| SET_GFID_1351 | GFID 1351 (Sonoran-Serif 12 point Roman Medium) setup | |
| SET_GFID_1653 | GFID 1653 (Sonoran-Serif 16 point Roman Bold) setup | |
| SET_GFID_2103 | GFID 2103 (Sonoran-Serif 24 point Roman Bold) setup | |
| START_HIGHLIGHT_INTENSE | Highlight printing setup | |
| END_HIGHLIGHT_INTENSE | Highlight printing release | |
| START_HIGHLIGHT_UNDERLINE | Underline setup | |
| END_HIGHLIGHT_UNDERLINE | Underline release | |
| TOP_MARGIN | Default top margin | Do not change this field. |
| LEFT_MARGIN | Default left margin | Do not change this field. |
| DYNAMIC_START_JOB | Printer control code sent to a printer to start printing (internal use) | Do not change this field. |
| DYNAMIC_END_JOB | Printer control code sent to a printer to stop printing (internal use) | Do not change this field. |
| DYNAMIC_SET_PAGE_LENGTH | Page length setup control code sent to a printer at the start of printing (internal use) | Do not change this field. |
| PRINTER_ID | Printer ID | Do not change this field. |

The following table lists some of the foregoing session parameter field names, together with their effective values:

*Table 13-2 (Page 1 of 2). Effective Values for PDF Field Names*

| Field Name | Effective Value |
|---|---|
| MAXIMUM_PAGE_LENGTH | 001 to 255 |
| MAXIMUM_PRINT_POSITION | 001 to 255 |
| DEFAULT_CPI? | 010/012/015 |
| DEFAULT_LPI? | 004/006/008 |
| COMPRESS_LINE_SPACING? | YES/NO |
| FORM_FEED_ANY_POSITION? | YES/NO |
| OVERRIDE_FORMATTED_PRINT? | YES/NO |
| HORIZONTAL_PEL | FORWARD_HORIZONTAL_SKIP length unit |
| VERTICAL_PEL | FORWARD_VERTICAL_ STEP_FEED length unit |
| IMAGE_HORIZONTAL_PEL | IMAGE_TRANSMISSION horizontal unit |
| IMAGE_VERTICAL_PEL | IMAGE_TRANSMISSION vertical unit |
| LINE_SPACING_RATIO | SET_VARIABLE_LINE_DENSITY length unit |
| PAGE_LENGTH_TYPE? | LINE/INCH/6INCH* |
| FIRST_LEFT_POSITION | 000 to 1440 in units of 1/1440 inch |
| FIRST_TOP_POSITION | 000 to 1440 in units of 1/1440 inch |
| * 6INCH indicates that the page length should be specified in units of 1/6 inch. | |

*Table 13-2 (Page 2 of 2). Effective Values for PDF Field Names*

| Field Name | Effective Value |
|---|---|
| DRAWER1_ORIENTATION | LANDSCAPE/PORTRAIT/COR |
| DRAWER2_ORIENTATION | LANDSCAPE/PORTRAIT/COR |
| AUTOMATIC_ORIENTATION | YES/NO |
| * 6INCH indicates that the page length should be specified in units of 1/6 inch. | |

**Notes:**

1. If one of the desired CPI/LPI settings is not exactly supported by the printer, set the nearest value. The results of printing might not be as desired.
2. If the units used to specify the control code length defined in FORWARD_HORIZONTAL _SKIP and FORWARD_VERTICAL _STEP_FEED are not the same as the units used to specify the HORIZONTAL_PEL and VERTICAL_PEL, the desired output will not be obtained.
3. If the units used to specify the control code length defined in SET_VARIABLE_LINE_DENSITY are not the same as the units used to specify the LINE_SPACING_RATIO, the desired output will not be obtained.
4. The FIRST_LEFT_POSITION and FIRST_TOP_POSITION values specify the unprintable area of the page. These values are included in the top margin and the left margin specified by the AS/400 or S/36 printer control code.

## Parameters of Printer Control Codes in PDFs

This section explains how to define the parameters, if any, of the printer control codes. Some printer control codes require that parameters be specified. Pay particular attention when defining a parameter, because how this is done depends on the parameter type. If the definition method for another type is used, the desired output will not be obtained.

The following table lists printer control code parameters, together with their meanings:

*Table 13-3 (Page 1 of 2). Printer Control Code Parameters*

| Parameter Type | Meaning |
|---|---|
| byte-value | 1-byte parameter. |
| byte-values | Multibyte parameter.<br>Used if operands are fixed. |
| word-value(HL) | 1-word parameter (higher and lower bytes). |
| word-value(LH) | 1-word parameter (lower and higher bytes). |
| length(HL)-values | Multibyte parameter requiring operands.<br>An operand consists of a higher and lower byte.<br>Used if operands are variable. |
| length(LH)-values | Multibyte parameter requiring operands.<br>An operand consists of a lower and higher byte.<br>Used if operands are variable. |
| length(HL)-images | Image data requiring operands.<br>An operand consists of a higher and lower byte. |
| length(LH)-images | Image data requiring operands.<br>An operand consists of a lower and higher byte. |

*Table 13-3 (Page 2 of 2). Printer Control Code Parameters*

| Parameter Type | Meaning |
|---|---|
| decimal-characters | Decimal characters parameter. |

## PDF Symbols

The following table lists the symbols that are defined for PDFs.

*Table 13-4 (Page 1 of 3). PDF Symbols*

| Field Name | Symbol |
|---|---|
| SPACE | |
| EXCLAMATION_POINT | ! |
| QUOTATION_MARKS | " |
| NUMBER_SIGN | # |
| DOLLAR_SIGN | $ |
| PERCENT_SIGN | % |
| AMPERSAND | & |
| APOSTROPHE | ' |
| LEFT_PARENTHESIS | ( |
| RIGHT_PARENTHESIS | ) |
| ASTERISK | * |
| PLUS_SIGN | + |
| COMMA | , |
| HYPHEN | - |
| PERIOD | . |
| SLASH | / |
| ZERO | 0 |
| ONE | 1 |
| TWO | 2 |
| THREE | 3 |
| FOUR | 4 |
| FIVE | 5 |
| SIX | 6 |
| SEVEN | 7 |
| EIGHT | 8 |
| NINE | 9 |
| COLON | : |
| SEMICOLON | ; |
| LESS_THAN_SIGN | < |
| EQUAL_SIGN | = |
| GREATER_THAN_SIGN | > |
| QUESTION_MARK | ? |
| AT_SIGN | @ |
| A_CAPITAL | A |
| B_CAPITAL | B |
| C_CAPITAL | C |
| D_CAPITAL | D |

*Table 13-4 (Page 1 of 3). PDF Symbols*

| Field Name | Symbol |
|---|---|
| E_CAPITAL | E |
| F_CAPITAL | F |
| G_CAPITAL | G |
| H_CAPITAL | H |
| I_CAPITAL | I |
| J_CAPITAL | J |
| K_CAPITAL | K |
| L_CAPITAL | L |
| M_CAPITAL | M |
| N_CAPITAL | N |
| O_CAPITAL | O |
| P_CAPITAL | P |
| Q_CAPITAL | Q |
| R_CAPITAL | R |
| S_CAPITAL | S |
| T_CAPITAL | T |
| U_CAPITAL | U |
| V_CAPITAL | V |
| W_CAPITAL | W |
| X_CAPITAL | X |
| Y_CAPITAL | Y |
| Z_CAPITAL | Z |
| LEFT_BRACKET | [ |
| BACKSLASH | \ |
| RIGHT_BRACKET | ] |
| CIRCUMFLEX_ACCENT | ^ |
| UNDERLINE | _ |
| GRAVE_ACCENT | ` |
| A_SMALL | a |
| B_SMALL | b |
| C_SMALL | c |
| D_SMALL | d |
| E_SMALL | e |
| F_SMALL | f |
| G_SMALL | g |
| H_SMALL | h |
| I_SMALL | i |

*Table 13-4 (Page 2 of 3). PDF Symbols*

| Field Name | Symbol |
|---|---|
| J_SMALL | j |
| K_SMALL | k |
| L_SMALL | l |
| M_SMALL | m |
| N_SMALL | n |
| O_SMALL | o |
| P_SMALL | p |
| Q_SMALL | q |
| R_SMALL | r |
| S_SMALL | s |
| T_SMALL | t |
| U_SMALL | u |
| V_SMALL | v |
| W_SMALL | w |
| X_SMALL | x |
| Y_SMALL | y |
| Z_SMALL | z |
| LEFT_BRACE | { |
| VERTICAL_BAR | \| |
| RIGHT_BRACE | } |
| TILDE_ACCENT | ˜ |
| C_CEDILLA_CAPITAL | Ç |
| U_DIAERESIS_SMALL | ü |
| E_ACUTE_SMALL | é |
| A_CIRCUMFLEX_SMALL | â |
| A_DIAERESIS_SMALL | ä |
| A_GRAVE_SMALL | à |
| A_OVERCIRCLE_SMALL | å |
| C_CEDILLA_SMALL | ç |
| E_CIRCUMFLEX_SMALL | ê |
| E_DIAERESIS_SMALL | ë |
| E_GRAVE_SMALL | è |
| I_DIAERESIS_SMALL | ï |
| I_CIRCUMFLEX_SMALL | î |
| I_GRAVE_SMALL | ì |
| A_DIAERESIS_CAPITAL | Ä |
| A_OVERCIRCLE_CAPITAL | Å |
| E_ACUTE_CAPITAL | É |
| AE_DIPTHONG_SMALL | æ |
| AE_DIPTHONG_CAPITAL | Æ |
| O_CIRCUMFLEX_SMALL | ô |
| O_DIAERESIS_SMALL | ö |
| O_GRAVE_SMALL | ò |

*Table 13-4 (Page 2 of 3). PDF Symbols*

| Field Name | Symbol |
|---|---|
| U_CIRCUMFLEX_SMALL | û |
| U_GRAVE_SMALL | ù |
| Y_DIAERESIS_SMALL | ÿ |
| O_DIAERESIS_CAPITAL | Ö |
| U_DIAERESIS_CAPITAL | Ü |
| O_SLASH_SMALL | ø |
| POUND_SIGN | £ |
| O_SLASH_CAPITAL | Ø |
| MULTIPLY_SIGN | × |
| A_ACUTE_SMALL | á |
| I_ACUTE_SMALL | í |
| O_ACUTE_SMALL | ó |
| U_ACUTE_SMALL | ú |
| N_TILDE_SMALL | ñ |
| N_TILDE_CAPITAL | Ñ |
| ORDINAL_INDICATOR_FEMININE | a |
| ORDINAL_INDICATOR_MASCULINE | o |
| QUESTION_MARK_INVERTED | ¿ |
| REGISTERED_TRADEMARK_SYMBOL | ® |
| LOGICAL_NOT | ¬ |
| ONE_HALF | ½ |
| ONE_QUARTER | ¼ |
| EXCLAMATION_POINT_INVERTED | ¡ |
| LEFT_ANGLE_QUOTES | « |
| RIGHT_ANGLE_QUOTES | » |
| A_ACUTE_CAPITAL | Á |
| A_CIRCUMFLEX_CAPITAL | Â |
| A_GRAVE_CAPITAL | À |
| COPYRIGHT_SYMBOL | © |
| CENT_SIGN | ¢ |
| YEN_SIGN | ¥ |
| A_TILDE_SMALL | ã |
| A_TILDE_CAPITAL | Ã |
| E_CIRCUMFLEX_CAPITAL | Ê |
| E_DIAERESIS_CAPITAL | Ë |
| I_ACUTE_CAPITAL | Í |
| I_CIRCUMFLEX_CAPITAL | Î |
| I_DIAERESIS_CAPITAL | Ï |
| VERTICAL_LINE_BROKEN | ¦ |
| I_GRAVE_CAPITAL | Ì |
| O_ACUTE_CAPITAL | Ó |
| O_CIRCUMFLEX_CAPITAL | Ô |
| O_GRAVE_CAPITAL | Ò |

*Table 13-4 (Page 3 of 3). PDF Symbols*

| Field Name | Symbol |
|---|---|
| O_TILDE_SMALL | õ |
| O_TILDE_CAPITAL | Õ |
| MICRO_SYMBOL | µ |
| U_ACUTE_CAPITAL | Ú |
| U_CIRCUMFLEX_CAPITAL | Û |
| U_GRAVE_CAPITAL | Ù |
| ACUTE_ACCENT | ´ |
| SYLLABLE_HYPHEN | - |
| PLUS_OR_MINUS_SIGN | ± |
| THREE_QUARTERS | ¾ |
| PARAGRAPH_SYMBOL | ¶ |
| SECTION_SYMBOL | § |
| DIVIDE_SIGN | ÷ |
| DEGREE_SYMBOL | ° |
| ONE_SUPERSCRIPT | |
| THREE_SUPERSCRIPT | |
| TWO_SUPERSCRIPT | |
| REQUIRED_SPACE | |
| INTERNATIONAL_CURRENCY_SYMBOL | ¤ |
| ETH_ICELANDIC_SMALL | ð |
| ETH_ICELANDIC_CAPITAL | Ð |
| SHARP_S_SMALL | ß |
| THORN_ICELANDIC_SMALL | þ |
| THORN_ICELANDIC_CAPITAL | Þ |
| Y_ACUTE_SMALL | ý |
| Y_ACUTE_CAPITAL | Ý |
| OVERLINE | ¯ |
| CEDILLA | ¸ |
| DIAERESIS | .. |
| MIDDLE_DOT_ACCENT | . |

## Printer Control Codes

This section explains the SNA character string (SCS) control code, or Final-Form Text: Document Content Architecture (FFT DCA).

For details of the SCS Control Codes, see *AS/400 Guide to Programming for Printing*, SC41-8194.

## SCS Control Code Format

Some printer control codes perform single, specific functions by themselves, whereas others perform multiple functions according to the parameters specified after the control code. A printer control code with parameters has the following format:

| Control Code | Count | Parameter 1 | Parameter 2... |
|---|---|---|---|
| 1 or 2 bytes | 1 byte | 1 or 2 bytes | 1 or 2 bytes |

Normally, a control code with parameters consists of 2 bytes. (Usually, a control code without parameters—that is, functioning as a unit—has only 1 byte.) A count consists of 1 byte, and indicates the length of the parameters (including the count) after the control code, in bytes. For example, a count and two 1-byte parameters is shown as X'03', because the count itself is included. Some control codes, such as the Printing Position (PP) control code, do not have counts.

A parameter can be 1 or 2 bytes in length. The number of bytes depends on the control codes.

**Note:** In this manual, counts and parameters that are actually processed in binary are all expressed in hexadecimal (0–F) to improve readability.

# Printer Control Codes

*Table 13-5 (Page 1 of 3). Printer Control Codes*

| Control Code | Abbreviation | Hexadecimal Code | Function |
|---|---|---|---|
| | | ***Character Set Control*** | |
| Set CGCS[1] through Local ID | SCGL | 2BD1nn81xx | Specifies the code page through a local ID. |
| Set Character Distance | SCD | 2BD2nn29xxxx | Selects the pitch and font. |
| Set Font ID through GFID[2] | SFG | 2BD1nn05xxxxyyyyzz | Selects the font. |
| Set GCSGID[3] through GCID[4] | SCG | 2BD1nn01xxxxyyyy | Specifies the code page. |
| | | ***Device Control*** | |
| Bell | BEL | 2F | Ignored. |
| Null | NUL | 00 | Ignored. |
| Repeat | RPT | 0A | Ignored. |
| Set Exception Action | SEA | 2BD2nn85p1–pn | Specifies the explicit action. |
| Set Initial Conditions | SIC | 2BD2nn45xx | Sets the environment of the EBCDIC transform. |
| Set Print Setup | SPSU | 2BD2nn4Cp1–pn | Ignored. |
| Switch | SW | 2A | Ignored. |
| | | ***Generation Control*** | |
| Begin Emphasis | BES | 2BD1nn8Axx | Begins emphasis. |
| Begin Overstrike | BOS | 2BD4nn72wwxxyyyyzzzz | Begins overstriking. |
| Begin Underscore | BUS | 2BD4nn0Axxyy | Begins underscoring. |
| Enable Presentation | ENP | 14 | Ignored. |
| End Emphasis | EES | 2BD1nn8Exx | Ends emphasis. |
| End Overstrike | EOS | 2BD4nn76 | Ends overstriking. |
| End Underscore | EUS | 2BD4nn0E | Ends underscoring. |
| Inhibit Presentation | INP | 24 | Ignored. |
| Justify Text Field | JTF | 2BD2nn03xxxxyy | Justifies the following text. |
| Set Graphic Error Action | SGEA | 2BC8nnxxyy | Specifies how to process a received unprintable character font. |
| Set Justify Mode | SJM | 2BD2nn0Dxxyy | Justifies each line of text between the left and right margins. |
| Subscript | SBS | 38 | Subscript. |
| Substitute | SUB | 3F | Synonym for the graphic exception character. |
| Superscript | SPS | 09 | Superscript. |

Legend:
nn: Count
fp: Function parameter
ee, gg, hh, il–ix, mm, nn, p1–pn, ss, t1–tn, uu, vv, ww, xx, yy, zz: Numeric parameter

*Table 13-5 (Page 2 of 3). Printer Control Codes*

| Control Code | Abbreviation | Hexadecimal Code | Function |
|---|---|---|---|
| Word Underscore | WUS | 23 | Underscore the entire word immediately preceding the control. |
| ***Print Format Control*** | | | |
| Form Feed | FF | 0C | Moves the printing position to the next page. |
| Page Presentation Media | PPM | 2BD2nn48ssssuuvv wwxxyyzz | Specifies the forms setting, the source drawer, the quality, and the duplex function. |
| Required Form Feed | RFF | 3A | Moves the printing position to the next page and restores the indent level to the left margin. |
| Set Horizontal Format | SHF | 2BC1nnxxyyzzt1–tn | Specifies the maximum print position, the left and right margins, and the horizontal tab stops in character units. |
| Set Horizontal Margins | SHM | 2BD2nn11xxxxyyyy | Sets the left and right margins in units of 1/1440 inch. |
| Set Presentation Page Size | SPPS | 2BD2nn40xxxxyyyy | Specifies the presentation surface width and depth. |
| Set Text Orientation | STO | 2BD3nnF6xxxxyyyy | Specifies the page rotation. |
| Set Vertical Format | SVF | 2BC2nnxxyyzzt1–tn | Specifies the maximum print line, the top and bottom margins, and the vertical tab stops in character units. |
| Set Vertical Margins | SVM | 2BD2nn49xxxxyyyy | Sets the top and bottom margins in units of 1/1440 inch. |
| ***Printing Position Control*** | | | |
| Backspace | BS | 16 | Moves the printing position to the left one font width. |
| Carriage Return | CR | 0D | Moves the printing position to the left margin. |
| Horizontal Tab | HT | 05 | Moves the printing position right to the next tab stop. |
| Indent Tab | IT | 39 | Moves the printing position right to the next tab stop and sets the indent level one tab stop further to the right. |
| Index Return | IRT | 33 | Synonym for Required New Line. |
| Interchange Record Separator | IRS | 1E | Synonym for New Line. |
| Line Feed | LF | 25 | Moves the printing position one line vertically. |
| New Line | NL | 15 | Moves the printing position to the left margin of the next line. |
| Numeric Backspace | NBS | 36 | Synonym for Backspace. |

Legend:
nn: Count
fp: Function parameter
ee, gg, hh, il–ix, mm, nn, p1–pn, ss, t1–tn, uu, vv, ww, xx, yy, zz: Numeric parameter

*Table 13-5 (Page 3 of 3). Printer Control Codes*

| Control Code | Abbreviation | Hexadecimal Code | Function |
|---|---|---|---|
| Presentation Position | PP | 34fpxx | Moves the printing position. |
| Release Left Margin | RLM | 2BD2nn0B | Ignored. |
| Required New Line | RNL | 06 | Moves the printing position to the left margin of the next line and resets any pending indent level. |
| Set Horizontal Tab Stops | STAB | 2BD2nn01xxt1–tn | Specifies the tab stops. |
| Set Indent Level | SIL | 2BD2nn07xx | Sets the indent level to the specific tab stop. |
| Set Line Density | SLD | 2BC6nnxx | Specifies the line pitch in units of 1/72 inch. |
| Set Line Spacing | SLS | 2BD2nn09xx | Specifies the number of lines spaced by a new line control. |
| Set Single Line Distance | SSLD | 2BD2nn15xxxx | Specifies the line pitch in units of 1/1440 inch. |
| Unit Backspace | UBS | 1A | Moves the printing position 1/60 inch to the left. |
| Vertical Tab | VT | 0B | Moves the printing position down to the next tab stop. |
| ***Transparent Control*** | | | |
| ASCII Transparent | ATRN | 03 | Enables the printing of an ASCII data stream. |

**Notes:**

1 Coded Graphic Character Set
2 Global Font ID
3 Graphic Character Set Global Identifier
4 Graphic Character set ID

Legend:
nn: Count
fp: Function parameter
ee, gg, hh, il–ix, mm, nn, p1–pn, ss, t1–tn, uu, vv, ww, xx, yy, zz: Numeric parameter

## Programming Notes

If the transmission of a control code is interrupted, the printer waits for the remaining part of the code. If the data stream (the series of data units and control codes) sent after the interruption is consistent with the data stream sent before the interruption (that is, if one complete printer control code is restored by chaining), the control code is processed as is.

If the two parts of the data stream are inconsistent, an error occurs. A negative response to an “Invalid Printer Parameter” is sent to the host system, or treated as NO-OP (no-operation instruction, ignored because of a meaningless code).

The main point to note here is that detailed information is not sent to the host system if an error occurs in a control code. After programming, you need to check the data stream thoroughly by repeating the printing test.

# Restrictions and Notes for Printer Codes and Printer Setup

This section provides supplementary notes and explains restrictions for printing.

## Printer Control Codes

<table>
<tr><th>Printer Control Code</th><th>If Use PDT file Is Selected:</th><th>If an OS/2 Printer Driver Is Used:</th></tr>
<tr><td>Set the Character Density (SCD)</td><td colspan="2">The GFID is selected for the valid Character Distance (CD) parameter as follows:<br><br>CD Parameter / Character Pitch (Normal) / Character Pitch (COR) / GFID Value<br>000A / 10 CPI / 13 CPI / 13<br>000B / Proportional / 13 CPI / 175<br>000C / 12 CPI / 15 CPI / 86<br>000F / 15 CPI / 20 CPI / 230<br>00FF / 10 CPI / 13 CPI / 12</td></tr>
<tr><td></td><td>If the specified font is not supported, a substitution is provided. For example, when 15 CPI font is specified but the font is not supported, the supported 17 CPI font is substituted.</td><td>See “How to Determine the Font” on page 13-17.</td></tr>
<tr><td>Set Font ID through GFID (SFG)</td><td colspan="2">Recognizable GFIDs are restricted. (See “PDF Field Names and Symbols” on page 10-10.)<br>If the specified GFID is not supported and it is out of the range from 154 through 200, the one with the closest font width of the following fonts is substituted:<br><br>Font Name / GFID Value<br>Courier Bold 5 / 245<br>Courier 10 / 11<br>Prestige Elite 12 / 86<br>Gothic-text 13 / 204<br>Gothic-text 15 / 230<br>Courier 17 / 252<br>Gothic-text 20 / 281<br>Gothic-text 27 / 290<br><br>If the specified GFID is not supported and it is between 154 and 200, the following font is substituted:<br><br>Font Name / GFID Value<br>Document / 175</td></tr>
<tr><td></td><td></td><td>The selected font might be different. See “How to Determine the Font” on page 13-17.</td></tr>
<tr><td>Begin Underscore (BUS)</td><td></td><td>The selected font might not support the underscore.</td></tr>
<tr><td>Begin Emphasis (BES)</td><td></td><td>The selected font might not support the emphasis.</td></tr>
</table>

| Printer Control Code | If *Use PDT file* Is Selected: | If an OS/2 Printer Driver Is Used: |
|---|---|---|
| Set Text Orientation (STO) | | When the page is rotated, only Outline Font is selected. |
| Page Presentation Media (PPM) | The following parameters are supported:<br>Forms Control (FC)<br>Source Drawer (SD)<br>Duplex (DX)<br>Other parameters are ignored. | The following parameters are supported:<br>Forms Control (FC)<br>Source Drawer (SD)<br>Other parameters are ignored. |

**Note:** When you use the OS/2 printer driver, the spooler must be **on**.

## How to Determine the Font

This section explains how PC400 determines a font when the OS/2 printer driver is used.

If the specified font is available on your printer, it is selected. However, if it is not available, PC400 selects a font from the available ones on your printer by checking the font attributes in the following order.

1. Typeface name
2. Character set
3. Fixed-pitch font
4. Character width.
   If the specified font is an Outline Font, the character width is not checked. If no available font has the same character width as the specified one, PC400 selects the font with the closest width.
5. Font family
6. Italic font
7. Bold font

## PFT Migration Utility

The PFT Migration Utility converts the printer function table (PFT) for the PC Support/400 Work Station function to a printer definition file (PDF) for PC400.

This section describes the operator interface of the PFT Migration Utility.

For details of PFT, see *PC Support/400: DOS and OS/2 Technical Reference*, SC41-8091.

## How to Use the PFT Migration Utility

The file name of the PFT Migration Utility program is PCSPFC.EXE. You can execute it by:

Making a program icon of the PFT Migration Utility and double-clicking on its icon.

Specifying the program name (and parameters) at the command prompt as follows:

```
PCSPFC [ [drive:] [path] PFT-file-name[.extension] ]
```

If no parameter is specified, PCSPFC.EXE displays the Convert PFT to PDF window.

If you omit a drive name or a directory name, PCSPFC.EXE uses the current drive, the current directory, or both. If you omit an extension, PCSPFC.EXE adds .PFT to the PFT file name.

When you run the PFT Migration Utility, the Convert PFT to PDF window appears.

On the Convert PFT to PDF window, select a PFT file from the list box or type a specific PFT file name, and select **OK**. The PFT Migration Utility starts the conversion and displays the PFT File Converter window to show the conversion status.

After the conversion, if you select **Save List** on the PFT File Converter window, conversion messages in the dialog box are saved into a list file. The list file is created in the same directory and with the same name as the PFT file, except the extension. The extension of the list file is .LS2.

If the conversion was completed successfully, you can select **Convert PDF to PDT** on the PFT File Converter window to convert the PDF to a PDT file. You can also create a PDT file by selecting **Printer Setup** from the File pull-down menu as explained in “Customizing the PDT” on page 10-1.

### Considerations

When the base PDF already exists, the converted PDF fields are appended to the end of the base PDF. The name of the base PDF is decided as follows:

| Table 13-6. PDF Name | |
|---|---|
| **PFT File Name** | **Base PDF Name** |
| *xxxxxxxx*.**PFT** | *xxxxxxxx*.**PDF** |
| **IBM***xxxxx*.**MNL** | **MNL***xxxxx*.**PDF** |
| *zzzxxxxx*.**MNL**[1] | *zzzxxxxx*.**PDF**[1] |
| 1 “zzz” is not “IBM.” | |

Even if the same fields are already defined in the PDF, the appended fields are effective because the last definition is always effective in a PDF.

If the base PDF does not exist in the directory, the PFT Migration Utility creates a new PDF that has only the converted fields from the PFT file. In this case, you should append this file to an appropriate base file manually, because the fields converted from the PFT file do not cover all of the necessary PDF fields.

Therefore, you should prepare both the PFT file and its base PDF in the same directory before the conversion.

## Migration from the PFT to the PDF

This section describes how the PFT Migration Utility migrates the PFT to the PDF.

The following table shows the target fields of the PDF for the data in the PFT:

| Table 13-7 (Page 1 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| **Initialization and Reset** | |
| ***Initialization*** | |
| Initialization | START_JOB= |
| | When the data is defined in the Initialization field of the PFT, the data is appended to the string START_JOB=. |
| ***File Name*** | |
| Filename | None. |
| | This field is ignored. |
| ***Reset*** | |
| Reset | END_JOB= |
| | When the data is defined in the Reset field of the PFT, the data is appended to the string END_JOB=. |

| Table 13-7 (Page 2 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| **Vertical Line Spacing** | |
| ***6 Lines per Inch*** | |
| 6 Lines per Inch | SET_6_LINES_PER_INCH= |
| | When the data is defined in the 6-lines-per-inch field of the PFT, the data is appended to the string SET_6_LINES_PER_INCH=. |
| ***8 Lines per Inch*** | |
| 8 Lines per Inch | SET_8_LINES_PER_INCH= |
| | When the data is defined in the 8-lines-per-inch field of the PFT, the data is appended to the string SET_8_LINES_PER_INCH=. |
| ***Variable Line Spacing*** | |
| Control Sequence | SET_VARIABLE_DENSITY= |
| | When the data is defined in the control sequence field of the PFT for variable line spacing, the data is appended to the string SET_VARIABLE_DENSITY=. The parameter n in the control sequence is replaced with the PDF parameter type. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | LINE_SPACING_RATIO= |
| | When the data is defined in the X/Y field of the PFT for variable line spacing, the value Y/X is appended to the string LINE_SPACING_RATIO= as three-digit or four-digit numbers to indicate the decimal number. For example, when Y/X is 72, **072** is appended to the string LINE_SPACING_RATIO= and **LINE_SPACING_RATIO=072** is written to the output file. When the value is greater than 255, the four-digit number is migrated. When the value is less than 255, the three-digit number is migrated. |
| ***Indexing Functions*** | |
| Begin Superscript | START_SUPERSCRIPT= |
| | When the data is defined in the Begin Superscript field and End Superscript field of the PFT for the indexing functions, the data is appended to the string START_SUPERSCRIPT=. If the data for End Superscript is not defined, the data for Begin Superscript is ignored. |
| End Superscript | END_SUPERSCRIPT= |
| | When the data is defined in the End Superscript field and Begin Superscript field of the PFT for the indexing functions, the data is appended to the string END_SUPERSCRIPT=. If the data for Begin Superscript is not defined, the data for End Superscript is ignored. |

| *Table 13-7 (Page 3 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Begin Subscript | START_SUBSCRIPT= |
| | When the data is defined in the Begin Subscript field and End Subscript field of the PFT for the indexing functions, the data is appended to the string START_SUBSCRIPT=. If the data for End Subscript is not defined, the data for Begin Subscript is ignored. |
| End Subscript | END_SUBSCRIPT= |
| | When the data is defined in the End Subscript field and Begin Subscript field of the PFT for the indexing functions, the data is appended to the string END_SUBSCRIPT=. If the data for Begin Subscript is not defined, the data for End Subscript is ignored. |
| Reverse 1/2 index | START_SUPERSCRIPT=<br>END_SUBSCRIPT= |
| | The data is appended to the START_SUPERSCRIPT= for the following conditions:<br>When the data is not defined in the Begin Superscript field in the PFT or when the data is not defined in the End Superscript field in the PFT.<br>When the data is defined in the Reverse 1/2 index and Forward 1/2 index field in the PFT.<br>The data is appended to the END_SUBSCRIPT= for the following conditions:<br>When the data is not defined in the Begin Subscript field in the PFT or when the data is not defined in the End Subscript field in the PFT.<br>When the data is defined in the Reverse 1/2 index and Forward 1/2 index field in the PFT. |
| Forward 1/2 index | END_SUPERSCRIPT=<br>START_SUBSCRIPT= |
| | The data is appended to the END_SUPERSCRIPT= for the following conditions:<br>When the data is not defined in the Begin Superscript field in the PFT or when the data is not defined in the End Superscript field in the PFT.<br>When the data is defined in the Reverse 1/2 index and Forward 1/2 index field in the PFT.<br>The data is appended to the START_SUBSCRIPT= for the following conditions:<br>When the data is not defined in the Begin Subscript field in the PFT or when the data is not defined in the End Subscript field in the PFT.<br>When the data is defined in the Reverse 1/2 index and Forward 1/2 index field in the PFT. |
| Reverse Index | None. |
| | This field is ignored. |
| **Horizontal Line Spacing** | |

| Table 13-7 (Page 4 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***5 Pitch*** | |
| 5 pitch | None. |
| | This field is ignored. |
| ***8.55 Pitch*** | |
| 8.55 pitch | None. |
| | This field is ignored. |
| ***10 Pitch*** | |
| 10 pitch | SET_10_CHARACTERS_PER_INCH= |
| | When the data is defined in the 10-pitch field of the PFT for horizontal character spacing, the data is appended to the string SET_10_CHARACTERS_PER_INCH=. |
| ***12 Pitch*** | |
| 12 pitch | SET_12_CHARACTERS_PER_INCH= |
| | When the data is defined in the 12-pitch field of the PFT for horizontal character spacing, the data is appended to the string SET_12_CHARACTERS_PER_INCH=. |
| ***15 Pitch*** | |
| 15 pitch | SET_15_CHARACTERS_PER_INCH= |
| | When the data is defined in the 15-pitch field of the PFT for horizontal character spacing, the data is appended to the string SET_15_CHARACTERS_PER_INCH=. |
| ***17.1 Pitch*** | |
| 17.1 pitch | SET_17_CHARACTERS_PER_INCH= |
| | When the data is defined in the 17.1-pitch field of the PFT for horizontal character spacing, the data is appended to the string SET_17_CHARACTERS_PER_INCH=. |
| ***Horizontal Motion Index*** | |
| Control Sequence | None. |
| | This field is ignored. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | None. |
| | This field is ignored. |
| **Horizontal Relative Movement** | |
| ***Forward Relative Movement*** | |

| *Table 13-7 (Page 5 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Control Sequence | FORWARD_HORIZONTAL_SKIP= |
| | When the data is defined in the Forward Relative Movement field of the PFT, the data is appended to the string FORWARD_HORIZONTAL_SKIP=. The parameter n in the control sequence is replaced with the PDF parameter type. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | HORIZONTAL_PEL= |
| | When the data is defined in the X/Y field of the PFT for the forward relative movement, the value Y/X is appended to the string HORIZONTAL_PEL= as a three-digit or four-digit number to indicate the decimal number. For example, when Y/X is 120, **120** is appended to the string HORIZONTAL_PEL= and **HORIZONTAL_PEL=120** is written to the output file. When the value is greater than 255, the four-digit number is migrated. When the value is less than 255, the three-digit number is migrated. |
| ***Backward Relative Movement*** | |
| Control Sequence | None. |
| | This field is ignored. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | None. |
| | This field is ignored. |
| **Highlighting** | |
| ***Begin Emphasis*** | |
| Begin Emphasis | START_HIGHLIGHT_INTENSE= |
| | When the data is defined in the Begin Emphasis of the PFT, the data is appended to the string START_HIGHLIGHT_INTENSE=. |
| ***End Emphasis*** | |
| End Emphasis | END_HIGHLIGHT_INTENSE= |
| | When the data is defined in the End Emphasis of the PFT, the data is appended to the string END_HIGHLIGHT_INTENSE=. |
| ***Begin Underline*** | |
| Begin Underline | START_HIGHLIGHT_UNDERLINE= |
| | When the data is defined in the Begin Underline of the PFT, the data is appended to the string START_HIGHLIGHT_UNDERLINE=. |

| *Table 13-7 (Page 6 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***End Underline*** | |
| End Underline | END_HIGHLIGHT_UNDERLINE= |
| | When the data is defined in the End Underline of the PFT, the data is appended to the string END_HIGHLIGHT_UNDERLINE=. |
| ***Begin Quality Print*** | |
| Begin Quality Print | None. |
| | This field is ignored. |
| ***End Quality Print*** | |
| End Quality Print | None. |
| | This field is ignored. |
| **Paper-Handling** | |
| ***Bottom Tray Feed*** | |
| Bottom Tray Feed | SELECT_DRAWER2= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control of the portrait orientation. For this, the PFT Migration Utility divides this control sequence into two parts and migrates the control sequence for the drawer select and paper feed. The control sequence of the portrait orientation is migrated to SET_PORTRAIT_ORIENT=.<br><br>If no data is defined in any fields for the landscape paper handling, the PFT Migration Utility migrates this control sequence to the SELECT_DRAWER2=. (See “Definition of Paper-Handling Migration” on page 13-44.) |

| *Table 13-7 (Page 7 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***Top Tray Feed*** | |
| Top Tray Feed | SELECT_DRAWER1= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control of the portrait orientation. For this, the PFT Migration Utility divides the control sequence into two parts and migrates it for the drawer select and paper feed. The control sequence of the portrait orientation is migrated to SET_PORTRAIT_ORIENT=.<br><br>If no data is defined in any fields for landscape paper handling, the PFT Migration Utility migrates this control sequence to SELECT_DRAWER1=. (See “Definition of Paper-Handling Migration” on page 13-44.) |

| *Table 13-7 (Page 8 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***Envelope Feed*** | |
| Envelope Feed | SELECT_ENVELOPE= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control of the portrait orientation. For this, the PFT Migration Utility divides the control sequence into two parts and migrates it for the drawer select and paper feed. The control sequence of the portrait orientation is migrated to SET_PORTRAIT_ORIENT=.<br><br>If no data is defined in any fields for landscape paper handling, the PFT Migration Utility migrates this control sequence to SELECT_ENVELOPE=. (See "Definition of Paper-Handling Migration" on page 13-44.) |
| ***Manual Feed*** | |
| Manual Feed | SELECT_DRAWER3= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control of the portrait orientation. For this, the PFT Migration Utility divides the control sequence into two parts and migrates it for the drawer select and paper feed. The control sequence of the portrait orientation is migrated to SET_PORTRAIT_ORIENT=.<br><br>If no data is defined in any fields for landscape paper handling, the PFT Migration Utility migrates this control sequence to SELECT_DRAWER3=. (See "Definition of Paper-Handling Migration" on page 13-44.) |

| *Table 13-7 (Page 9 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***Continuous Feed*** | |
| Continuous Feed | None. |
| | This field is ignored. |
| ***Ignore Paper End Sensor*** | |
| Ignore Paper End Sensor | None. |
| | This field is ignored. |
| ***Enable Paper End Sensor*** | |
| Enable Paper End Sensor | None. |
| | This field is ignored. |
| ***Eject Automatic Cut Sheet*** | |
| Eject Automatic Cut Sheet | None. |
| | This field is ignored. |
| ***Eject Manual Cut Sheet*** | |
| Eject Manual Cut Sheet | None. |
| | This field is ignored. |
| ***Collate*** | |
| Collate | None. |
| | This field is ignored. |
| **Paper Positioning** | |
| ***Continuous Forms*** | |
| Distance from Top Paper Edge | None. |
| | This field is ignored. |
| Distance from Left Paper Edge | None. |
| | This field is ignored. |
| Location of First Print Column | None. |
| | This field is ignored. |
| ***Manual Feed*** | |
| Distance from Top Paper Edge | None. |
| | This field is ignored. |
| Distance from Left Paper Edge | None. |
| | This field is ignored. |
| Location of First Print Column | None. |
| | This field is ignored. |
| ***Automatic Feed*** | |
| Distance from Top Paper Edge | None. |
| | This field is ignored. |

| *Table 13-7 (Page 10 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Distance from Left Paper Edge | None. |
| | This field is ignored. |
| Location of First Print Column | None. |
| | This field is ignored. |
| **Set Page Length (Inches)** | |
| Control Sequence | PAGE_LENGTH_TYPE?=INCH<br>SET_PAGE_LENGTH= |
| | When the data is defined in the control sequence for SET PAGE LENGTH (INCHES) and any data is not defined in the control sequence for SET PAGE LENGTH (LINES), this field is migrated. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | None. |
| | This field is ignored. |
| Top Margin Size | None. |
| | This field is ignored. |
| Bottom Margin Size | None. |
| | This field is ignored. |
| **Set Page Length (Lines)** | |
| Control Sequence | PAGE_LENGTH_TYPE?=LINE<br>SET_PAGE_LENGTH= |
| | When the data is defined in the control sequence for the SET PAGE LENGTH (LINES), this field is migrated. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | None. |
| | This field is ignored. |
| Top Margin Size | None. |
| | This field is ignored. |
| Bottom Margin Size | None. |
| | This field is ignored. |
| **Set Left Margin (Inches)** | |

| *Table 13-7 (Page 11 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Control Sequence | None. |
| | This field is ignored. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| X/Y | None. |
| | This field is ignored. |
| **Set Left Margin (Columns)** | |
| Control Sequence | SET_HORIZONTAL_MARGIN= |
| | When the data is defined in the control sequence field for the SET LEFT MARGIN (COLUMNS), this field is migrated. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| **Carrier Return/Line Feed** | |
| ***Continuous Forms*** | |

| *Table 13-7 (Page 12 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Carrier Return | CARRIAGE_RETURN= |
| (Continuous Forms) | This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Carrier Return field for the Continuous Forms and<br>– Any data is not defined in the Carrier Return field for the Manual Feed and Automatic Feed<br>Case 2<br>– When the data is defined in the Carrier Return field for the Continuous Forms and<br>– The same data is defined in the Carrier Return field for the Manual Feed and<br>– Any data is not defined in the Carrier Return field for the Automatic Feed<br>Case 3<br>– When the data is defined in the Carrier Return field for the Continuous Forms and<br>– The same data is defined in the Carrier Return field for the Automatic Feed and<br>– Any data is not defined in the Carrier Return field for the Manual Feed<br>Case 4<br>– When the data is defined in the Carrier Return field for the Continuous Forms and<br>– The same data is defined in the Carrier Return field for the Automatic Feed and Manual Feed |

*Table 13-7 (Page 13 of 26). Migration from the PFT to the PDF*

| PFT Field Name | PDF Field Name<br>Description |
|---|---|
| Line Feed<br>(Continuous Forms) | LINE_FEED=<br>This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Line Feed field for the Continuous Forms and<br>– Any data is not defined in the Line Feed Line field for the Manual Feed and Automatic Feed<br>Case 2<br>– When the data is defined in the Line Feed field for the Continuous Forms and<br>– The same data is defined in the Line Feed field for the Manual Feed and<br>– Any data is not defined in the Line Feed field for the Automatic Feed<br>Case 3<br>– When the data is defined in the Line Feed field for the Continuous Forms and<br>– The same data is defined in the Line Feed field for the Automatic Feed and<br>– Any data is not defined in the Line Feed field for the Manual Feed<br>Case 4<br>– When the data is defined in the Line Feed field for the Continuous Forms and<br>– The same data is defined in the Line Feed field for the Automatic Feed and Manual Feed |

| *Table 13-7 (Page 14 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name**<br>**Description** |
| ***Manual Feed*** | |
| Carrier Return<br>(Manual Feed) | CARRIAGE_RETURN=<br>This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Carrier Return field for the Manual Feed and<br>– Any data is not defined in the Carrier Return field for the Continuous Feed and Automatic Feed<br>Case 2<br>– When the data is defined in the Carrier Return field for the Manual Feed and<br>– The same data is defined in the Carrier Return field for the Continuous Forms and<br>– Any data is not defined in the Carrier Return field for the Automatic Feed<br>Case 3<br>– When the data is defined in the Carrier Return field for the Manual Feed and<br>– The same data is defined in the Carrier Return field for the Automatic Feed and<br>– Any data is not defined in the Carrier Return field for the Continuous Form<br>Case 4<br>– When the data is defined in the Carrier Return field for the Manual Feed and<br>– The same data is defined in the Carrier Return field for the Automatic Feed and Continuous Form |

| *Table 13-7 (Page 15 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Line Feed | LINE_FEED= |
| (Manual Feed) | This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Line Feed field for the Manual Feed and<br>– Any data is not defined in the Line Feed Line field for the Continuous Forms and Automatic Feed<br>Case 2<br>– When the data is defined in the Line Feed field for the Manual Feed and<br>– The same data is defined in the Line Feed field for the Continuous Forms and<br>– Any data is not defined in the Line Feed field for the Automatic Feed<br>Case 3<br>– When the data is defined in the Line Feed field for the Manual Feed and<br>– The same data is defined in the Line Feed field for the Automatic Feed and<br>– Any data is not defined in the Line Feed field for the Continuous Form<br>Case 4<br>– When the data is defined in the Line Feed field for the Manual Feed and<br>– The same data is defined in the Line Feed field for the Automatic Feed and Continuous Form |

| *Table 13-7 (Page 16 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name**<br>**Description** |
| ***Automatic Feed*** | |
| Carrier Return<br>(Automatic Feed) | CARRIAGE_RETURN=<br>This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Carrier Return field for the Automatic Feed and<br>– Any data is not defined in the Carrier Return field for the Continuous Feed and Manual Feed<br>Case 2<br>– When the data is defined in the Carrier Return field for the Automatic Feed and<br>– The same data is defined in the Carrier Return field for the Continuous Forms and<br>– Any data is not defined in the Carrier Return field for the Manual Feed<br>Case 3<br>– When the data is defined in the Carrier Return field for the Automatic Feed and<br>– The same data is defined in the Carrier Return field for the Manual Feed and<br>– Any data is not defined in the Carrier Return field for the Continuous Form<br>Case 4<br>– When the data is defined in the Carrier Return field for the Automatic Feed and<br>– The same data is defined in the Carrier Return field for the Manual Feed and Continuous Form |

| *Table 13-7 (Page 17 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Line Feed | LINE_FEED= |
| (Automatic Feed) | This field is migrated for the following cases:<br>Case 1<br>– When the data is defined in the Line Feed field for the Automatic Feed and<br>– Any data is not defined in the Line Feed Line field for the Continuous Forms and Manual Feed<br>Case 2<br>– When the data is defined in the Line Feed field for the Automatic Feed and<br>– The same data is defined in the Line Feed field for the Continuous Forms and<br>– Any data is not defined in the Line Feed field for the Manual Feed<br>Case 3<br>– When the data is defined in the Line Feed field for the Automatic Feed and<br>– The same data is defined in the Line Feed field for the Manual Feed and<br>– Any data is not defined in the Line Feed field for the Continuous Form<br>Case 4<br>– When the data is defined in the Line Feed field for the Automatic Feed and<br>– The same data is defined in the Line Feed field for the Manual Feed and Continuous Form |
| **Multiple Copies** | |
| ***Print without Clearing Page from:*** | |
| Top Tray | None. |
| | This field is ignored. |
| Bottom Tray | None. |
| | This field is ignored. |
| Envelope Tray | None. |
| | This field is ignored. |
| Manual Tray | None. |
| | This field is ignored. |
| Clear Page Buffer | None. |
| | This field is ignored. |
| ***Multiple Copies Variable Control*** | |

| *Table 13-7 (Page 18 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Control Sequence | None. |
| | This field is ignored. |
| Maximum | None. |
| | This field is ignored. |
| Offset | None. |
| | This field is ignored. |
| **Landscape Paper Handling** | |
| ***Bottom Tray Feed*** | |
| Bottom Tray Feed | SET_LANDSCAPELEFT_ORIENT= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control sequence for the landscape orientation. For this, the PFT Migration Utility divides the control sequence into two parts. The control sequence for the drawer select and paper feed is ignored, because this control sequence is migrated when the data for paper-handling is processed. The control sequence for the landscape orientation is migrated to SET_LANDSCAPE_ORIENT=. (See “Definition of Paper-Handling Migration” on page 13-44.) |
| ***Top Tray Feed*** | |
| Top Tray Feed | SET_LANDSCAPELEFT_ORIENT= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control sequence for the landscape orientation. For this, the PFT Migration Utility divides the control sequence into two parts. The control sequence for the drawer select and paper feed is ignored, because this control sequence is migrated when the data for paper-handling is processed. The control sequence for the landscape orientation is migrated to SET_LANDSCAPE_ORIENT=. (See “Definition of Paper-Handling Migration” on page 13-44.) |

| *Table 13-7 (Page 19 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***Envelope Feed*** | |
| Envelope Feed | SET_LANDSCAPELEFT_ORIENT= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control sequence for the landscape orientation. For this, the PFT Migration Utility divides the control sequence into two parts. The control sequence for the drawer select and paper feed is ignored, because this control sequence is migrated when the data for paper-handling is processed. The control sequence for the landscape orientation is migrated to SET_LANDSCAPE_ORIENT=. (See “Definition of Paper-Handling Migration” on page 13-44.) |
| ***Manual Feed*** | |
| Manual Feed | SET_LANDSCAPELEFT_ORIENT= |
| | If the data is defined in some fields for landscape paper handling, the PFT Migration Utility assumes that this control sequence includes the control sequence for the landscape orientation. For this, the PFT Migration Utility divides the control sequence into two parts. The control sequence for the drawer select and paper feed is ignored, because this control sequence is migrated when the data for paper-handling is processed. The control sequence for the landscape orientation is migrated to SET_LANDSCAPE_ORIENT=. (See “Definition of Paper-Handling Migration” on page 13-44.) |
| **Type Style Definition** | |
| ***Default Type Style Definition*** | |
| PC Character Set | None. |
| | This field is ignored. |
| Initial Control Sequence | None. |
| | This field is ignored. |
| Ending Control Sequence | None. |
| | This field is ignored. |
| ***Individual Type Style Definition*** | |
| Type Style Number | SET_GFID_ |
| | This number is appended as a four-digit number after the string SET_GFID_. For example, when the type style number **9** is defined, **0009** is appended after the string SET_GFID_ and SET_GFID_0009= is migrated. And the numbers that are supported by PC400 are migrated. The numbers that are not supported by PC400 are not ignored. |
| PC Character Set | None. |
| | This field is ignored. |

| *Table 13-7 (Page 20 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Initial Control Sequence | SET_GFID_xxxx= |
| | This control sequence is appended after the string SET_GFID_xxxx=, xxxx is the four-digit number that is defined in the type style number field. |
| Ending Control Sequence | SET_GFID_xxxx= |
| | This control sequence is appended before Initial Control Sequence of all migrated SET_GFID_xxxx= fields as follows:<br><br>SET_GFID_ 11=1B 57 , ←Ending Control Sequence<br>1B 5 ←Initial Control Sequence |
| Characters | None. |
| | This field is ignored. |
| Initial Control Sequence | None. |
| | This field is ignored. |
| Ending Control Sequence | None. |
| | This field is ignored. |
| Symbols | None. |
| | This field is ignored. |
| Initial Control Sequence | None. |
| | This field is ignored. |
| Ending Control Sequence | None. |
| | This field is ignored. |
| ***Group Type Style Definition*** | |
| Group Identifier | None. |
| | This field is ignored. |
| Group Identifier Comment | None. |
| | This field is ignored. |
| Type Style Number | SET_GFID_ |
| | This number is appended as a four-digit number after the string SET_GFID_. For example, when the type style numbers 1, 2, 3, and 4 are defined, **0001**, **0002**, **0003**, and **0004** are appended after the string SET_GFID_ and SET_GFID_0001= , SET_GFID_0002, SET_GFID_0003, and SET_GFID_0004= are migrated, because the PC400 does not have the group type style definition. The type style numbers that are not supported by PC400 are not migrated. |
| PC Character Set | None. |
| | This field is ignored. |

| *Table 13-7 (Page 21 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Initial Control Sequence | SET_GFID_xxxx= |
| | This control sequence is appended after the string SET_GFID_xxxx=. xxxx is the four-digit number that is defined in the type style number field. |
| Ending Control Sequence | SET_GFID_xxxx= |
| | This control sequence is appended before Initial Control Sequence of all migrated SET_GFID_xxxx= fields as follows:<br>SET_GFID_ 11=1B 57 , ←Ending Control Sequence<br>1B 5 ←Initial Control Sequence |
| Characters | None. |
| | This field is ignored. |
| Initial Control Sequence | None. |
| | This field is ignored. |
| Ending Control Sequence | None. |
| | This field is ignored. |
| Symbols | None. |
| | This field is ignored. |
| Initial Control Sequence | None. |
| | This field is ignored. |
| Ending Control Sequence | None. |
| | This field is ignored. |
| ***Character Set Number*** | |
| Character Set Number | None. |
| | This field is ignored. |

| Table 13-7 (Page 22 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| **Slot Selection** | |
| ***Slot 1 Sequence*** | |
| Slot 1 Sequence | None. |
| | This field is ignored. |
| ***Slot 2 Sequence*** | |
| Slot 2 Sequence | None. |
| | This field is ignored. |
| ***Slot 3 Sequence*** | |
| Slot 3 Sequence | None. |
| | This field is ignored. |
| ***Stop Sequence*** | |
| Stop Sequence | None. |
| | This field is ignored. |
| **User-Defined Control** | |
| ***Parameters of the SET ENVELOPE SIZE Command*** | |
| Control Number: 984 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***ESC Sequence of the SET ENVELOPE SIZE Command*** | |
| Control Number: 985 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Parameters of the SET PAGE SIZE Command*** | |
| Control Number: 986 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***ESC Sequence of the SET PAGE SIZE Command*** | |

| *Table 13-7 (Page 23 of 26). Migration from the PFT to the PDF* | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Control Number: 987 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Printer Data Stream*** | |
| Control Number: 988 | None. |
| | This field is ignored. |
| Control Sequence | SET_FONT_GLOBAL=1B 5B 49 word-value(LH) word-value(HL) word-value(HL) byte-value word-value(HL) |
| | When **04** is defined in this field, SET_FONT_GLOBAL=1B 5B 49 ... word-value(HL) is migrated. When the other value is defined, this field is ignored. **04** means IBM Personal Printer Data Stream Level 2 or higher. When the migration is done for paper-handling, use this information. (See “Definition of Paper-Handling Migration” on page 13-44.) |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Duplex Long Edge*** | |
| Control Number: 989 | None. |
| | This field is ignored. |
| Control Sequence | SET_DUPLEX= |
| | When the data is defined in the control sequence for the duplex long edge, the data is appended to the string SET_DUPLEX=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Duplex Short Edge*** | |
| Control Number: 990 | None. |
| | This field is ignored. |
| Control Sequence | SET_DUPLEX_TUMBLE= |
| | When the data is defined in the control sequence for the duplex short edge, the data is appended to the string SET_DUPLEX_TUMBLE=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Simplex*** | |
| Control Number: 991 | None. |
| | This field is ignored. |

| Table 13-7 (Page 24 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Control Sequence | RESET_DUPLEX= |
| | When the data is defined in the control sequence for the simplex, the data is appended to the string RESET_DUPLEX=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Jog the Output Tray*** | |
| Control Number: 992 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Normal Portrait Orientation*** | |
| Control Number: 993 | None. |
| | This field is ignored. |
| Control Sequence | SET_PORTRAIT_ORIENT= |
| | When the data is defined in the control field for the normal portrait orientation, the data is appended to the string SET_PORTRAIT_ORIENT=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Landscape Left*** | |
| Control Number: 994 | None. |
| | This field is ignored. |
| Control Sequence | SET_LANDSCAPELEFT_ORIENT= |
| | When the data is defined in the control field for the landscape left, the data is appended to the string SET_LANDSCAPELEFT_ORIENT=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***Portrait Upside-Down Orientation*** | |
| Control Number: 995 | None. |
| | This field is ignored. |
| Control Sequence | SET_PORTRAITUPDWN_ORIENT= |
| | When the data is defined in the control field for the portrait upside-down orientation, the data is appended to the string SET_PORTRAITUPDWN_ORIENT=. |
| Control Sequence Filename | None. |
| | This field is ignored. |

| Table 13-7 (Page 25 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| ***Landscape-Right*** | |
| Control Number: 996 | None. |
| | This field is ignored. |
| Control Sequence | SET_LANDSCAPERGHT_ORIENT= |
| | When the data is defined in the control field for the landscape right, the data is appended to the string SET_LANDSCAPERGHT_ORIENT=. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***COR in 10 Pitch*** | |
| Control Number: 997 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***COR in 12 Pitch*** | |
| Control Number: 998 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| ***COR in 15 Pitch*** | |
| Control Number: 999 | None. |
| | This field is ignored. |
| Control Sequence | None. |
| | This field is ignored. |
| Control Sequence Filename | None. |
| | This field is ignored. |
| **Function Selection Test Responses** | |
| Superscript /Subscript | None. |
| | This data is ignored. |
| Underline | None. |
| | This data is ignored. |
| Emphasis (Bold) | None. |
| | This data is ignored. |

| Table 13-7 (Page 26 of 26). Migration from the PFT to the PDF | |
|---|---|
| **PFT Field Name** | **PDF Field Name** |
| | **Description** |
| Form Feed | None. |
| | This data is ignored. |
| Back Space | BACKSPACE= |
| | This field is migrated when you type YES or NO in response to the prompt during the Backspace Function Selection Test. |
| Midline Pitch Change | None. |
| | This data is ignored. |
| Horizontal Character Spacing | None. |
| | This data is ignored. |
| First Character Position | None. |
| | This data is ignored. |
| PSM | None. |
| | This data is ignored. |
| Cursor Draw | None. |
| | This data is ignored. |

**Note:** When you migrate **IBM3812.PFT** and **IBM3812.MNL**, the following fields are added to **IBM3812.PDF**:

```
FORWARD_VERTICAL_STEP_FEED=1B 5B 43  3    E3 word-value(LH)
VERTICAL_PEL=24
```

## Definition of Paper-Handling Migration

The PFT Migration Utility migrates the data for paper-handling and landscape paper handling as follows:

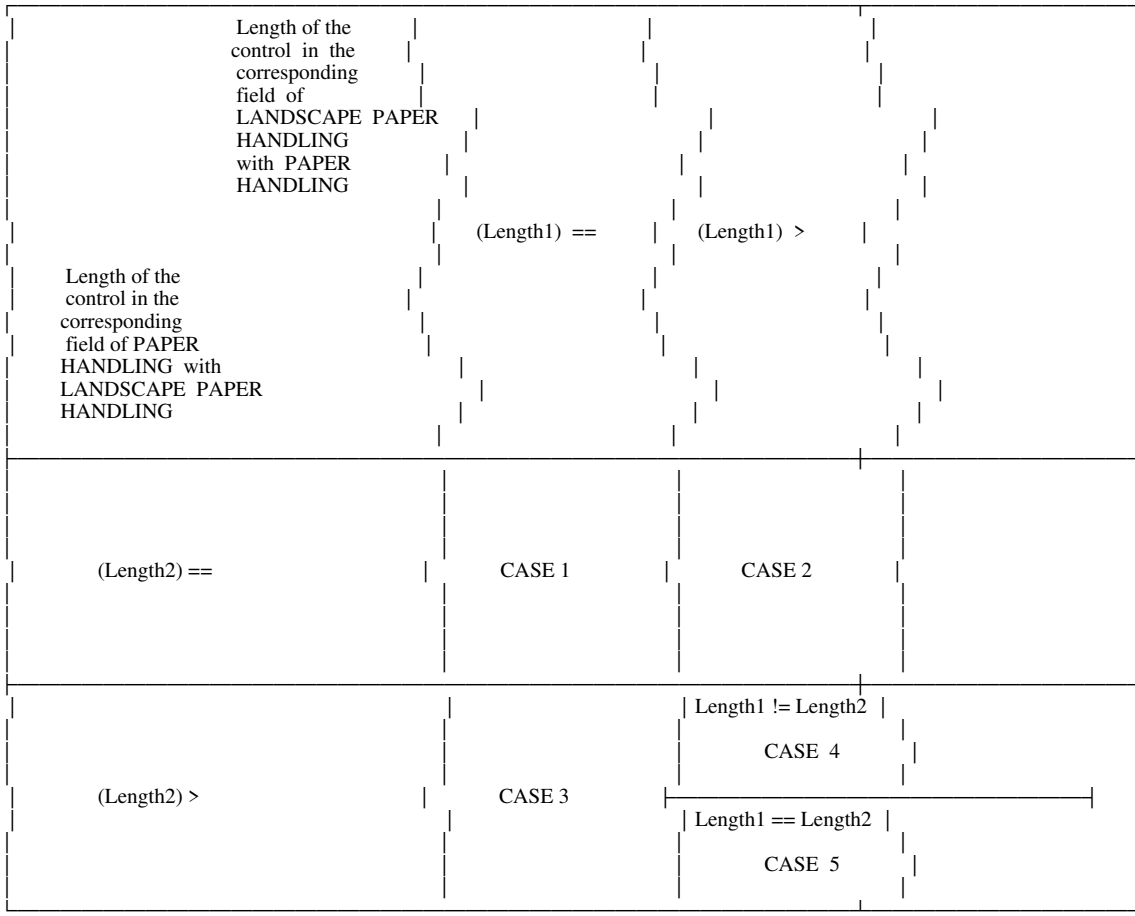
1. The PFT Migration Utility checks whether the landscape paper handling controls are defined.
2. If the landscape paper handling controls are defined, the PFT Migration Utility assumes that the paper-handling control sequences set the page orientation to portrait. The controls in each landscape paper handling control sequence set the tray select, the feed controls, and the page orientation to landscape.
3. If the landscape paper handling controls are not defined, the paper-handling controls do not set the page orientation to portrait. If a personal printer supports normal portrait, landscape-left, portrait-upside-down, and landscape-right orientation, the page-orientation controls are defined in the appropriate user-defined controls.

***If the landscape paper handling controls are not defined:*** When the paper-handling controls are defined, the controls are migrated as follows:

| PFT Fields | | PDF Fields |
|---|---|---|
| Bottom Tray Select & Feed | —— | SELECT_DRAWER2= |
| Top Tray Select & Feed | —— | SELECT_DRAWER1= |
| Envelope Tray Select & Feed | —— | SELECT_ENVELOPE= |
| Manual Select & Feed | —— | SELECT_DRAWER3= |

***If the landscape paper handling controls are defined:*** When the paper-handling controls are defined, they set the page orientation to portrait. The landscape paper handling controls set the page orientation to landscape.

The PFT Migration Utility migrates the controls as follows:




Note
"==" means "equals to."
"!=" means "does not equal to."

**Case 1**
Since both of the fields are not defined, no data is migrated.

**Example:**
No data is migrated to SELECT_DRAWER2= under the following conditions. For this, SELECT_DRAWER2= is not written in the output file.

No data is defined in the bottom tray select and feed for the paper-handling.

No data is defined in the bottom tray select and feed for the landscape paper handling.

**Case 2**
Since no data is defined in the field for paper-handling, the PFT Migration Utility cannot compare the data in the corresponding field with the data for the landscape paper handling. The data for landscape paper handling is migrated to the drawer selection field of PDF, including the control of the landscape orientation.

**Example:**
The control of the top tray select and feed for landscape paper handling is migrated to SELECT_DRAWER1= under the following conditions:

No data is defined in the top tray select and feed for the paper-handling.

The control is defined in the top tray select and feed for landscape paper handling.

**Case 3**
Since no data is defined in the field for landscape paper handling, the PFT Migration Utility cannot compare the data in the corresponding field with the data for the paper-handling. The data for paper-handling is migrated to the drawer selection field of PDF, including the control of the portrait orientation.

**Example:**
The control of the manual select and feed for paper-handling is migrated to SELECT_DRAWER3= under the following conditions:

The control is defined in the manual select and feed for paper-handling.

No data is defined in the top tray select and feed for the landscape paper handling.

**Case 4**
Since the length is different, no data is migrated.

**Example:**
No data is migrated to SELECT_DRAWER2= under the following conditions. For this, SELECT_DRAWER2= is not written in the output file.

The data is defined in the bottom tray select and feed for paper-handling, and the length is 8.

The data is defined in the bottom tray select and feed for the landscape paper handling, and the length is 10.

**Case 5**
The PFT Migration Utility compares the data for paper-handling with the data for landscape paper handling as follows:

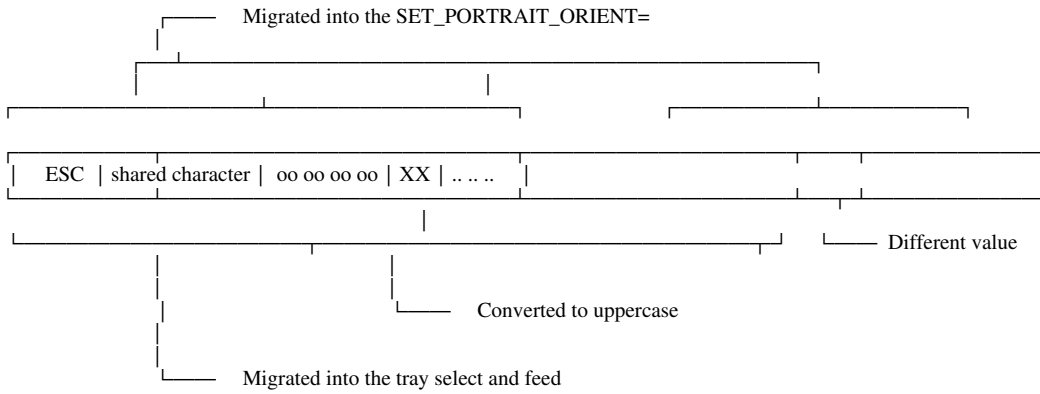
If a different value is found in the data, search the control backward for the escape character hex 1B.

If the escape character is found in the middle of the control, divide the control into two parts. The PFT Migration Utility assumes that the first part is the control for the tray select and feed, and the second part is the control for the page orientation. The PFT Migration Utility migrates the first part of the paper-handling control into the tray select and feed, the second part of the paper-handling control into the SET_PORTRAIT_ORIENT=, and the second part of the landscape paper handling control into SET_LANDSCAPELEFT_ORIENT=.

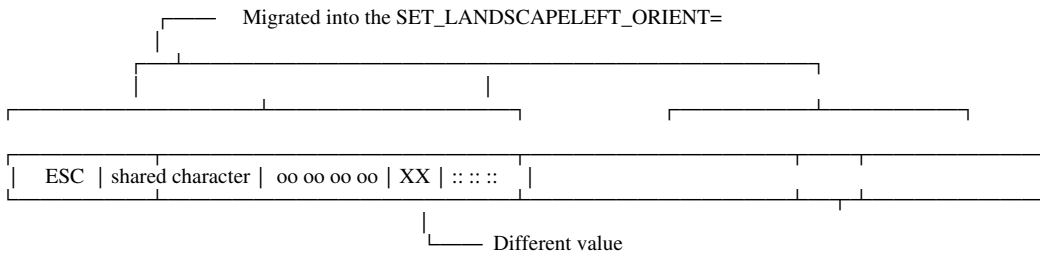
If the escape character is found at the top of the control and 03 (= HP PCL) is defined in the user-defined control 988, the PFT Migration Utility assumes that the controls are combined. For this, the control begins with the escape character and the two shared characters. The PFT Migration Utility assumes that the last character of the first part is a lowercase letter and converts it to an uppercase letter to indicate that it is a terminating character.

The PFT Migration Utility divides the controls into the two parts as follows:

**Control for Paper-Handling**




**Control for Landscape Paper Handling**




If the escape character is found, but the data stream is not HP PCL, the PFT Migration Utility displays the error message to indicate that the PFT Migration Utility cannot migrate the data.

If the escape character is not found, the PFT Migration Utility displays the error message to indicate that the PFT Migration Utility cannot migrate the data.

If a different value is not found, the same control is defined for portrait paper-handling and landscape paper handling.

The PFT Migration Utility migrates the data in the following order:

1. Top Tray Select and Feed
2. Bottom Tray Select and Feed
3. Manual Select and Feed
4. Envelope Tray Select and Feed

The migration stops for the page orientation, SET_PORTRAIT_ORIENT= and SET_LANDSCAPELEFT_ORIENT=, when the controls for the page orientation are

found. For example, the controls for the page orientation are found when the data is migrated for the Bottom Tray Select and Feed. The PFT Migration Utility does not care about the page orientation when migrating the data Manual Select and Feed, and Envelope Tray Select and Feed.

## Sample of the Character Definitions

If you want to change the character definitions in the distributed PDF and PDT by Personal Communications:

1. Copy the PDF for backup.
2. Change the character definitions in the PDF.
3. Convert the new PDF to a PDT file.
4. Test your printer by using the new PDT file.

Following is a sample of the character definitions. Refer to “Customizing the PDT” on page 10-1 for more information about the PDF and PDT file.

```
/                                                    /
/ This is the sample of the Roman 8 character set for the Hewlett      /
/ Packard printers.                                                    /
/                                                    /
/                                                    /
/                          Character  Definitions                      /
/                                                    /
SPACE = 2
EXCLAMATION_POINT = 21
QUOTATION_MARKS = 22
NUMBER_SIGN = 23
DOLLAR_SIGN = 24
PERCENT_SIGN = 25
AMPERSAND = 26
APOSTROPHE = 27
LEFT_PARENTHESIS = 28
RIGHT_PARENTHESIS = 29
ASTERISK = 2A
PLUS_SIGN = 2B
COMMA = 2C
HYPHEN = 2D
PERIOD = 2E
SLASH = 2F
ZERO =
ONE = 1
TWO = 2
THREE = 3
FOUR = 4
FIVE = 5
SIX = 6
SEVEN = 7
EIGHT = 8
NINE = 9
COLON = 3A
SEMICOLON = 3B
LESS_THAN_SIGN =3C
EQUAL_SIGN = 3D
GREATER_THAN_SIGN = 3E
QUESTION_MARK = 3F
AT_SIGN = 4
A_CAPITAL = A
B_CAPITAL = B
C_CAPITAL = C
D_CAPITAL = D
E_CAPITAL = E
F_CAPITAL = F
G_CAPITAL = G
H_CAPITAL = H
I_CAPITAL = I
J_CAPITAL = J
K_CAPITAL = K
```

```
L_CAPITAL = L
M_CAPITAL = M
N_CAPITAL = N
O_CAPITAL = O
P_CAPITAL = P
Q_CAPITAL = Q
R_CAPITAL = R
S_CAPITAL = S
T_CAPITAL = T
U_CAPITAL = U
V_CAPITAL = V
W_CAPITAL = W
X_CAPITAL = X
Y_CAPITAL = Y
Z_CAPITAL = Z
LEFT_BRACKET = 5B
BACKSLASH = 5C
RIGHT_BRACKET = 5D
CIRCUMFLEX_ACCENT = 5E
UNDERLINE = 5F
A_SMALL = a
B_SMALL = b
C_SMALL = c
D_SMALL = d
E_SMALL = e
F_SMALL = f
G_SMALL = g
H_SMALL = h
I_SMALL = i
J_SMALL = j
K_SMALL = k
L_SMALL = l
M_SMALL = m
N_SMALL = n
O_SMALL = o
P_SMALL = p
Q_SMALL = q
R_SMALL = r
S_SMALL = s
T_SMALL = t
U_SMALL = u
V_SMALL = v
W_SMALL = w
X_SMALL = x
Y_SMALL = y
Z_SMALL = z
LEFT_BRACE = 7B
VERTICAL_BAR = 7C
RIGHT_BRACE = 7D
TILDE_ACCENT = 7E
A_GRAVE_CAPITAL = A1
A_CIRCUMFLEX_CAPITAL = A2
E_GRAVE_CAPITAL = A3
E_CIRCUMFLEX_CAPITAL = A4
E_DIAERESIS_CAPITAL = A5
I_CIRCUMFLEX_CAPITAL = A6
I_DIAERESIS_CAPITAL = A7
ACUTE_ACCENT = A8
GRAVE_ACCENT = A9
DIAERESIS = AB
U_GRAVE_CAPITAL = AD
U_CIRCUMFLEX_CAPITAL = AE
OVERLINE = B
Y_ACUTE_CAPITAL = B1
Y_ACUTE_SMALL = B2
DEGREE_SYMBOL = B3
C_CEDILLA_CAPITAL = B4
C_CEDILLA_SMALL = B5
N_TILDE_CAPITAL = B6
N_TILDE_SMALL = B7
EXCLAMATION_POINT_INVERTED = B8
QUESTION_MARK_INVERTED = B9
```

```
INTERNATIONAL_CURRENCY_SYMBOL = BA
POUND_SIGN = BB
YEN_SIGN = BC
SECTION_SYMBOL = BD
FLORIN_SIGN = BE
CENT_SIGN = BF
A_CIRCUMFLEX_SMALL = C
E_CIRCUMFLEX_SMALL = C1
O_CIRCUMFLEX_SMALL = C2
U_CIRCUMFLEX_SMALL = C3
A_ACUTE_SMALL = C4
E_ACUTE_SMALL = C5
O_ACUTE_SMALL = C6
U_ACUTE_SMALL = C7
A_GRAVE_SMALL = C8
E_GRAVE_SMALL = C9
O_GRAVE_SMALL = CA
U_GRAVE_SMALL = CB
A_DIAERESIS_SMALL = CC
E_DIAERESIS_SMALL = CD
O_DIAERESIS_SMALL = CE
U_DIAERESIS_SMALL = CF
A_OVERCIRCLE_CAPITAL = D
I_CIRCUMFLEX_SMALL = D1
O_SLASH_CAPITAL = D2
AE_DIPTHONG_CAPITAL = D3
A_OVERCIRCLE_SMALL = D4
I_ACUTE_SMALL = D5
O_SLASH_SMALL = D6
AE_DIPTHONG_SMALL = D7
A_DIAERESIS_CAPITAL = D8
I_GRAVE_SMALL = D9
O_DIAERESIS_CAPITAL = DA
U_DIAERESIS_CAPITAL = DB
E_ACUTE_CAPITAL = DC
I_DIAERESIS_SMALL = DD
SHARP_S_SMALL = DE
O_CIRCUMFLEX_CAPITAL = DF
A_ACUTE_CAPITAL = E
A_TILDE_CAPITAL = E1
A_TILDE_SMALL = E2
ETH_ICELANDIC_CAPITAL = E3
ETH_ICELANDIC_SMALL = E4
I_ACUTE_CAPITAL = E5
I_GRAVE_CAPITAL = E6
O_ACUTE_CAPITAL = E7
O_GRAVE_CAPITAL = E8
O_TILDE_CAPITAL = E9
O_TILDE_SMALL = EA
U_ACUTE_CAPITAL = ED
Y_DIAERESIS_SMALL = EF
THORN_ICELANDIC_CAPITAL = F
THORN_ICELANDIC_SMALL = F1
MIDDLE_DOT_ACCENT = F2
MICRO_SYMBOL = F3
PARAGRAPH_SYMBOL = F4
THREE_QUARTERS = F5
ONE_QUARTER = F7
ONE_HALF = F8
ORDINAL_INDICATOR_FEMININE = F9
ORDINAL_INDICATOR_MASCULINE = FA
LEFT_ANGLE_QUOTES = FB
RIGHT_ANGLE_QUOTES = FD
PLUS_OR_MINUS_SIGN = FE

/                                   /
/          End of Character Definitions          /
/                                   /
```

# Chapter 14. Field Attribute Codes

The following table explains the field attribute codes used in PC400.

*Table 14-1. Meanings of Field Attribute Codes*

| Hex Code | Meaning |
|---|---|
| 20 | Green |
| 21 | Green, reversed image |
| 22 | White |
| 23 | White, reversed image |
| 24 | Green, underlined |
| 25 | Green, underlined, reversed image |
| 26 | White, underlined |
| 27 | Nondisplay |
| 28 | Red |
| 29 | Red, reversed image |
| 2A | Red |
| 2B | Red, reversed image |
| 2C | Red, underlined |
| 2D | Red, underlined, reversed image |
| 2E | Red, underlined |
| 2F | Nondisplay |
| 30 | Sky blue with column delimiter |
| 31 | Sky blue, column delimiter, reversed image |
| 32 | Yellow with column delimiter |
| 33 | Yellow, column delimiter, reversed image |
| 34 | Sky blue, underlined, with column delimiter |
| 35 | Sky blue, underlined, reversed image, with column delimiter |
| 36 | Yellow, underlined, with column delimiter |
| 37 | Nondisplay with column delimiter |
| 38 | Purple |
| 39 | Purple, reversed image |
| 3A | Blue |
| 3B | Blue, reversed image |
| 3C | Purple, underlined |
| 3D | Purple, underlined, reversed image |
| 3E | Blue, underlined |
| 3F | Nondisplay with column delimiter |

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# Chapter 15. Data Transfer for PC400

This chapter explains file-description files and data conversions for the data transfer function.

## Data Transfer Function Overview

The PC400 data transfer function transfers data to or from the AS/400 system and a workstation.

PC400 can transfer data between the host and workstation. The data transfer function can be used by selecting the **Data Transfer** icon.

Transferring data, described in this chapter, is quite different from transferring files, which is described in Chapter 16. The main differences are listed below:

| Type of Transfer | Products required on an AS/400 system | Access Method | Sending and receiving unit | Type of connection to an AS/400 system |
|---|---|---|---|---|
| File Transfer | Personal Communications Tools (APVAFILE) | Transfer menu in session window | Entire file | Display session |
| Data Transfer | PC Support/400 V2R2 or V2R3 or OS/400 V3R1 or later[1] | Data Transfer icon | Field, record, or file in a database | Router session |
| **Note 1:** OS/400 provides the host transaction program for Data Transfer. | | | | |

## Transferring Files from an AS/400 System to a Workstation

When using a workstation, you can retrieve and use data from the following file types on an AS/400 system:

Physical database
Logical database
Distributed data management (DDM)

When retrieving files, you can:

Control which records (and which fields within a record) are retrieved.
Control the ordering of records and the ordering of fields within the record.
Select a subset of the records.
Group records into summary records.
Join two or more files.
Specify formats and separators of date and time fields.
Specify the decimal separator character.

The following output destinations can be specified:

Display
Disk
Printer

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# Transferring Files from a Workstation to an AS/400 System

The PC-to-AS/400 transfer function enables the transfer of data from a workstation to an AS/400 physical file. Data can be transferred to any of the following destinations:

Existing members in an existing AS/400 physical file
New members in an existing AS/400 physical file
New members in a new AS/400 physical file

**Note:** Data cannot be transferred from a workstation file to an AS/400 logical file.

Note the following considerations when transferring data.

## Transferring Data to Existing Members in an Existing File

Note the following considerations when transferring data from a workstation to an existing AS/400 member.

When data is transferred to an existing member, data in that member is replaced with that transferred from a workstation.

When AS/400 members already contain data, a message appears, indicating that the data in the existing members will be replaced with the data that is about to be transferred.

Consider the effect of returning data that was previously transferred from the AS/400 system (such as when an AS/400 master file is updated on a workstation).

For example, you can transfer only the field subset of an AS/400 file by issuing a transfer request from the AS/400 system to a workstation. In this case, when returning data from the workstation to the AS/400 system, only the subset included in that AS/400 file can be transferred. Other fields that had been defined in the AS/400 file but not transferred are filled with blanks if they are character fields or, if they are numeric fields, with zeros or the values specified at file creation.

Therefore, the data must be transferred to another AS/400 file and the transferred data must be embedded in the AS/400 file by running the AS/400 application program. Follow this procedure to control the update processing for an AS/400 master file.

To prevent users from transferring data to a certain AS/400 file, check that the authority level for that file is defined correctly.

## Transferring Data to New Members in an Existing File

You can transfer the data in a workstation file to new members in an existing AS/400 file. The transfer function automatically creates these members in the specified file in the specified library. New members are created according to the file description in the existing file.

Be particularly careful when only the field subset of the AS/400 file can be transferred from the AS/400 system to a workstation by the previous transfer request. When data is returned to the AS/400 system, new members can receive only the subset defined in that AS/400 file. Other character fields that are defined, but not transferred are filled with blanks. Numeric fields are filled with zeros or the valued specified at file creation. The date, time, and time-stamp fields use AS/400 default values.

## Transferring Data to New Members in a New File

By using a transfer request from a workstation to the AS/400 system, you can transfer data to new members in a new AS/400 file. This is one of the safest transfer methods, because data already stored in the AS/400 file is not replaced with that transferred from the workstation.

There are two ways of transferring data to new members in a new AS/400 file. The method used depends on the data to be transferred.

For data that is broken up into fields, correct conversion is achieved by transferring it in units of fields. Specify use of the workstation file-description file at file transfer. In addition, specify data as the type of the AS/400 file.

When an AS/400 file and its members are created, the transfer function must access the description of the format of each field to be transferred in the AS/400 file. You can get this description, called a field-reference file, from the AS/400 file. To create an AS/400 file and its members, specify the name of this AS/400 field reference file, as well as the parameters for the other files and members. Note that only the fields to be transferred are defined in a new file.

For data consisting only of text or source statement records, it is not necessary to break up the records into fields. In addition, the workstation file-description file is not required to transfer data. In other words, an AS/400 physical source file is created.

## Transferring Data to an AS/400 Data File and Source File

You can transfer data to the following two types of AS/400 physical files.

**Physical data file** The members of a physical data file can contain numeric and character data of any AS/400 data type. To transfer data to a physical data file, use the workstation file-description file to define how data is stored in a workstation data file. Besides this definition, the file description of the AS/400 file is required to ensure correct conversion of the data.

When data is transferred to an existing AS/400 file, the file description becomes part of the AS/400 file. When data is transferred to a new AS/400 file, the file description is included in the AS/400 field-reference file.

**Physical source file** Normally, a physical source file stores no data. It contains only text or source statements, as follows:

- The first part (field) of a source file always contains numbers indicating the order.
- The second part (field) of a source file always contains the date on which the file was created.
- The third part (field) of a source file contains the text of the file. This part can contain data fields of character type or zoned type only. Physical source files provide the optimum means of transferring text or source statements with a workstation.

Note the following considerations when transferring data to and from an AS/400 physical source file:

- To transfer text from the AS/400 system to a workstation, specify the name of the source file and members in **FROM**. Specify an asterisk (*) in **SELECT**. This informs the AS/400 system that only text is transferred from the source file, with the order number and date fields excluded.

- The AS/400 text must be stored in the workstation code text file. Normally, a workstation text editing program can be used to manipulate this workstation code text file.
- Specify that the file-description file is not to be stored for that workstation file. Because text is assumed to be a record consisting only of character data, it is not necessary to define fields.
- To return text from a workstation file to an AS/400 file, specify the type of the workstation file containing the text. This is almost always workstation code text. Specification of the file-description file is not required.
- To create a new AS/400 file and its members, specify a valid record length. This record length must be equal to the maximum record length of the workstation file, plus 12 bytes. This is because the transfer function automatically creates the order number and date fields when the file is transferred to the AS/400 members. The order number and date fields together occupy 12 bytes.

## Preparing for Data Transfer

The following topics describe the software products required to transfer data and the points you must understand before transferring data with PC400.

## Required Software Products

To use Data Transfer, IBM PC Support/400 (5738-PC1) must be installed on the AS/400 system. IBM PC Support/400 is not required with OS/400 Version 3 or later.

Before using the data transfer function, run the router of PC400 or PC Support/400.

## Transfer Function

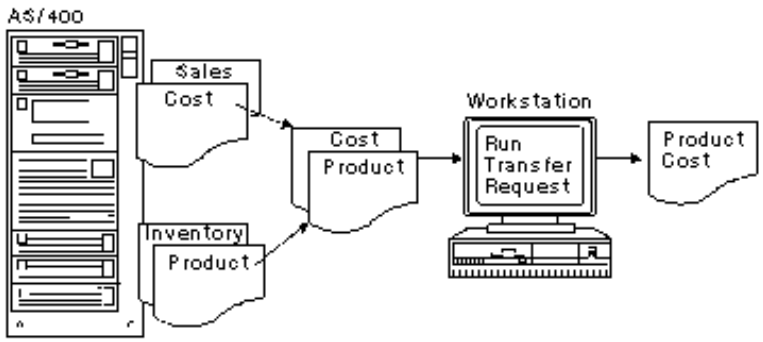
You can transfer only source programs, records, and the following information:

Information organized for analysis
Information used for decision making
Information suited for computer processing

When using a spreadsheet, for example, you might want to use inventory data to create a cost analysis report. If there is no way to copy the data into the workstation, you must print the data from the AS/400 system and manually type it into a workstation file. With the transfer function, however, you can access the inventory database directly, select only the data needed for the report, process the data as required, then complete the report using that data.

Data can also be sent from the workstation to the host system for processing by AS/400 application. When a remote user is authorized to access the AS/400 system directly, he or she can access the created cost analysis report to compare with their results.

The following example outlines the joining of two files, transferring the information to the workstation, and creating a report.




To transfer data by using PC400, you must create a transfer request. A transfer request provides the necessary information about the data you want to transfer.

Before creating a transfer request, you must have the answers to the following questions:

Where is the data located?
How much of the data do you want to transfer?
How should the data be sorted?
Where do you want data to be transferred?

When transferring data from the AS/400 system to a workstation, PC400 allows you to specify which data is to be transferred and whether the data is to be displayed or written to a workstation file.

In addition, a transfer request can be saved to a workstation file, allowing you to easily perform the same transfer at a later date. After a transfer request is saved, you can call the request to make changes or to run it again.

## Data Transfer Program

PC400 data transfer is classified into two types, depending on the direction of the transfer:

Transferring data from the workstation to the AS/400 system is called data sending.

Transferring data from the AS/400 system to the workstation is called data receiving.

Data transfer can also be classified according to how the program is started, as follows:

Data is transferred by interactively entering information such as *what data is transferred from which file to which file* on the screen. In this case, the interactive screen for sending is called the PC→AS/400 Transfer window, and that for receiving is called the AS/400→PC Transfer window.

Data is transferred according to the information that has already been registered. The interactive screen is not necessary. This is called the *automatic transfer* of data.

In both cases, data transfer is performed by **PCSFT5.EXE** on the workstation and by the *PC Support/400* transfer program on the AS/400 system.

The **Data Transfer** icon is registered in the PC400 folder by installing PC400. Double-clicking on this icon displays the AS/400→PC Transfer window (for receiving). This icon includes:

```
\PCOMOS2\PCSFT5.EXE  -R
```

The PC→AS/400 Transfer window (for sending) appears when the registered contents are changed as follows:

```
\PCOMOS2\PCSFT5.EXE  -S
```

The AS/400→PC Transfer and PC→AS/400 Transfer windows have a **Switch to SEND** button and **Switch to RECEIVE** button, respectively. By clicking either of these buttons, the window for sending can be switched to the window for receiving, and vice versa.

To perform *automatic transfer*, transfer information must be created, using the interactive screen window, and then saved. Data transfer can then be performed automatically by specifying the file name in which the data was saved.

For example, if transfer information is saved to file **TENSOU.TTO**, contained in directory **C:\PCOMOS2\PRIVATE**, run *automatic transfer* as follows:

```
C:\PCOMOS2\PCSFT5.EXE  C:\PCOMOS2\PRIVATE\TENSOU.TTO
```

When you save the transfer information, register it as an icon in the PC400 folder. You can then transfer data automatically simply by double-clicking on this icon.

# Data Concepts of the AS/400 System and Your Workstation

The basic components of data management are files, records, and fields. A *file* is an aggregate of records, referenced by a single name. Each record in a file contains one or more items of correlated information. Each item of information is called a *field*.

The AS/400 system and your workstation use different functions to store and group data, and to set the format.

## Workstation Files

To transfer data from a workstation to the AS/400 system, the transfer function uses a special-format workstation file, called a *file-description file*. Using this file, data is stored in a valid format and converted into a valid type.

A file-description file identifies the format of a workstation data file and contains a description of the fields in the data file. The file-description file also contains a name list of all the fields in the data file. This list reflects the order, as well as the names, in which each field appears within the data file. In addition, this list includes a description of the data type, length, and decimal position of each field. Using this information, the transfer function can recognize not only how data has been modified but also where a certain field exists in a file record.

When data is transferred from the AS/400 system to a workstation, you can use the transfer function to automatically create the file-description file. In this case, the information in the file-description file depends on the file description in the AS/400 file.

You must create a file-description file with the same name as the workstation data file to transfer a workstation data file to the AS/400 system.

## Distributed Data Management (DDM) Files

Distributed data management (DDM) is one of the functions supported by the AS/400 system. This function is used to access database files that are stored on remote AS/400 systems. To use the transfer function to access these database files, specify a DDM file name as the name of the AS/400 file to be transferred. Refer to the *DDM Guide* for details of how to use DDM files.

## AS/400 Files

The following list provides a simple explanation of the requirements for transferring data between the AS/400 system and a workstation.

**Library** The AS/400 library contains related objects that are used to generate significant groups. For example, the objects might be all the programs and files related to credit sales management. Using the library, you can group objects and find a desired file by name. The transfer function uses the library to locate an AS/400 file.

**File** AS/400 files that you can manipulate consist of a file description and data stored in the file. PC400 processes an AS/400 file, called a database file. The database file can be either a physical file or a logical file.

A *physical file* is a database file that contains data stored in records. It includes a description of the record format in addition to the data itself.

A *logical file* is a database file, which you can use to access data stored in one or more physical files. Logical files, like physical files, contain a file description. However, logical files do not contain any actual data. Instead, you can access fields in one or more physical files by using the record format included in the logical file description. When a logical file is transferred from the AS/400 system to a workstation, data is obtained from one or more physical files. You need only specify a logical file as the file to be transferred. The AS/400 system recognizes which physical file contains the actual data to be transferred.

**Note:** Data cannot be transferred from a workstation to logical files.

**Member** Data records in a database file are grouped into several members. At least one member must be included in one file.

When data is transferred to and from the AS/400 system, actual data transfer is done between file members. For example, a certain workstation file can be transferred to the AS/400 system. In this case, the file members become new members of a new or existing AS/400 file, or substitute for existing members in an existing AS/400 file.

**Record format**

A record format describes the fields contained in a file record and the order in which these fields appear in the record. Record formats are stored in the file description. Both physical and logical database files can have one or more record formats.

## Creating a Workstation-to-AS/400 Transfer Request

To create a request for data transfer from a workstation to the AS/400 system, do as follows.

1. Using the router session, establish attachment to the AS/400 system to which data is to be transferred.
2. Select the **Data Transfer** icon.
3. When the AS/400→PC Transfer window has been displayed, select **Switch to SEND**. The display is switched to the PC→AS/400 Transfer window.

   To choose additional settings, select **Advanced**.
4. Specify each item. Refer to “Items to Be Specified” for details.

## Items to Be Specified

The following section explains the items specified in the PC→AS/400 Transfer window. Those items that are specified by selecting **Advanced**, are indicated by the addition of “(Advanced)” at the end of the corresponding item name.

### FROM

### PC file name

This item is always required. It specifies the name of the workstation file containing the data to be transferred to the AS/400 system. Specify this item using the following format. (Items inside brackets [ ] can be omitted.)

[*d*:][*path-name*]*file-name*[.*ext*]

A list of workstation files can be displayed by selecting **Browse**. You can limit the number of names listed. To limit the listing, specify a combination consisting of part of a file name and a global file name character (* or ?) in the input area of the workstation file list. For example:

When you select **OK** with /**A:** specified, the displayed listing contains the names of all files in the current directory of the diskette inserted into drive A.

When you select **OK** with **A:\SUPPLY** specified, the displayed listing contains the names of all files under the **SUPPLY** path of the diskette inserted into drive A.

When you select **OK** after specifying **B:*.XLS**, the displayed listing contains the names of all files having extension **XLS** in the current directory of the diskette inserted into drive B.

### TO

### System name

This item is always required. When the router program is active, this item specifies the default system name.

## Library/File (Member)

This item is always required. It specifies the name of the AS/400 physical file that will receive the data to be transferred from the workstation. Either an existing file name or new file name can be specified.

Specify this item using the following format. (Items inside brackets [ ] can be omitted.)

[*library-name*/]*file-name*[(*member-name*[,*record-format-name*])]

**library-name**

This is the name of the AS/400 library containing the AS/400 file to which data is to be transferred. If no library is specified, ***LIBL** is used. To create a new file to receive transferred data, specify the library name.

When the input field is null and **Browse** is selected, the AS/400 system displays a list of all libraries defined in ***USRLIBL** of the AS/400 job library list. This list can be modified by changing the job description. Run a change job description (**CHGJOBD**) command on the AS/400 system.

**file-name**

This is the name of an AS/400 physical database file. When data is transferred to an existing file, the data in that file is replaced with the transferred data. To create a new file to receive transferred data, specify a new file name of 1 to 10 characters.

To list the available files, do one of the following things:

To list all files within all libraries defined in ***USRLIBL** of the AS/400 job library list, specify ***USRLIBL** followed by a slash (/), then select **Browse**. If a slash (/) is not specified after the library name, the AS/400 system displays a list of library names rather than the file names.

To list the names of the files in a certain library, specify the library name followed by a slash (/), then select **Browse**. You can also specify a part of a file name followed by an asterisk (*), then select **Browse**. The AS/400 system lists all the files whose names begin with the specified character string.

**member-name**

This is the name of a member in the specified AS/400 file to which data is to be transferred. If this member name is not specified, data is transferred to the first member, ***FIRST**, in the AS/400 file. When the specified member already exists, the data in that member is replaced with the transferred data.

To transfer data to an existing file, specify the member name. The data within that file member is replaced with the transferred data.

To create a new member in an existing file or in a new file, specify a new member name of 1 to 10 characters.

By selecting **Browse** with a file name specified, the names of the members in that file are listed. When a left parenthesis, part of a member name, an asterisk (*), and a right parenthesis are specified, in this order, and then **Browse** is selected, the AS/400 system can list all member names beginning with the specified character string.

**record-format-name**

This is the name of the record format in the specified AS/400 file. The record format name need not be specified except when a physical file contains more than one record format. Most physical files have only one record format. Before specifying a record format name, a member name or ***FIRST** must be specified as the member name.

When you transfer data to an existing file without specifying a record format name, it is assumed that the file has only one record format (***ONLY**). Therefore, that record format is used.

When a new file is created with no record format name, **QDFTFMT** is used as the record format name.

**Note:** A library name, file name, member name, and record format name can be specified using up to 10 characters each. Each name must begin with one of characters A to Z, ¥, #, and @. For characters subsequent to the first, 0 to 9, underscores, and periods can also be used.

## Use of File Description File (Advanced)

This item is always required. It specifies whether a file-description file is used to transfer data to the AS/400 system. The file-description file is required to transfer a workstation file, containing the data to be transferred (and converted), in fields. Such a workstation file can have either several fields or numeric data fields. To transfer a workstation file containing text (character data) only, the file-description file is not required. For details on creating a file-description file, see "File-Description Files" on page 15-44.

Follow either of the two procedures below.

Do not specify this item in the following case: a workstation file having only one field (for example, PC code character) is specified in **FROM**, while the AS/400 file is a physical source file having the following record format.

| Field | Type | Length | " | " Decimal Places |
|---|---|---|---|---|
| Order number | Zoned | 6 | | 2 |
| Date | Zoned | 6 | | |
| Data | Character or Open | 1 to 4 96 | | |

**Note:** When fields contain character data or zoned data only, the data portion can be broken down into several fields. The destination AS/400 file contains the fields for order number and date. The workstation file, however, does not. This method is recommended when transferring text only between the AS/400 system and the workstation.

Specify this item in all cases other than that described above. Two examples are:

- Data is transferred from a workstation file having more than one field.
- The AS/400 file that receives the data is other than a physical source file having the record format described above.

## File Description File Name (Advanced)

This item appears only when item **Use of File Description File** is specified.

This item is always required. It specifies the name of the workstation file-description file that describes the data to be transferred.

Upon transferring data from the AS/400 system to a workstation, a file-description file might have been created.

A file-description file must be created when the data has not yet been transferred from the AS/400 system to a workstation or when no file-description file exists.

## PC File Type (Advanced)

This item appears only when **Use of File Description File** is not specified.

This item is always required. You must specify the type of the workstation file specified in the **FROM** field. The values provided by the AS/400 system are recognized as workstation code text. If the file type of a data file is not converted, the file can include nothing other than data that does not require conversion.

## AS/400 Object (Advanced)

This item is always required. It specifies whether the AS/400 member to which data is transferred is a new member or an existing member. When data is transferred to a new member, this item also specifies whether the file to contain the new member is an existing file.

**Create New Member**

This item specifies that a new member, to which data is transferred, is created in an existing AS/400 file.

**Notes:**

1. To create a new member, you must have the following authorities:

   ***OBJOPR**, ***OBJMGT**, and ***ADD** for the file that will include the new member

   ***READ** and ***ADD** for a library that will contain the file

   See *Security Descriptions* (SC41-8083) for details of object authorities.

2. To create a member to add to a file, the transfer function uses the AS/400 default value for the add physical file member (**ADDPFM**) command.

When you specify this item, the following item must also be specified:

**Member Text**

This item is optional. It is used to add an explanation of a new AS/400 member. This explanation helps remind you of the contents of the member. This explanation appears, for example, when a list of all members in a file is requested (**Browse** is selected). If this item is left blank, no explanation is added to the new AS/400 member.

To specify an apostrophe (') in the explanation, enter two apostrophes (' ').

**Create New Member in New File**

This item specifies that a new member, to which data is to be transferred, is created in a new AS/400 file.

**Notes:**

1. To create a new member in a new file, ***READ** and ***ADD** authorities are required for the library that will contain that file. Authority to use the create physical file (**CRTPF**) command of the AS/400 system is also required.
2. To create a new member in a new file, the transfer function uses the default value for the create physical file (**CRTPF**) command of the AS/400 system. It does not, however, use the following values:

   (**MAXMBRS**[***NOMAX**]). This indicates that the file can contain up to 32,767 members.

   (**SIZE**[***NOMAX**]). This indicates that each member of the file can contain an unlimited number of records.

When this item is specified, also specify the following item:

**Member Text**

This item is optional. It is used to add an explanation of a new AS/400 member. This explanation helps remind you of the contents of the member. This explanation appears, for example, when a list of all the members in a file is requested (**Browse** is selected). If this item is left blank, no explanation is added to the new AS/400 member.

To specify an apostrophe (') in the explanation, enter two apostrophes (' ').

**AS/400 File Type**

This item is always required. It specifies the type of an AS/400 file and the members to be created (same type for both).

Specify one of the following things:

To create an AS/400 physical source file and its members, specify **Source**. These members are created with two fields (order number and date) added to the beginning of the data transferred from the workstation file. A new AS/400 source file and its members have the following record format:

| Field | Type | Length | Decimal Places |
|---|---|---|---|
| Order number | Zoned | 6 | 2 |
| Date | Zoned | 6 | |
| Data | Character or Open | 1 to 32755 | |

Note that in an AS/400 physical source file, each record can be up to 32,755 bytes in length. But, the maximum size of a source file created using the workstation-to-AS/400 transfer function is 4,107 bytes. Also, this file must include the order and date fields. Therefore, the maximum amount of data that can be transferred is 4,096 bytes per record.

The data portions of members inherit the workstation file characteristics. In other words, when a workstation file is a

workstation code text file consisting of many records containing text, the created data fields will be the same.

To create an AS/400 physical data file and its members, specify **Data**. The file and members will contain only the data fields described in the file-description file.

The value of the **AS/400 File Type** is assumed to be **Data** when a file-description file is used to transfer data. If a file-description file is not used for data transfer, the value of this item is assumed to be **Source**.

**Field Reference File Name**

This item appears only when **Use of File Description File** is specified for the creation of a new file.

When **Use of File Description File** is not specified, an AS/400 physical source file is created. **AS/400 File Type** and **Field Reference File Name** are not displayed. Instead, **Record Length** appears.

This item is always required. A new AS/400 file is created using the field name in a file-description file and the field definitions in an AS/400 field-reference file.

The format of a field-reference file name is as follows. (Items inside brackets [ ] can be omitted.)

[*library-name/*]*file-name*

**library-name:** This is the name of an AS/400 library containing a field-reference file. If this library name is not specified, ***LIBL** is assumed. If you cannot find the desired library, selecting **Browse** displays a list of all libraries in ***USRLIBL** of the AS/400 job library list. ***USRLIBL** of the library list can be changed by modifying the job description by executing a **CHGJOBD** command on the AS/400 processor.

**file-name:** This is the name of the AS/400 physical database file containing the field definitions. Always specify this file name. When a library name is specified concurrently, use a slash (/) to delimit the library name and file name. If the desired file cannot be found, enter the library name and a slash, then select **Browse**. The system displays a list of files in that library. To list all the files in the libraries defined in ***USRLIBL** of the AS/400 job library list, enter ***USRLIBL/** then select **Browse**.

If you enter part of a file name followed by an asterisk (*) and then select **Browse**, the system displays a list of available file names, each beginning with the specified part of the name.

For example, enter **ARLIB/AR*** in the **Field Reference File Name** item, then select **Browse**. The system displays a list of all physical file names beginning with AR in library ARLIB.

**Note:** You must have ***OBJOPR** authority for the field-reference file to be specified. To list certain files, you must also have ***OBJOPR** authority for those files.

**Record Length**

This item is always required. It specifies the record length of an AS/400 physical source file. When the data receiver is an AS/400 physical source file, the specified value must include the length of the order number and date fields that are added to a workstation file at transfer (the total length of these two fields is 12 bytes).

**Authority**

This item is always required. It specifies the authority level of a new AS/400 file.

Specify one of the following things:

**Read/Write**. This enables other users to read from and write to the AS/400 file and allows the file name to be displayed in lists. However, users cannot delete the file (***OBJOPR**, ***READ**, ***ADD**, ***OBJMGT**, ***UPD**, and ***DLT** authorities). If other users might be transferring data from a workstation file to the AS/400 file, specify **Read/Write** or **All**.

**Read**. This enables other users to read from the AS/400 file, and allows the file name to be displayed in lists. However, other users can neither write to the file nor delete it (***USE** authority).

**All**. This enables other users to read from and write to the AS/400 file as well as delete it. The file name is displayed in lists (***ALL** authority).

**None**. This prevents other users (except for the system administrator) from writing to or deleting the AS/400 file. The file name does not appear in lists (***EXCLUDE** authority).

**File Text**

This item is optional. It is used to add an explanation of a new AS/400 file. This explanation helps remind the user of the contents of the file. This explanation appears, for example, when a list of all files in a library is requested (**Browse** is selected). If this item is left blank, no explanation is added to the new AS/400 file.

To specify an apostrophe (') in the explanation, enter two apostrophes (' ').

**Replace Existing Member**

This item transfers data to an existing AS/400 member, specified in the **Library/File (Member)** item. The existing data in that AS/400 member is replaced with the transferred data.

## Saving, Opening, Changing, and Executing a Transfer Request

The following section explains how to save, open, change, and execute, as a file, information (transfer request) on data to be transferred.

## Saving a Transfer Request

Save a transfer request when the request is likely to be executed repeatedly. This eliminates the need to create a transfer request every time data is to be transferred. To save a transfer request, do as follows:

1. Specify the information needed for transfer, using the PC→AS/400 Transfer window.
2. After specifying the necessary information, select **Save** or **Save As** from the File pull-down menu of the menu bar.

   The Save Transfer Request File as window appears.
3. Specify each item, referring to the following explanation, then select **OK**.

   **File Name** Disk to which data is to be saved. Specify a file name or diskette file name. The default extension is **TFR**. Extension **TFR** identifies a file as a transfer request file.

   **Description** This item can be used to add an additional explanation of a transfer request, as required. The explanation can be up to 40 characters in length. This explanation is saved with the transfer request, and displayed in the list of transfer request names. It is, therefore, useful for identifying a transfer request.
4. The system asks whether the saved transfer request is to be registered in the PC400 folder.

   When **OK** is selected, the transfer request is registered as an icon. Subsequently selecting this icon transfers data according to the contents of the registered data transfer request.

## Opening and Changing a Saved Transfer Request

To open and change a saved transfer request, do as follows:

1. Display the PC→AS/400 Transfer window.
2. Select **Open** from the File pull-down menu of the menu bar.
3. Specify the name of the file to be opened using the Open Transfer Request File window, then select **OK**.

   The PC→AS/400 Transfer window reappears, and the transfer request information, saved to the specified file, appears for each item. This opens the saved transfer request.
4. Change the contents of the transfer request as necessary.
5. To save the changed contents, follow the procedure explained in “Saving a Transfer Request.”

## Performing a Transfer Request

A transfer request can be performed in any of the following ways:

By using the OS/2 command prompt
By selecting the icon with which the transfer request has been registered
By using the PC→AS/400 Transfer window of the **Data Transfer** icon

***Using the OS/2 Command Prompt:***

By referring to “Data Transfer Program” on page 15-5, execute the program **PCSFT5.EXE**, specifying the saved transfer request file name as a parameter.

***Selecting the Icon with Which the Transfer Request Has Been Registered:***

This method can be used only when a transfer request has been saved as an icon by using the PC→AS/400 Transfer window.

Selecting the corresponding icon starts data transfer.

***Using the PC→AS/400 Transfer Window:***

1. Before executing a transfer request, operations such as creating, opening, and changing a transfer request must be completed.

   **Note:** When data is transferred from a workstation to an existing member in an AS/400 file, the transferred data replaces the existing data in that member.

2. Select **Send** from the PC→AS/400 Transfer window.

   Data transfer starts.

3. After the transfer has been completed, select the **Cancel** push button or **Exit** from the menu bar File pull-down menu.

### Conversion Errors That Can Occur during Transfer

Upon executing a transfer request, a file-description file (when specified) is read from the disk or diskette to be processed. The AS/400 system and workstation exchange information, if the data is transferable.

The workstation transfers records, one at a time, from the file specified in **FROM**. Transferred records are converted and stored in the AS/400 member specified in **TO**.

During this conversion process, conversion errors might occur. For example, the values in a workstation file might have to be rounded to fit the AS/400 fields. Another example is the case where the record length of a workstation file differs from that expected by the AS/400 system.

If such an error occurs, an error message is issued with the number of the workstation file record for which the error occurred and, sometimes, information about certain fields in that record.

If a severe error occurs, data transfer might stop. In such a case, stop the transfer request, correct the error, then rerun the transfer request.

When the error is not so severe, you can request that the system continue transferring data. By doing so, even if the same error occurs in another record, an error message does not appear and the transfer function automatically continues executing the transfer request.

## Creating an AS/400-to-Workstation Transfer Request

To create a transfer request to receive data from the host, do as follows:

1. Select the **Data Transfer** icon.
2. When the PC→AS/400 Transfer window is displayed, select **Switch to RECEIVE** to switch the display to the AS/400→PC Transfer window.

   For the additional settings, select the **Advanced** button.

3. Which items are to be specified by the user vary with the data type, as follows:

   Entire AS/400 file
   Part of an AS/400 file
   Data combined from several AS/400 files
   Summary of record groups

   Before specifying each item, while referring to “Items to Be Specified” on page 15-19, note the following points regarding the data to be received.

## Receiving an Entire AS/400 File

This is the simplest way of transferring data from the AS/400 system to a workstation. All records in a file and all the data in each record are transferred.

The **FROM** items that must be specified as follows:

**System name:**
This item specifies the name of the system.

**Library/File (Member):**
This item specifies the name of the AS/400 file.

**SELECT:** Specifying an asterisk (*) for this item indicates that all fields are to be transferred, or lists all the fields in the AS/400 file.

**ORDER BY:**
This item is optional. It specifies how records will be grouped. When this item is left blank, records are not grouped (data is transferred in the same order it appears in the AS/400 file).

## Receiving Part of an AS/400 File

Only part of an AS/400 file is transferred to the workstation.

The **FROM** items that must be specified as follows:

**System name:**
This item specifies the name of the system.

**Library/File (Member):**
This item specifies the name of the AS/400 file.

**SELECT:** This item specifies a field to be transferred.

**WHERE:** This item specifies the requirements that must be satisfied before records can be selected for transfer.

**ORDER BY:**
This item is optional. It specifies how records will be grouped. When this item is left blank, records are not grouped (data is transferred in the same order it appears in the AS/400 file).

## Receiving Data Combined from Several AS/400 Files

The data to be transferred can be stored in two or more AS/400 files. These files are assumed to be related. Based on this relationship, they can be linked or *joined*, as if all the data existed in a single file. The files can be transferred to the workstation after they have been joined. By using the AS/400-to-PC transfer function, this “join and transfer” function can be performed in a single step.

The **FROM** items that must be specified as follows:

**System name:**
This item specifies the name of the system.

**Library/File (Member):**
This item specifies the names of all AS/400 files from which data is to be transferred.

**JOIN BY:** This item specifies how to join or combine the data in each file.

**SELECT:** This item specifies a field to be transferred.

**WHERE:** This item specifies the requirements that must be satisfied before records can be selected for transfer.

**ORDER BY:**
This item is optional. It specifies how records will be grouped. When this item is left blank, records are not grouped (data is transferred in the same order as it appears in the AS/400 file).

## Receiving a Summary of Record Groups

A summary record is a single record that includes information on each set of records grouped from one or more AS/400 files.

The **FROM** items that must be specified as follows:

**System name:**
This item specifies the name of the system.

**Library/File (Member):**
This item specifies the names of all files from which data is to be transferred.

**JOIN BY:** This item is optional. It specifies the join conditions that must be satisfied before records can be joined.

**GROUP BY:**
This item is optional. It must be specified only when the records of AS/400 files are classified into several groups. To group all records into a single group, this item need not be specified.

**SELECT:** Specifying this item causes a summary record to be created. The field names specified in **GROUP BY** can be specified.

**WHERE:** This item is optional. It specifies the requirements that each record to be grouped must satisfy. To group all records, this item need not be specified.

**HAVING:** This item is optional. It specifies the summary record to be transferred. To transfer all summary records, this item need not be specified.

**ORDER BY:**
This item is optional. It specifies how summary records will be grouped. When this item is left blank, records are not grouped (data is transferred in the same order as it appears in the AS/400 file).

# Items to Be Specified

The following section explains the items to be specified using the AS/400→PC Transfer window. Those items that can be specified by selecting **Advanced**, are identified by adding "(Advanced)" to the end of those item names.

## FROM

### System name

This item specifies the name of the host system that contains the data to be received. When the router program is active, this item specifies the default system name.

### Library/File (Member)

This item is always required. It specifies the name or names of one or more files used to store data to be transferred. Up to 32 file names can be specified. To specify several files, delimit them with commas and use **JOIN BY**, displayed after all **FROM** items have been specified. Only the file name must be specified. Do not specify a comma as a part of a file name. When the other optional items are not specified, they are assumed automatically. For example, the library name, member name, and format name can be assumed to be ***LIBL**, ***FIRST**, and ***ONLY**, respectively. When the cursor is on the input field of **FROM**, selecting **Browse** lists libraries, files, members, and formats.

**Note:** To transfer data from an AS/400 physical file, you must have ***USE** authority for that file. To transfer data from an AS/400 logical file, you must have ***OBJOPR** authority for that file and ***READ** authority for each subordinate file.

Specify file names as follows. (Items inside brackets [ ]can be omitted.) To specify several file names, delimit the names with commas.

[*library-name*/]*file-name*[(*member-name*[,*record-format-name*])],
[*library-name*/]*file-name*[(*member-name*[,*record-format-name*])],...

**library-name**

This is the name of the AS/400 library that contains the AS/400 file to be transferred. This AS/400 file contains the data to be transferred from the AS/400 system to a workstation. If this library name is not specified, ***LIBL** is assumed. If you cannot find the desired library, selecting **Browse** displays a list of all libraries defined in ***USRLIBL** of the AS/400 job library list. ***USRLIBL** of the library list can be changed by modifying the job description by executing the **CHGJOBD** command on the AS/400 system.

**file-name**

This is the name of the AS/400 physical file, logical file, or DDM file from which data is transferred. This file name must always be specified. To specify a file name and library name concurrently, delimit them with a slash (/). If you cannot find the desired file name, enter the library name followed by a slash, then select **Browse**. The system then displays a list of files contained in that library. To display a list of all the files in the libraries defined in ***USRLIBL** of the AS/400 job library list, enter ***USRLIBL**/, then select **Browse**.

**member-name**

This is the name of the AS/400 member containing the data to be transferred, or ***FIRST**. If this member is not specified, the system assumes ***FIRST**, and the first member of that file is used.

**record-format-name**

This is the name of the record format contained in the specified AS/400 file, or ***ONLY**. Before specifying the record format name, specify the member name or ***FIRST**. If the record format name is not specified, the system assumes ***ONLY**, and the only record format for that file is used. To specify a record format name, delimit the record format name and member name with a comma.

When the specified AS/400 file has several record formats, a record format name must be specified. If the file member name is not specified, a record format name cannot be specified.

**Notes:**

1. A library name, file name, file member name, and record format name can be specified using up to 10 characters for each. Each name must begin with A to Z, ¥, #, or @. For characters subsequent to the first, 0 to 9, underscores, and periods can also be used.
2. When the **FROM** field remains blank or a comma is entered to specify the next file name, selecting **Browse** displays a list of libraries defined in ***USRLIBL** of the AS/400 job library list.
3. Enter part of the file name, member name, or record format name, followed by an asterisk (*), then select **Browse**. The system displays a list of names beginning with the specified characters.

Example: You might want to transfer data from file member **ITEMMBR1** (first member) of file **ITEMMAST** in library **ITEMLIB**. **ITEMFMT** is the only record format of this file. The specification will be as follows:

ITEMLIB/ITEMMAST(ITEMMBR1,ITEMFMT)

Alternatively, specify:

ITEMLIB/ITEMMAST

## JOIN BY (Advanced)

When several files have been specified in **FROM**, specify **JOIN BY**. When only one file has been specified in **FROM**, **JOIN BY** does not appear.

**JOIN BY** specifies how to link or join the records of the files specified in **FROM**. Each file specified in **FROM** must be joined with at least one other file that has been specified in **FROM**.

Use **JOIN BY** to specify one or more join conditions. The join conditions indicate the similarity of two files. Therefore, they indicate which records of one file are joined with those of another.

The join conditions are as follows:

*field-name = field-name*

**Field name** is the name of the field defined in the record format specified in **FROM**. The join conditions require two field names, one for each file to be joined.

Field names must be delimited by one these:

| | |
|---|---|
| **=** | Equal |
| **<> or ><** | Not equal |
| **>** | Greater than |
| **>=** | Greater than or equal to |
| **<** | Less than |
| **<=** | Less than or equal to |

When specifying fields in **JOIN BY**, observe the following rules.

Join a numeric field to another numeric field. The field lengths and types do not have to be identical.

Join a character field to another character field. The lengths do not have to be identical.

The field name to be specified might have been defined in the files specified in **FROM**. When such a field name is used in the following items, prefix the field name with the file qualifier:

JOIN BY
GROUP BY
SELECT
WHERE
HAVING
ORDER BY

The file qualifier is the character T (uppercase or lowercase) followed by a one- or two-digit number. Use T1 for fields defined with the first record format, T2 for fields defined with the second record format, and so on. Delimit the file qualifier and field name with a period (.). See “Receiving Records Using File Qualifiers” on page 15-38 for details of the file qualifiers.

If the field name of the file specified in **FROM** cannot be found, select **Browse** when the cursor is on the **JOIN BY** input area. Then, a list of file qualifiers and field names of the files appears.

To join three or more files, or to join two files based on two or more common fields, two or more link conditions must be used. To specify several join conditions, join the conditions with AND. For example:

```
T1.EMPNO = T2.EMPNO AND T2.EMPNO = T3.EMPNO
```

In this case, records having the same value as **EMPNO** are joined between the first and second files specified in **FROM**. Then, such records are joined between the second and third files specified in **FROM**.

Up to 32 join conditions can be specified.

After **JOIN BY** is specified, each of **SELECT**, **WHERE**, and **ORDER BY** can be completed, by following the procedure described earlier in this chapter. To browse

a field name that has been defined in several files, prefix the field name with a file qualifier.

## GROUP BY (Advanced)

This item is required only to classify AS/400 file records into several groups. When no value is specified in **GROUP BY**, all the records are treated as a single group.

If **GROUP BY** is not displayed, select **Group functions** at the bottom right of the screen. Then, **GROUP BY** appears. **GROUP BY** and **HAVING** are displayed concurrently. You can specify either, both, or neither.

When **GROUP BY** and **HAVING** are displayed but you do not want to specify either, select **Remove Group functions**. The two items disappear.

To classify several records into groups, specify one or more fields to act as the base for grouping. Records are grouped according to the field specified first, then by the field specified second, and so on. For example, suppose that the following groupings are specified:

```
SHIFT, DEPTNO
```

In this example, the records are first grouped by **SHIFT**. Records belonging to a single group will subsequently have the same value as **SHIFT**. Then, the records in each group are grouped by **DEPTNO**. When there is only one record having a certain **SHIFT** value, the group has only one record.

Delimit field names with commas. Blanks can be specified to improve readability. Up to 50 field names can be specified. These fields must have been defined in the record format defined in **FROM**.

If a field cannot be found, selecting **Browse** displays a list of all the fields contained in the record.

With **GROUP BY** specified, specify **SELECT** to transfer the summary record of each group.

## SELECT (Advanced)

This item is always required. It specifies the field to be transferred or the function that indicates the type of summary information to be transferred.

The field to be specified must have been defined in the record format specified in **FROM**.

To transfer all the fields in the specified record, specify an asterisk (*) in this input field. (Specifying an asterisk causes all fields in the record to be transferred.)

**Note:** Up to 256 fields can be transferred. When more than 256 fields have been defined in a file, an asterisk cannot be used. In this case, specify the names by selecting the fields to be transferred.

To transfer fields by selecting from a record, enter the field names in the order in which the fields are arranged. One or more blanks can be placed between the field names to improve readability. However, the names must be delimited by commas, as follows:

```
ITEMNO,  QONHAND,  PRIC
```

You can also specify:

ITEMNO,QONHAND,PRICE

When records are transferred from an AS/400 source file, specifying an asterisk (*) causes all fields in the file to be transferred, with the exception of the order number field and date field. (To transfer all the fields, including the order number field and date field, specify all the field names, including each data field name.)

A field can be specified repeatedly as required. However, bear in mind that no more than 256 fields can be selected. A list of field names can be displayed by selecting **Browse**.

***Receiving a Summary of Record Groups:***

The following information is necessary to receive summary records.

To transfer a summary record, do not leave this input area blank or specify an asterisk (*) (except when all the fields of the file specified at the prompt are specified in **GROUP BY**). The field names specified in **SELECT** (except for those specified in functions) must also have been specified in **GROUP BY**.

The functions and fields specified in **SELECT** return actual summary information for each group. Enter the field names and functions in **SELECT** in the order in which they are to be displayed.

**Note:** Null values are not included in the functions. When an entire value is null, the function output is set to null, except for **COUNT**. The **COUNT** output is 0.

The function format is as follows.

function (field-name)

This has the following meaning:

**function:**
This is one of the following functions:

- **AVG** Transfers the average value of the specified fields for each record group. This function can be used only for numeric fields.
- **MIN** Transfers the minimum or lowest value of the specified fields for each record group.
- **MAX** Transfers the maximum or highest value of the specified fields for each record group.
- **SUM** Transfers the total value of the specified fields for each record group. This function can be used only for numeric fields.
- **COUNT** Transfers the total number of records that satisfy the **WHERE** condition for each record group. Specify **COUNT(*)**.

**field-name:**
This is the field name defined with the record format specified in **FORM**.

Each function returns one value for each record group. In **SELECT**, several functions can be specified. To do so, delimit the functions by commas, as follows:

SUPPNO, AVG(PRICE), MIN(PRICE), MAX(PRICE)

This indicates that the average, minimum, and maximum values for **PRICE** are calculated for each supplier after **SUPPNO** has been selected. A summary record is transferred according to the function selection. Specify **SUPPNO** in **GROUP BY**, because **SUPPNO** has not been used for the functions.

## WHERE (Advanced)

This item is optional. It specifies one or more conditions that records to be transferred must satisfy.

To transfer summary records, use this item to specify which records are to be grouped, then group the records. Using this item, you can specify one or more conditions that the record must satisfy to belong to a certain group. When **WHERE** is not specified, all records are grouped.

As the *conditions*, specify the test to be applied to the records in the specified file member. All the records in the specified file member are tested for the conditions specified here. Only those records that pass this test are transferred.

When **WHERE** is not specified, all records in the specified file member are transferred.

The condition format is as follows:

*field-name test value*

**field-name:**

This must be a field substring or field name defined in the record format.

Fields or constants can be manipulated by specifying a supported function, with the results being used for comparison. The supported functions and usage are as follows:

**SUBSTR** Returns the specified part of a character string. This function contains three parameters: the field name, starting position, and length of the returned substring. The following example returns the 20 characters starting from the 10th character of the **FULLNAME** field.

**SUBSTR(FULLNAME 10 20)**

**VALUE** Returns the first non-null value in the parameter list. (If all parameters are null, null is returned.)

**VALUE(DEPOSIT WITHDRAW BALANCE)**

**CURRENT** Returns **DATE**, **TIME**, **TIMEZONE**, or **TIMESTAMP** for the current system.

**CURRENT(TIMEZONE)**

**DIGITS** Returns a character string representation of a numeric field.

**DIGITS(EMPLOYEE#)**

**CHAR** Returns a character string representation of the date field, time field, or time-stamp field. The second parameter is used to specify the format of the Systems Application Architecture (SAA) of the string to be returned (supported values are **USA**, **EUR**, **ISO**, or **JIS**).

**CHAR(DATEHIRE USA)**

**DATE** Returns the date of the time-stamp field.

**DATE(TIMECRTD)**

**TIME** Returns the time of the time-stamp field.

**TIME(TIMECRTD)**

**TIMESTAMP** Returns the time-stamp, combining the date field and time field.

**TIMESTAMP(DATESEND TIMESEND)**

**YEAR** Returns the year of the date field or time-stamp field.

**YEAR(DATEHIRE)**

**MONTH** Returns the month of the date field or time-stamp field.

**MONTH(DATEHIRE)**

**DAY** Returns the date of the date field or time-stamp field.

**DAY(DATEHIRE)**

**DAYS** Returns the day of the year, counted from January 1, of the date field or time-stamp field.

**DAYS(DATEHIRE)**

**HOUR** Returns the time of the time field or time-stamp field.

**HOUR(TIMESEND)**

**MINUTE** Returns the minute of the time field or time-stamp field.

**MINUTE(TIMESEND)**

**SECOND** Returns the second of the time field or time-stamp field.

**SECOND(TIMESEND)**

**MICROSECOND** Returns the microsecond of the time field or time-stamp field.

**MICROSECOND(TIMECRTD)**

**test:** This is the comparison type to be applied to fields or functions.

The following tests can be used. One or more blanks can be placed before and after these tests.

**=** Equal

**<> or ><** Not equal (See the note.)

**>** Greater than

**>=** Greater than or equal to

**<** Less than

**<=** Less than or equal to

**LIKE** The field is similar to the specified value.

**BETWEEN** The field is equal to one of two constants, or to a value between them.

**IN** The field is the same as one of the values in the constant list.

**IS** The field contains null values.

**ISNOT** The field contains no null values.

Using the **LIKE** Test

The **LIKE** test checks the field specified with the field name for a character pattern specified as a value. The field to be specified must be a character field.

The values to be tested must be character-string constants. This string can contain any characters. A percent (%) character (both SBCS% and DBCS%) indicates a character string consisting of zero or more characters. A 1-byte underscore (_) character indicates any single 1-byte character. A 2-byte underscore (_) character indicates any single 2-byte character.

The following example explains how to use the **LIKE** test:

```
NAME LIKE '%ANNE%'
```

The previous example searches for names containing character string **ANNE**, such as **ANNE**, **ANNETTE**, and **SUZANNE**.

The following example searches for names beginning with character string **ANNE**, such as **ANNE** and **ANNETTE**.

```
NAME LIKE 'ANNE%'
```

The following example searches for names ending with character string **ANNE**, such as **ANNE** and **SUZANNE**.

```
NAME LIKE '%ANNE'
```

The following example searches for all names whose second character is A.

```
NAME LIKE '_A%'
```

The following example searches for all last names beginning with character J.

```
LSTNAM LIKE 'J%'
```

This has the same effect as the following example:

```
SUBSTR (LSTNAM,1,1) = 'J'
```

When the pattern does not include a percent character (%), the length of the character string must be identical to that of the field.

**Note:** Values are searched according to the exact characters specified by the user. In other words, when the user's specification consists only of uppercase characters, only uppercase character strings are returned. Similarly, when the specification consists only lowercase characters, only lowercase character strings are returned.

Using the **BETWEEN** Test

The **BETWEEN** test checks the fields specified in the field name for character strings or numeric values that are equal to or between the specified constants. The values to be tested must be two character-string constants or two numeric constants. The types of these constants must be

identical to that of the field name specified by the user. Delimit the two constants with **AND**.

The following example searches for those records for which the price is between 50.35 and 75.3, inclusive:

```
PRICE BETWEEN 5 .35 AND 75.3
```

The following example searches for those records for which the name begins with C:

```
NAME BETWEEN 'C' AND 'CZZZZZZZZZ'
```

The following example searches for those records for which the balance is between 0 and 5 000.

```
BALDUE BETWEEN   AND 5
```

This has the same meaning as the following expression.

```
BALDUE >=   AND BALDUE <= 5
```

**Note:** Specify the values to be tested in the form of **BETWEEN** (minimum) **AND** (maximum). For instance, **BETWEEN 1 AND 1** is a valid specification. However, **BETWEEN 1 AND 1** returns no records.

Using the **IN** Test

The **IN** test checks the fields specified in the field name for the character strings or numeric values in the list specified as the value. The value to be tested must be a list of character-string constants or numeric constants. In addition, the types of these constants must be identical to that of the specified field. Delimit the constants with blanks and enclose them in parentheses. Up to 100 constants can be specified. The following example shows how to use the **IN** test:

```
NAME IN ('SMITH' 'JONES' 'ANDERSON')
```

This example searches for those records for which the name is **SMITH**, **JONES**, or **ANDERSON**.

The following example searches for the values in the **STATE** field for which the value is other than **NY**, **MN**, or **TX**:

```
NOT STATE IN ('NY' 'MN' 'TX')
```

**Note:** Values are searched according to the exact characters specified by the user. In other words, when the user's specification consists of only uppercase characters, only uppercase character strings are returned. Similarly, when the specification consists of only lowercase characters, only lowercase character strings are returned.

Using the **IS** Test

The **IS** test checks the fields specified in the field name for null values.

The following example searches for those records for which the commission field contains null values:

```
COMMISSIONS IS NULL
```

Using the **ISNOT** Test

The **ISNOT** test checks the fields specified in the field name for non-null values.

The following example searches for those records for which the commission field does not contain null values:

```
COMMISSIONS ISNOT NULL
```

In the test, logical **AND** and logical **OR** can be combined. When both **AND** and **OR** are specified, **AND** comparison is performed first. Up to 50 conditions can be specified. For example:

```
MONTH=2 AND LOC='MIAMI' OR LOC='CHICAGO'
```

In this example, each record to be selected must satisfy the following condition:

```
MONTH=2 AND LOC='MIAMI'
```

or must satisfy the following condition:

```
LOC='CHICAGO'
```

This command can be modified by using parentheses. For example:

```
MONTH=2 AND (LOC='MIAMI' OR LOC='CHICAGO')
```

In this example, each record to be selected must satisfy the following condition:

```
MONTH=2
```

and it must satisfy the following condition:

```
LOC='MIAMI' OR LOC='CHICAGO'
```

**NOT** can also be used. The following example selects items where data is transferred not only from those records in which the **DEPT** field is not equal to 470, but also from those records for which the **DEPT** field is equal to 470 and, additionally, **STATE** is equal to **NY**.

```
NOT (DEPT = 47 ) OR (DEPT = 47  AND
   STATE = 'NY')
```

Comparison can start from a certain line and end at the next line. However, a field name cannot start from a certain line and end at the next line. Field names must not exceed one line.

When a value to be tested is a character string enclosed in quotation marks, the value can start from a certain line and continue to the next line.

**value** Field names or constants can be specified as values. To use constants, enclose number or character strings in single quotation marks.

**Note:** Do not specify commas between numbers, because the system recognizes these as decimal points.

When a character field or substring is specified in the field name, the character field name or character-string constant must be specified as the *value*. If the field length differs from the value length, the shorter field is extended to the value length by adding blanks on the right.

When a numeric field is specified as the field name, a numeric field name, numeric constant, or expression must be specified as the *value*. The transfer function performs decimal alignment for numeric fields prior to comparison. Zeros are added wherever numeric values are missing.

When a date field is specified in the field name, the name of a date field, character field (when the **CHAR** function is used for date field conversion), or character-string constant must be specified as the *value*. To use a

character-string constant, use a value in a form other than SAA (**USA**, **EUR**, **ISO**, or **JIS**).

Using Constants

A character string, numeric value, or keyword **NULL** can be specified as a constant.

**Note:** **NULL** can be used only when operators **IS** or **ISNOT** are used.

Using Character Strings

A character string must be enclosed in apostrophes, as follows:

'JOHN'

Use two apostrophes to represent one apostrophe in a character string, as follows:

'JOHN''S'

**Note:** The transfer function supports only right apostrophes (').

When a character string is shorter than the specified field, the string is extended to the value length by adding blanks on the right. When a character string is longer than the specified field, the string is truncated.

Values are searched according to the exact characters you specified. In other words, when your specification consists only of uppercase characters, only uppercase character strings are returned. Similarly, when the specification consists only lowercase characters, only lowercase character strings are returned.

A character string can also be specified in hexadecimal format. In this case, enter X. Then, enter the character string, enclosed in apostrophes, using EBCDIC hexadecimal representation. For example:

X'D1D6C8D5'

If the character string contains any characters that cannot be represented, hexadecimal representation can be used. A character string can also be specified using DBCS representation, enclosed in apostrophes (DBCS mixed, DBCS exclusive, or DBCS alternative). In this case, first enter G. Then, enter the DBCS string, enclosed in apostrophes. For example:

G' D B C S'

A character string can also be specified using DBCS graphic representation. In this case, first enter N. Then, enter the DBCS string, enclosed in apostrophes. An example is given below.

N' D B C S'

Using Numeric Values

A numeric value can contain an optional sign (+ or –) and optional decimal point. Either a period (.) or comma (,) can be used to represent a decimal point. For example:

.5
-. 5
1 .
+5.

Decimal alignment is performed prior to numeric field comparison. Zeros are added where numeric values are missing.

Using Expressions

An expression can contain numeric field names, numeric constants, parentheses, and the following arithmetic operators:

+ Plus sign (addition)

– Minus sign (subtraction)

* Multiplication

/ Division

For instance, the following expression searches for those records for which the number of products in stock (**ONHAND**) is at least 500 greater than the number of ordered products (**ONORDER**).

```
ONHAND > ONORDER + 5
```

The following expression searches for those records for which the price is 1 000.

```
PRICE = (1 .    1  )
```

## HAVING (Advanced)

This item is optional. It specifies which summary record is transferred.

Pay particular attention to the difference between **HAVING** and **WHERE**. **WHERE** operates on each record within a certain group. **HAVING**, on the other hand, operates only on summary records (records that contain summary information for each group).

With this item, you can specify one or more conditions that a summary record must satisfy prior to being transferred.

As the conditions, specify the tests that should be applied to the summary records. The specified test conditions are applied to all summary records, only those summary records that pass the tests are transferred. To transfer all summary records, leave the **HAVING** item blank.

The format of the conditions is as follows:

```
function  (field-name)  test  value
```

This indicates:

**function**
This is a function supported for **SELECT**. See the description of **SELECT** in this section for details of these functions.

**field-name**
This is the field defined by the record format specified in **FROM**. A field name is acceptable even when it has not been specified in **SELECT**.

**Test**
This is the comparison type for functions. The types are listed below.

| | |
|---|---|
| **=** | Equal to |
| **<> or ><** | Not equal |
| **>** | Greater than |

| | |
|---|---|
| **>=** | Greater than or equal to |
| **<** | Less than |
| **<=** | Less than or equal to |

**value**

This is a function operating on certain fields or a constant. See "WHERE (Advanced)" on page 15-24 for details of constants, expressions, and tests.

**Note:** A comma is treated as a decimal point. Therefore, do not separate numbers with commas.

Test conditions can be combined by using logical **AND** or logical **OR**. When both **AND** and **OR** are specified, **AND** comparison is performed first. Up to 50 tests can be specified. By using parentheses, the operation order can be modified, or a description can be added to an operation. For example, you can specify:

```
COUNT( ) >=2 AND MAX(PRICE) > 1
```

In this case, the following conditions are applied concurrently: groups to be transferred must contain more than one record, and the summary records in such groups are transferred only when the maximum price is greater than 100.

If the desired field cannot be found, selecting **Browse** displays a list of the names of all fields in the record.

The type, length, digit, and number of decimal places of the value returned for each function are:

| | Type | Length | Digit | Decimal Places |
|---|---|---|---|---|
| SUM | Packed | 16 | 31 | (Same as tested field) |
| AVG | Packed | 16 | 31 | 31 (Total of the digit and decimal places of the field) |
| COUNT | Binary | 4 | 1 | |
| MAX | (Same as tested field) | | | |
| MIN | (Same as tested field) | | | |

## ORDER BY (Advanced)

This item is optional. It specifies the order in which the requested records are grouped. When **ORDER BY** is not specified, record transfer is not done according to a certain order.

Records are grouped according to the field specified first. Those records having the same value in each field specified first are grouped by the field specified second, and so on. Records containing null values are grouped after all records without null values have been grouped.

For example, you can specify:

```
DEPT,NAME,PHONE
```

In this case, records are first grouped according to **DEPT**. Then, the records having the same value for **DEPT** are grouped by **NAME**. The records with the same **DEPT** and **NAME** values are finally grouped by **PHONE**.

When a field name is specified in **ORDER BY**, it must also have been specified in **SELECT**, or **SELECT*** must have been specified.

Fields can be grouped in ascending or descending order. To do this, specify one blank after a field name then enter **ASC** or **DESC**. The default value is **ASC**. For example, specify:

DEPT DESC, NAME ASC

This indicates that the **DEPT** fields are to be grouped in descending order, after which the **NAME** fields are to be grouped in ascending (alphabetic) order.

Absolute values (**ABS**) can be specified for numeric fields. To do this, add a blank after a field name then enter **ABS**. For those fields having negative values, the negative signs are ignored and the absolute values are used.

The total length of the fields to be specified must not exceed 120 digits.

### Return Record at Missing Field Value (Advanced)

When joining records from several files, joining might fail because a record is missing. This item specifies whether records with missing fields are transferred.

When you specify that records with missing fields are to be transferred, the alternative values for the missing fields are transferred. These values are normally blanks for character fields and zeros for numeric fields.

When you do not specify transfer of records with missing fields, those records are not transferred.

Specify this item to transfer data records that have alternative values for missing fields.

Do not specify this item if data records that have alternative values for missing fields are not to be specified. In this case, only those data records created from those records that exist in all files specified in **FROM** are transferred.

## TO

### Output device

This item specifies where received data is to be sent.

**Display** The received data is displayed on the screen.

**Disk** The received data is written to a workstation diskette or hard disk file.

**Printer** The received data is printed on the printer.

When **Disk** is selected as the output device, also specify the following items.

**PC file**

This item specifies the name of the workstation disk file or diskette file to which the data is to be written.

**Replace old file**

This item is always required. It specifies whether the records in the file specified by **PC File** are to be replaced with the transferred records.

The default value is **Replace old file**.

**Workstation file type**

This item is always required. It specifies the type of the workstation disk file or diskette file to which the transferred records are written.

The system default is PC code test.

**Save transfer description**

This item is always required. It specifies whether the workstation file description is written to a workstation file. This file description describes the transferred data and it is required to subsequently return data to the AS/400 system.

The system default is **Save**.

**Description file name**

This item is always required. It appears only when **Save Transfer Description** is selected. The **File Description File Name** specifies the name of the workstation disk file or diskette file to which the file description is written.

This item automatically sets the desired file name. This file name is the same as that specified by the user for **TO**, but to which extension **.FDF** has been added. Extension **.FDF** indicates that this file is a file-description file.

The use of extension **.FDF** is recommended when using a unique file name. To specify a file name in this item, use the same format as that in **TO**. (Items inside brackets [ ] can be omitted.)

[*d*:][*path-name*]*file-name*[.*ext*]

After **Save File Description File** is specified or a name is specified for **File Description File Name**, the AS/400→PC Transfer Request window reappears after the **Return** key is pressed. Using this screen, a transfer request can be changed, saved, or executed.

# Saving, Opening, Changing, and Executing a Transfer Request

The following section explains how to save, open, change, and execute, as a file, the information (transfer request) on the data to be transferred.

## Saving a Transfer Request

You should save a transfer request, especially when the request will be executed repeatedly. This eliminates the need to create a transfer request every time a request is executed. To save a transfer request, do as follows:

1. Specify the information needed for transfer, using the AS/400→PC Transfer window. See “Creating an AS/400-to-Workstation Transfer Request” on page 15-16 for an explanation of how to specify the required data.
2. After specifying the necessary data, select **Save** or **Save As** from the File pull-down menu of the menu bar.

   The Save Transfer Request File As window appears.
3. Specify each item, referring to the following explanation, then select **OK**.

   **File Name** Disk to which data is to be saved. Specify a file name or diskette file name. The default extension is TTO. Extension TTO identifies a file as a transfer request file.

   **Description** This item can be used to add a short explanation of a transfer request, as required. The explanation can be up to 40 characters in length. This explanation is saved with the transfer request, and displayed in the list of transfer request names. It is useful, therefore, for identifying a transfer request.

4. The system asks whether the saved transfer request is to be registered in the PC400 folder.

   When **OK** is selected, the transfer request is registered as an icon. Subsequently selecting this icon transfers data according to the registered data transfer request.

## Opening and Changing a Saved Transfer Request

To open and change a saved transfer request:

1. Display the AS/400→PC Transfer window.
2. Select **Open** from the File pull-down menu of the menu bar.

   The Open Transfer Request File window appears.
3. Specify the name of the file to be opened using the Open Transfer Request File window. Then select **OK**.

   The AS/400→PC Transfer window reappears, with the information specified for each item for the transfer request displayed. This completes opening of the saved transfer request.
4. Change the contents, as necessary.
5. To save the changed contents, follow the procedure given in “Saving a Transfer Request” on page 15-33.

## Executing a Transfer Request

A transfer request can be executed in one of the following three ways:

By using the OS/2 command prompt
By selecting the icon with which the transfer request has been registered
By using the AS/400→PC Transfer window of the Data Transfer icon

***Using the OS/2 Command Prompt:***

By referring to “Data Transfer Program” on page 15-5, execute the program **PCSFT5.EXE**, specifying the saved transfer request file name as a parameter.

***Selecting the Icon with Which the Transfer Request Has Been Registered:***

This method can be used only when a transfer request has been saved as an icon by using the AS/400→PC Transfer window.

Data transfer starts as soon as you select the icon with which a transfer request has been registered.

***Using the AS/400→PC Transfer Window:***

1. Before attempting to execute a transfer request, all operations such as creating, opening, and changing a transfer request must have been completed.

   **Note:** When data is transferred from a workstation to an existing member in an AS/400 file, the transferred data replaces the existing data in the member.
2. Select **Receive** from the AS/400→PC Transfer window.

   Data transfer starts.

3. After the transfer has been completed, select the **Cancel** push button, or select **Exit** from the menu bar File pull-down menu.

### Status during Transfer

**Display** can be specified as the **output device**, when the current transfer request is created or changed. This sends the transferred record to the screen. On the screen, each record is displayed on one line.

Each field in a transferred record is converted from the AS/400 data type to workstation code.

**Note:** The workstation receives the AS/400 records in order and then writes them to a temporary file of the default directory in the default drive (usually, the directory in which PC400 is installed). The maximum number of records that can be transferred is 4096 records, limited by the amount of records that can be stored in free space of the default drive.

When **Disk** is selected as the **output device**, the following actions are performed:

1. The workstation file description is written to a workstation disk file or diskette file according to the **Save File Description File** specification. (If **Save File Description File** has not been specified, this procedure is not performed.)
2. The transferred records are written to a workstation disk file or diskette file.

## Limited Usage of File Names and Field Names

For a transfer request from a workstation to the AS/400 system, none of the following reserved words can be specified as a file name or field name:

| | |
|---|---|
| CRTFILE | MBRTEXT |
| CRTMBR | PUBAUT |
| FILETEXT | RCDLEN |
| FILETYPE | REFFILE |
| INTO | |

For a transfer request from the AS/400 system to a workstation, none of the following reserved words can be used as a file name or field name:

| | |
|---|---|
| ABS | IS |
| AND | ISNOT |
| ASC | LIKE |
| AVG | MAX |
| BETWEEN | MIN |
| BY | NOT |
| COLUMNS | OPTIONS |
| COUNT | OR |
| DESC | ORDER |
| EXTRACT | PARTOUT |
| FROM | REPLACE |
| GROUP | SELECT |
| HAVING | SUBSTR |
| IN | SUM |
| INNER | TABLES |
| | WHERE |

To use one of these reserved words as a file name or field name, use the reserved word in uppercase, enclosed in quotation marks. Here is an example:

```
TO MYLIB/"INTO"
```

## Examples of Transfer Requests for Receiving

This section provides examples of transfer requests for receiving. The contents of this section provide supplementary information to help you better understand transfer requests for receiving.

This section describes how to transfer data from the AS/400 system, based on the inventory control file **INVENTORY** and supplier file **SUPPLIERS**.

The **INVENTORY** file contains information about the various parts in stock. Each part has a three-digit identification number, **PARTNUM**. The **INVENTORY** file contains the names of parts (**DESCRIPTION**) and the quantity on hand (**QONHAND**) for each part.

File: INVENTORY

| Field name: | PARTNUM | DESCRIPTION | QONHAND |
|---|---|---|---|
| Record 1: | 2 9 | CAM | 5 |
| 2: | 221 | BOLT | 65 |
| 3: | 222 | BOLT | 125 |
| 4: | 231 | NUT | 7 |
| 5: | 232 | NUT | 11 |
| 6: | 2 7 | GEAR | 75 |
| 7: | 241 | WASHER | 6 |
| 8: | 285 | WHEEL | 35 |
| 9: | 295 | BELT | 85 |

The **SUPPLIERS** file contains information about the suppliers of each part. Each supplier is identified by a two-digit number, **SUPPNO**. The **SUPPLIERS** file contains the number of parts delivered (**PARTNO**), their prices (**PRICE**), times of delivery (**DELIVTIME**), and ordered quantities (**QONORDER**). The parts listed in the **SUPPLIERS** file are the same as those listed in the **INVENTORY** file.

File: SUPPLIERS

| Field name: | SUPPNO | PARTNO | PRICE | DELIVTIME | QONORDER |
|---|---|---|---|---|---|
| Record 1: | 51 | 221 | .3 | 1 | 5 |
| 2: | 51 | 231 | .1 | 1 | |
| 3: | 53 | 222 | .25 | 15 | |
| 4: | 53 | 232 | .1 | 15 | 2 |
| 5: | 53 | 241 | . 8 | 15 | |
| 6: | 54 | 2 9 | 18. | 21 | |
| 7: | 54 | 221 | .1 | 3 | 15 |
| 8: | 54 | 231 | . 4 | 3 | 2 |
| 9: | 54 | 241 | . 2 | 3 | 2 |
| 1 : | 57 | 285 | 21. | 14 | |
| 11: | 57 | 295 | 8.5 | 21 | 24 |
| 12: | 61 | 221 | .2 | 21 | |
| 13: | 61 | 222 | .2 | 21 | 2 |
| 14: | 61 | 241 | . 5 | 21 | |
| 15: | 64 | 2 7 | 29. | 14 | 2 |
| 16: | 64 | 2 9 | 19.5 | 7 | 7 |

## Receiving Part of an AS/400 File

Specify the following items:

| | |
|---|---|
| *Library/File (Member)* | **INVENTORY** |
| **SELECT** | **PARTNUM, QONHAND** |
| **WHERE** | **QONHAND < 100** |
| **ORDER BY** | **PARTNUM** |

In this case, only part of the **INVENTORY** file is to be transferred. Specifically, only the part number (**PARTNUM**) and quantity on hand (**QONHAND**) fields of the records for which the number of parts in stock is less than 100 (**QONHAND** < 100) are transferred. Records are transferred in ascending order of parts numbers (**PARTNUM**).

The following data is transferred:

| Field: | PARTNUM | QONHAND |
|---|---|---|
| Record 1: | 2 7 | 75 |
| 2: | 2 9 | 5 |
| 3: | 295 | 85 |

## Receiving Records Joined from Several AS/400 Files

Two AS/400 files, **INVENTORY** and **SUPPLIERS**, are assumed. Note that both files contain records including part number fields. The **INVENTORY** file contains inventory information about individual parts. The **SUPPLIERS** file contains information about purchasing and ordering.

The user might want to transfer information on part numbers, part names, and the prices of the parts to be ordered from supplier 51. The desired fields are **PARTNO** (**SUPPLIERS** file), **DESCRIPTION** (**INVENTORY** file), and **PRICE** (**SUPPLIERS** file).

By comparing the data in the **INVENTORY** file and the **SUPPLIERS** file, the user can determine that supplier 51 provides part numbers 221 and 231, called **BOLT** and **NUT**, respectively, and that their prices are 30 cents and 10 cents, respectively. The following table summarizes this information:

| Field: | PARTNO | DESCRIPTION | PRICE |
|---|---|---|---|
| Record 1: | 221 | BOLT | .3 |
| 2: | 231 | NUT | .1 |

The same results are available by joining the data in these two files by using the AS/400-to-PC transfer function. To do this, specify both files (**INVENTORY** and **SUPPLIERS**) in the **FROM** item. For **SELECT**, specify which fields are to be transferred (**PARTNO**, **DESCRIPTION**, and **PRICE**). For **WHERE**, specify which records are to be transferred (records for which **SUPPNO** = 51).

Respecify the relationship between the two files in **JOIN BY**. From these results, the user can determine, by checking the **SUPPLIERS** file, that part number 221 is delivered from supplier 51 at a cost of 30 cents. In addition, to determine the part name, the user must check the **INVENTORY** file for part number 221 and its product name. In other words, the user observes that data is joined from the records in both the **SUPPLIERS** file and the **INVENTORY** file and that those

records have the same part number. Therefore, to link the two records in these files, the records must have the same part number.

In short, to obtain this information, specify:

| | |
|---|---|
| *Library/File (Member)* | **SUPPLIERS, INVENTORY** |
| **JOIN BY** | **PARTNO = PARTNUM** |
| **SELECT** | **PARTNO, DESCRIPTION, PRICE** |
| **WHERE** | **SUPPNO = 51** |
| **ORDER BY** | **PARTNO** |

## Receiving Records Using File Qualifiers

To join records from several AS/400 files, fields of the same type must be joined.

For example, the part number fields in the **INVENTORY** and **SUPPLIERS** files can have the same name **PARTNO**. To specify the desired **PARTNO** fields, the user must specify which file contains those fields. To do so, file qualifiers are used.

A file qualifier is the character **T** (uppercase or lowercase) followed by a one- or two-digit number. A comma is used to delimit the file qualifier and field name. In the previous example, prefix **T1.** and **T2.** to the **PARTNO** field names. **T1.** indicates the first file of **FROM**, while **T2.** indicates the second.

To obtain the same information as in the previous example, specify:

| | |
|---|---|
| *Library/File (Member)* | **SUPPLIERS, INVENTORY** |
| **JOIN BY** | **T1.PARTNO = T2.PARTNO** |
| **SELECT** | **T1.PARTNO, DESCRIPTION, PRICE** |
| **WHERE** | **SUPPNO = 51** |
| **ORDER BY** | **T1.PARTNO** |

**T1.PARTNO** indicates the **PARTNO** fields in the **SUPPLIERS** file, while **T2.PARTNO** indicates the **PARTNO** fields in the **INVENTORY** file.

Qualifiers are not needed for the names of the **DESCRIPTION**, **PRICE**, and **SUPPNO** fields, because they exist in one file only. However, the user can specify the following qualifiers for clarity:

T2.DESCRIPTION, T1.PRICE, T1.SUPPNO

The following examples of joining several AS/400 files describe more sophisticated techniques. You should now be familiar with the basics of how to join two files. For a more detailed explanation, refer to the following sections.

## Receiving with Field Missing Records Joined

The joining of records from several files could fail because one or more records is missing. For example, the record containing part number 221 might not be found in the **INVENTORY** file. This means that the records that can be joined to the 1st, 7th, and 12th records in the **SUPPLIERS** file do not exist in the **INVENTORY** file. In this case, the **PARTNO** field and **PRICE** field for part number 221 can be determined, but the **DESCRIPTION** field cannot be determined. So, the **DESCRIPTION** field is missing.

To transfer field missing records, use **Return Record at Missing Field Value**.

When **Return Record at Missing Field Value** has been specified, the default AS/400 values are transferred instead of the missing field values. The default values for character fields are blanks, while those for numeric fields are zeros. For example, if the **INVENTORY** file does not contain the part number 221 record, the result of the previous example will be as follows:

```
        Field: PARTNO    DESCRIPTION    PRICE
               ------    -----------    -----
Record  1:      221                      .3
        2:      231     NUT              .1
```

If **Return Record at Missing Field Value** has not been specified, the field missing records are not transferred. For example, if the **INVENTORY** file does not contain the part number 221 record, the result of the previous example will be as follows:

```
        Field: PARTNO    DESCRIPTION    PRICE
               ------    -----------    -----
Record  1:      231     NUT              .1
```

## Receiving with Records in a Same File Joined

Records in the same file can be joined. In other words, a file can be repeatedly specified in **FROM**. For instance, data in certain records can be compared using this function.

For example, the **SUPPLIERS** file shows that several suppliers provide the same part. The user might want to know which supplier sets a price that is double, or greater than double, that of another. To transfer the necessary information to a workstation, specify:

| | |
|---|---|
| *Library/File (Member)* | **SUPPLIERS, SUPPLIERS** |
| **JOIN BY** | **T1.PARTNO = T2.PARTNO** |
| **SELECT** | **T1.PARTNO, T1.SUPPNO**, **T1.PRICE**, **T2.SUPPNO**, **T2.PRICE** |
| **WHERE** | **T1.PRICE > 2 * T2.PRICE** |
| **ORDER BY** | **T1.PARTNO** |

The same file has been specified in **FROM** twice. **JOIN BY** specifies that records having the same part number are joined. This creates a joined record containing information about two suppliers of a single part. The user can spot those records for which the price is double, or greater than double, that of another supplier.

Records in the **SUPPLIERS** file are compared, one by one, with all the records (including itself) in the **SUPPLIERS** file. When the same part number is found, the two corresponding records are linked. This processing is performed for each record in the **SUPPLIERS** file.

For each record, the first supplier's price is compared with the second supplier's price. When the first supplier's price is double, or greater than double, that of the second, only the record containing the first supplier price is kept.

The final result is as follows:

| Field: | T1.PARTNO | T1.SUPPNO | T1.PRICE | T2.SUPPNO | T2.PRICE |
|---|---|---|---|---|---|
| Record 1: | 221 | 51 | .3 | 54 | .1 |
| 2: | 231 | 51 | .1 | 54 | . 4 |
| 3: | 241 | 53 | . 8 | 54 | . 2 |
| 4: | 241 | 61 | . 5 | 54 | . 2 |

## Specifying Records to Be Included in a Group

You might want to limit which records will be included in a group. To do so, use **WHERE**. For example, the following example transfers the average and lowest prices of each part for those records for which the delivery time (**DELIVTIME**) is less than 30 days.

| | |
|---|---|
| *Library/File (Member)* | **SUPPLIERS** |
| **GROUP BY** | **PARTNO** |
| **SELECT** | **PARTNO, AVG(PRICE), MIN(PRICE)** |
| **WHERE** | **DELIVTIME < 30** |

The result is as follows:

| Field: | PARTNO | AVG(PRICE) | MIN(PRICE) |
|---|---|---|---|
| Record 1: | 221 | .25 | .2 |
| 2: | 231 | .1 | .1 |
| 3: | 222 | .23 | .2 |
| 4: | 232 | .1 | .1 |
| 5: | 241 | . 7 | . 5 |
| 6: | 2 9 | 18.75 | 18. |
| 7: | 285 | 21. | 21. |
| 8: | 295 | 8.5 | 8.5 |
| 9: | 2 7 | 29. | 29. |

Note that the conditions specified in **WHERE** are checked first, then the records that satisfy those conditions are included in the group.

## Specifying Summary Records to Be Transferred

In some cases, you might want to transfer only summary records that satisfy certain conditions. The use of **HAVING** enables the selection of which summary records are to be transferred. **WHERE** is applied to certain records in a group, while **HAVING** is applied only to summary records.

The following example transfers the highest and lowest prices for each part. However, the summary records to be transferred are only those for which the highest price exceeds 10.00.

| | |
|---|---|
| *Library/File (Member)* | **SUPPLIERS** |
| **GROUP BY** | **PARTNO** |
| **SELECT** | **PARTNO, MAX(PRICE), MIN(PRICE)** |
| **HAVING** | **MAX(PRICE) > 10.00** |

The following table shows the result of removing unnecessary summary records by using **HAVING**.

```
        Field:  PARTNO     MAX(PRICE)     MIN(PRICE)
                ------     ----------     ----------
Record  1:       2 9          19.5           18.
        2:       285           21.           21.
        3:       2 7           29.           29.
```

One summary record for an entire file can be transferred. To do this, specify only the summary function in **SELECT** and nothing in **GROUP BY**. As a result, an entire file can be recognized as one group, while one summary record can be transferred for the group.

You can concurrently use the concept of summarizing groups and that of joining records from several files. To obtain the desired results, do as follows:

1. Specify a file in **FROM**, and specify the join conditions to join the records in **JOIN BY**.
2. Specify the conditions in **WHERE** to remove unnecessary records.
3. Specify the fields used for grouping the remaining records in **GROUP BY**.
4. Specify the function in **SELECT**, then create summary records.
5. Specify the conditions in **HAVING** to remove unnecessary records.
6. Specify the items for grouping the final summary records in **ORDER BY**.

## Functions Available from Pull-Down Menu

The following section provides a simple explanation of the menu bar of the AS/400→PC Transfer window and PC→AS/400 Transfer window.

### File

Transfer request files can be processed.

**Create**
This item creates a transfer request file.

**Open**
This item displays the contents of an existing transfer request file.

**Save, Save As**
These items save the current settings to the transfer request file being used or to a new transfer request file, respectively.

**Exit**
This item terminates the operation started by selecting the **Data Transfer** icon.

### Setup (Only for AS/400→PC Transfer)

**User options**

Time, date, and numeric value format for receiving can be specified. The following paragraphs describe each item.

**Ignore Decimal Data Error**
This item specifies whether decimal data errors found in packed or zoned decimal fields upon executing requests are to be ignored. Selecting **Yes** to ignore decimal data errors and using existing indices can considerably reduce the time needed to execute a request. If this item is not specified,

the transfer request creates indices again and modifies any detected decimal data errors. This requires extra processing time.

**Time Format**

This item specifies a desired time format for fields of AS/400 field type having a selected time. If no time format is specified, the default value in the workstation's national information file is assumed when the transfer request starts, and that in an existing transfer request is assumed when the request is called again.

Supported time formats are as follows:

**HMS** Hours, minutes, seconds (hh:mm:ss)
**ISO** International Standard Organization (hh.mm.ss)
**USA** USA Standard (hh:mm AM or PM)
**EUR** IBM European Standard (hh.mm.ss)
**JIS** Japanese Industrial Standard (hh:mm:ss)
**DDS** AS/400 DDS (Format given by AS/400 file attribute)
**DFT** AS/400 default format (Host job default is used)

**Time separator**

This item specifies enabled delimiters when fields of the AS/400 field type for the selected time are of the format type for which delimiters can be specified.

When no delimiters are specified, the default value in the workstation's national information file is assumed when the transfer request starts, and that in an existing transfer request is assumed when the request is called again.

Supported time delimiters are as follows:

**Colon** (:)
**Period** (.)
**Comma** (,)
**Blank** ( )
**Null** (NULL) No Separator
**Default value**
(DFT) AS/400 Default Separator

**Date Format**

Specifies the date format for fields of AS/400 field type for the selected date.

If this date format is not specified, the default value in the workstation's national information file is assumed.

Supported values are as follows:

**MDY** Month, day, year (mm/dd/yy)

**DMY** Day, month ,year (dd/mm/yy)

**YMD** Year, month, day (yy/mm/dd)

**JUL** Julian (yy/ddd)

**ISO** International Standard Organization (yyyy-mm-dd)

**USA** USA Standards (mm/dd/yyyy)

**EUR** IBM European Standard (dd.mm.yyyy)

**JIS** Japanese Industrial Standard (yyyy-mm-dd)

**DDS** AS/400 DDS (Format given by AS/400 file attribute)

**DFT** AS/400 default format (Host job default is used)

**Date separator**

This item specifies delimiters when fields of the AS/400 field type for the selected date are of the format type for which delimiters can be specified.

When no date delimiters are specified, the default value in the workstation's national information file is assumed when the transfer request starts, and that in an existing transfer request is assumed when the request is called again.

Supported date delimiters are as follows:

**Slash** (/)
**Dash** (-)
**Period** (.)
**Comma** (,)
**Blank** ( )
**Null** (Null) Delimiters are not used.
**DFT** (DFT) AS/400 default separator

**Decimal separator**

This item specifies the decimal point character in an AS/400 field whose type is packed decimal or zoned decimal.

When decimal points are not specified, the default value in the workstation's national information file is assumed when the transfer request starts, and that in an existing transfer request is assumed when the request is called again.

Supported decimal point delimiters are as follows:

**Period** (.)
**Comma** (,)
**DFT** (DFT) - Default decimal separator

**Sort Sequence**

Specify which sort sequence should be used for this transfer request.

**AS/400 job default**
Sort by the table identified on the AS/400 system as the job sort table.

**Hexadecimal**
Sort by the internal hexadecimal representation.

**User specified table**
Sort by the table identified by the user in a subsequent prompt.

**Shared Weight Table**
Sort by the shared weight table associated with the language named in a subsequent prompt.

**Unique Weight Table**
Sort by the shared unique table associated with the language named in a subsequent prompt.

Changing the sort sequence affects the order in which records appear ***only*** if the **ORDER BY** clause is being used. The sort sequence affects all character comparisons that depend on the order of the alphabet. Such comparisons can occur in the **WHERE** clause, the **GROUP BY** clause, the

**HAVING** clause, the **JOIN BY** clause, the **IN** predicate, the **LIKE** predicate, the **BETWEEN** predicate, the **MAX** function, and the **MIN** function. Comparison operations are =, <>, >, >=, and >=.

**Sort Sequence Table Name**
Type the name of the sort sequence table that you want to use for this transfer request. The format of the table name should be *library/table*. ***LIBL** and ***CURLIB** are allowed for the library name.

**Language**
AS/400 standard tables provide many languages. Select the user-specified languages to enter the desired language ID. Language IDs shipped with AS/400 are found in the *AS/400 NLS Guide*.

**Language ID**
Enter the language ID for the desired language.

AS/400 standard tables provide many languages. Language IDs shipped with AS/400 are found in the *AS/400 NLS Guide*.

**Translation Table**

Translation tables for ASCII-to-EBCDIC translation or for EBCDIC-to-ASCII translation can be specified, created, and customized. The following paragraphs describe each item.

**Current Table**
This item specifies whether the IBM default translation or the user-defined translation table is to be used.

**Host Code Page**
This item specifies the host code page to be used for translation.

**Workstation Code Page**
This item specifies the workstation code page to be used for translation.

**File Name**
This item specifies the file name of the user-defined table to be used for translation.

To list all files in your workstation, select **Browse**.
To customize the translation table, select **Customize**.

## File-Description Files

A file-description file is a workstation file that contains all field descriptions of the data in the corresponding workstation data file. Each field descriptor contains the field name, data type, and field length. There is one field descriptor for each field in the workstation file.

A file-description file defines:

File type of the workstation file to be transferred. For an explanation of each file type, see “File-Description Files.”

Field names and order of these fields in each data record.

Data type of each field in the workstation file.

Size and number of decimal places of each field.

The workstation files require field definitions when the files are transferred. The field definitions describe the file as it exists on the workstation. These definitions contain data that is similar to the field definitions (DDS) required by AS/400 system files. The data must be defined for both the AS/400 system and the workstation files, because the field names from each file are needed to send the data to the AS/400 system and the data in each file might be in different formats.

A file-description file is created on request during the transfer process of data from an AS/400 file to a workstation file. Therefore, you usually do not need to worry about the contents or the format of the file-description file. However, if you transfer data that has not been previously transferred to the system, you must create a file-description file.

## Creating a File-Description File

You can create a file-description file using a workstation text editor. The file-description file must be an ASCII text file. Therefore, each record must end with a carriage return (CR) character (hex 0D) followed by a line feed (LF) character (hex 0A). All tab characters (hex 09) are treated as ASCII spaces. The last byte of the file must contain an end-of-file (EOF) character (hex 1A). Workstation editors that create ASCII text files usually use these special character designators, so normally you do not need to be concerned about them.

### File-Description File Format

The format of the file-description file is as follows:

```
PCFDF [comment]
PCFT file-type-indicator [comment]
PCFO time-format,time-separator, date-format, date-separator, decimal-separator [comment]
PCFL field-name-1 data-type-1 length-1[/decimal-position-1][comment]
    .
    .
    .
PCFL field-name-n data-type-n length-n[/decimal-position-n][comment]
[ comment]
```

Items within brackets are optional. Use either uppercase or lowercase characters anywhere in the file.

***PCFDF Entries:*** PCFDF is a keyword that identifies this file as a workstation file-description file. It must appear in the first line of the file, starting in column 1. A comment is the only other entry allowed on the first line. If you type a comment, it must be separated from the PCFDF keyword by a space.

***PCFT Entries:*** PCFT is a keyword that identifies this record as containing the file type indicator. It is followed by an indicator identifying the type of file in which the data is stored. It must appear only once, and must start in column 1, after the PCFDF record and before any PCFL records. An optional comment can follow this file-type indicator if separated from the indicator by at least one space.

Following is an example of a PCFT entry:

```
PCFT 4 BASIC RANDOM FILE
```

Table 15-1 on page 15-46 shows the valid file-type indicators.

*Table 15-1. File-Type Indicators*

| Indicator | File Type |
|---|---|
| 1 | ASCII text |
| 2 | DOS random |
| 3 | BASIC sequential |
| 4 | BASIC random |
| 5 | Data interchange format (DIF**) |
| 6 | No-conversion file |
| 7 | Reserved |
| 8 | DOS random type 2 |
| 9 | BIFF format |

***PCFO Entry:*** The PCFO entry is optional. PCFO is a keyword that identifies this record as containing information about the date and time formats, time stamp, and separator characters for applicable formats. It must appear only once and must start in column 1, after the PCFT record and before any PCFL records. If there is no PCFO entry, the information or characters assigned as defaults for the host system are used.

Table 15-2 shows the valid time formats.

*Table 15-2. Time Formats*

| Indicator | Format Name | Time Format |
|---|---|---|
| 1 | HMS | hh:mm:ss |
| 2 | ISO - International Standards Organization | hh.mm.ss |
| 3 | USA - USA standard | hh:mm AM or PM |
| 4 | EUR - European | hh.mm.ss |
| 5 | JIS - Japanese Industrial Standard Christian Era | hh:mm:ss |
| 6 | DDS | Format given by AS/400 file attribute |
| 7 | DFT | Host job default is used |
| * | Unspecified | Host job default is used |

Table 15-3 on page 15-47 shows the valid time separators.

*Table 15-3. Time Separators*

| Indicator | Separator |
|---|---|
| 1 | Colon (:) |
| 2 | Period (.) |
| 3 | Comma (,) |
| 4 | Blank ( ) |
| 5 | Null (N) |
| 6 | Default (D) (host job default) |
| * | Unspecified (host job default) |

Table 15-4 shows the valid date formats.

*Table 15-4. Date Formats*

| Indicator | Format Name | Date Format |
|---|---|---|
| 1 | MDY | mm/dd/yy |
| 2 | DMY | dd/mm/yy |
| 3 | YMD | yy/mm/dd |
| 4 | Julian | yy/ddd |
| 5 | ISO | yyyy-mm-dd |
| 6 | USA | mm/dd/yyyy |
| 7 | EUR | dd.mm.yyyy |
| 8 | JIS | yyyy-mm-dd |
| 9 | DDS | Format given by AS/400 file attribute |
| 10 | DFT | Host job default is used |
| * | Unspecified | Host job default is used |

Table 15-5 shows the valid date separators.

*Table 15-5 (Page 1 of 2). Date Separators*

| Indicator | Separator |
|---|---|
| 1 | Slash (/) |
| 2 | Dash (–) |
| 3 | Period (.) |
| 4 | Comma (,) |
| 5 | Blank ( ) |
| 6 | Null (N) |

*Table 15-5 (Page 2 of 2). Date Separators*

| Indicator | Separator |
|---|---|
| 7 | Default (D) (host job default) |
| * | Unspecified (host job default used) |

Table 15-6 shows the valid decimal separators.

*Table 15-6. Decimal Separators*

| Indicator | Separator |
|---|---|
| 1 | Period (.) |
| 2 | Comma (,) |
| * | Unspecified (workstation default used) |

Following is an example of a PCFO entry:

```
PCFO 1,1,1,1,1 OPTIONS SETTINGS
```

***PCFL Entries:*** PCFL identifies a definition for a field. Enter a PCFL entry in the file-description file for each field in the data file. The PCFL records must be in the same order as the fields they define in the data file.

Define as many as 256 PCFL records in the file-description file and start PCFL records in column 1. If you enter more than 256 PCFL records, you receive an error message. You cannot continue a record on one line, and only the first 80 characters of a record are used.

Following is an example of a PCFL entry:

```
PCFL CUSTNAME 1 2     CUSTOMER NAME
```

Each PCFL entry contains the following things:

- The keyword, PCFL, starting in column 1 and followed by a space. This identifies the record as a field description.
- The field name, followed by a space. This must match the name that exists in the field definitions on the AS/400 system and can be from 1 to 10 characters.
- The indicator for the data type. Table 15-7 on page 15-49 shows the indicators that represent the data type of the data in the field. Follow the specified indicator with a space.
- The size of the field (in bytes) as it is stored in the workstation file. The length specification can be from 1 to 4 characters.

*Table 15-7. Data Type Indicators*

| Indicator | Data Type |
|---|---|
| 1 | ASCII[1] |
| 2 | ASCII numeric |
| 3 | Hexadecimal |
| 4 | Binary |
| 5 | Zoned |
| 6 | Packed |
| 7 | BASIC integer |
| 8 | BASIC single-precision floating point |
| 9 | BASIC double-precision floating point |
| 10 | EBCDIC |
| 11 | EBCDIC zoned |
| 12 | EBCDIC packed |

**Note:**

1 Includes date, time, and time stamp except for files that are not converted.

The data type indicator you enter must be valid for the file type entered earlier. Any other data types are not valid and are diagnosed as errors during a data transfer to the AS/400 system.

Table 15-8 shows the valid single-byte character set (SBCS) data types for each file.

*Table 15-8 (Page 1 of 2). Valid SBCS Data Types for File Types*

| File Type | Valid Data Type |
|---|---|
| ASCII text | ASCII<br>ASCII numeric |
| DOS random | ASCII<br>Binary<br>Hexadecimal<br>Packed<br>Zoned |
| BASIC sequential | ASCII<br>ASCII numeric |

*Table 15-8 (Page 2 of 2). Valid SBCS Data Types for File Types*

| File Type | Valid Data Type |
|---|---|
| BASIC random | ASCII<br>BASIC double-precision floating point<br>BASIC integer<br>BASIC single-precision floating point<br>Hexadecimal |
| DIF | ASCII<br>ASCII numeric |
| No-conversion | Binary<br>EBCDIC<br>EBCDIC packed<br>EBCDIC zoned<br>Hexadecimal |
| DOS random type 2 | ASCII<br>Binary<br>Hexadecimal<br>Packed<br>Zoned |
| BIFF format | ASCII<br>ASCII numeric |

**Note:** ASCII (SBCS) includes date, time, and time stamp types if converted. EBCDIC includes date, time, and time stamp if not converted.

For numeric fields in BASIC sequential and DIF files, a size specification must be present. However, because the data in these fields is of variable length, the data transfer function assumes a maximum length of 65 characters. This length more than covers the largest possible exponential ASCII numeric value. The size specifications for character fields must be the maximum size of any data item in that field.

Table 15-9 shows the allowed data length limits for each workstation data type. These are the maximum lengths you can specify for size in the PCFL entry.

*Table 15-9 (Page 1 of 2). Allowable Data Length Limits for Personal Computer SBCS Data Types*

| Personal Computer Data Type | Data Length Limit (in Bytes) |
|---|---|
| ASCII | 4093 |
| ASCII numeric | 33 (65 for DIF and BASIC sequential) |
| BASIC double-precision | 8 (only allowed length) |
| BASIC integer | 2 (only allowed length) |
| BASIC single-precision | 4 (only allowed length) |

*Table 15-9 (Page 2 of 2). Allowable Data Length Limits for Personal Computer SBCS Data Types*

| Personal Computer Data Type | Data Length Limit (in Bytes) |
|---|---|
| Binary | 4 |
| EBCDIC | 4093 |
| Hexadecimal | 2048 |
| Packed decimal (ASCII and EBCDIC) | 16 |
| Zoned decimal (ASCII and EBCDIC) | 31 |
| Time | |
| HMS (see note 1) | 8 |
| USA | 8 |
| ISO, EUR, and JIS (see note 1) | 8 |
| DDS, DFT | 8 or 10 (see note 2) |
| Date | |
| MDY, DMY, YMD | 8 |
| Julian | 6 (only allowed length) |
| ISO, EUR, JIS, USA (see note 1) | 10 |
| DDS, DFT | 6, 8, or 10 (see note 2) |
| Time stamp | 26 |

**Notes:**

1 These abbreviations appear in the time and date parameter sections.

| Abbreviation | Description |
|---|---|
| HMS | Hours Minutes Seconds |
| EUR | IBM European Standard |
| JIS | Japanese Industrial Standard Christian Era |
| ISO | International Standards Organization |

2 The length is determined by the format defined in the host file for DDS, or from the AS/400 job default (DFT keyword).

Table 15-10 shows the allowed data length limits for each AS/400 data type.

*Table 15-10 (Page 1 of 2). Allowable Data Length Limits for AS/400 Data Types*

| AS/400 Data Type | Data Length Limit in Bytes (see note 1) |
|---|---|
| Binary | 2 or 4 (only allowed lengths) |
| EBCDIC | 4096 |

*Table 15-10 (Page 2 of 2). Allowable Data Length Limits for AS/400 Data Types*

| AS/400 Data Type | Data Length Limit in Bytes (see note 1) |
|---|---|
| Hexadecimal | 2048 |
| Packed decimal (EBCDIC) | 16 |
| Zoned decimal (EBCDIC) | 31 |
| Time | |
| HMS | 8 |
| USA | 8 |
| ISO, EUR, and JIS | 8 |
| DDS, DFT | 8 or 10 (see note 2) |
| Date | |
| MDY, DMY, YMD | 8 |
| Julian | 6 (only allowed length) |
| ISO, EUR, JIS, USA | 10 |
| DDS, DFT | 6, 8, or 10 (see note 2) |
| Time stamp | 26 |

**Notes:**

1 The data length limits for the workstation and the system data fields are different in some cases. For these cases, the transfer function attempts to fit the workstation data into the system field. If the data does not fit into the field, a message is displayed. Refer to "Data Conversions" on page 15-53 for more details.

2 The length is determined by the format defined in the host file for DDS, or from the AS/400 job default (DFT keyword).

If there is a decimal position associated with the data in that field, place a forward slash (/) and then the number of decimal positions after the length specification. There are no spaces between the length, slash, and decimal position specifications.

The decimal position specification refers to the number of positions from the right-hand byte of the resulting decimal number. Do not specify a decimal position for floating-point numbers unless the data type is one of the following types:

ASCII numeric
Binary
Packed
Zoned

**Note:** The number of decimal positions in a field ranges from 0 to 9 or the maximum number of decimal digits in this number, whichever is smaller. The data transfer function might round the number to fit it into the field. Refer to "Data Conversions" on page 15-53 for more details.

***Comment Entries:*** Enter comment lines anywhere in the file-description file, observing the following restrictions:

The last element of the field-descriptor entry specification is a comment. This is an optional entry for your information only, and must be separated from the size entry by a space. PCFL entries created by the data transfer function (RTOPC) do not contain a comment field.

Precede the comment with an asterisk (*) as the first nonspace character in the line.

Do not exceed 80 characters in length.

Do not make the comment the first record in the file-description file.

Following is an example of a comment:

```
This is a comment
```

## Example

Following is an example of a file-description file for an inventory file:

```
PCFDF
PCFT 3 BASIC SEQUENTIAL FILE
 ITEM INVENTORY FILE
PCFO 1,1,1,2,1 OPTIONS SETTINGS
PCFL ITEMNO 2 8    ITEM NUMBER
PCFL ITEMDESC 1 2     DESCRIPTION OF ITEM
PCFL COLOR 1 8    COLOR
PCFL WEIGHT 2 7/2    ITEM WEIGHT
PCFL PRICE 2 7/2    PRICE PER ITEM
PCFL INSTOCK 2 6    ITEMS IN STOCK
```

# Data Conversions

The data transfer function needs data conversions for transferring data from the system to the workstation, and vice versa. For both types of transfers, the necessary conversion depends on the record size, the type of data being transferred, the type of workstation file being used, the system data type, and, in some cases, the data length.

## Record Size

Each transferred record contains data indicating whether each field contains a null value. There is a restriction on the maximum data record that can be sent or received from the AS/400 system because of this data.

The following formula determines the maximum record length that can be transferred:

```
4 96 – (number of fields in the record + 2) = (maximum record length)
```

# Data Types

The data transfer function supports the following system data types:

Binary data
Character data
Date
Hexadecimal data
Packed decimal data
Time
Time stamp
Zoned decimal data

The data transfer function supports the following workstation data types:

ASCII numeric data
BASIC numeric data, including:
- Double-precision data
- Integer data
- Single-precision data

Binary data
Character data, including:
- ASCII
- EBCDIC

Hexadecimal data
Packed decimal data
Zoned decimal data

## ASCII Numeric Data

The data transfer function defines ASCII numeric data to represent any numeric value stored in ASCII format. This is not a valid AS/400 system data type. The number −123.45 in ASCII format is:

2D 31 32 33 2E 34 35

The decimal point and sign are stored explicitly for ASCII numeric data. The character on the left displays the sign (space or plus (+) for positive, minus (−) for negative). Leading zeros to the left of the decimal point change to spaces. The decimal point, if any, is added in the correct position.

BASIC sequential and DIF file types also support another form of ASCII numeric data called exponential numbers.

An exponential number is a decimal number followed by the letter E or D and a signed integer of two or three digits. E represents a single-precision number and D represents a double-precision number. The exponent portion (E or D and the integer) represents “times 10 to the power of the integer specified.”

For example, the number −1.0E+03 (representing $-1.0 \times 10^{3}$ in ASCII numeric format) is:

2D 31 2E 30 45 2B 30 33

For example, the number 9.5D−15 (representing $9.5 \times 10^{-15}$ in ASCII numeric format) is:

39 2E 35 44 2D 31 35

## Binary Data

This data represents signed or unsigned numbers in twos complement form. Binary numbers of 1, 2, 3, or 4 bytes in length are allowed on the workstation, but the AS/400 system allows only numbers 2 or 4 bytes in length. The bit on the left side of the high-order bit determines the sign of the number (0 for positive, 1 for negative). The system stores the data with the high-order byte on the left side of the field, whereas the workstation stores the data with the high-order byte in the right-hand position of the field.

The decimal position, if specified by the file description, represents the number of decimal digits to the right of the decimal point. The file description specifies the presence of a decimal position.

For example, the binary number 3BF5 is equivalent to the decimal number 15349, and the binary number FFB4 is equivalent to the decimal number –76.

## Character Data for SBCS

You can think of this data as a string of bits that represents particular characters and symbols.

The tables used to translate characters from ASCII to EBCDIC and from EBCDIC to ASCII contain the following kinds of values:

Values where the workstation ASCII characters and AS/400 EBCDIC characters match exactly

Values where a substitute character is chosen for a character that cannot be translated

The data transfer function uses tables to translate data from ASCII to EBCDIC and EBCDIC to ASCII. You can change these default tables using the translation table utility (TRTABLE).

**Note:** ASCII (SBCS) data includes date, time, and time stamp types if converted. EBCDIC data includes date, time, and time stamp if not converted.

## Double-Precision Data

Double-precision data is defined only for the workstation. The AS/400 system does not support this data type. BASIC applications use double-precision data. This data type is a positive or negative number from $2.938735877055719 \times 10^{-39}$ to $1.701411834604692 \times 10^{38}$. Double-precision numbers are stored in 8 bytes, with 7 bytes representing the mantissa and 1 byte representing the exponent.

## Date, Time, and Time-Stamp Data Types

Date, time, and time-stamp values can be used in certain arithmetic and character operations and are compatible with certain character constants, but they are neither characters nor numbers.

A date is a three-part value (year, month, and day) designating a point in time on the calendar. The range of the year is 0001 to 9999. The range of the year for a non-SAA format is 1940 to 9999. The range of the month is 1 to 12. The range of the day is 1 to *x*, where *x* depends on the month.

A time is a three-part value (hour, minute, and second) designating a time of day under a 24-hour clock. The range of the hour is 0 to 24 and the range of the other values is 0 to 59.

A time stamp is a seven-part value (year, month, day, hour, minute, second, and microsecond) that designates a date and time including the specified microseconds. The maximum length of the time stamp is a character string of 26.

Dates, times, and time stamps can be assigned to result fields. A valid character-string representation of a date can be compared with a date field, or a valid character-string representation of a time can be compared with a time field.

### Hexadecimal Data

You can think of this data as a string of bits representing base 16 numbers. For example, you can represent hex 3D with the following string of bits:

0011 1101

### Integer Data

Integer data is defined only for the workstation. BASIC applications use integer data. Integer data is stored in 2 bytes and represents a whole number from –32768 to 32767.

### Packed Decimal Data

For both the AS/400 system and the workstation, each half-byte represents a value from 0 through 9. The hexadecimal value in the half-byte on the right side of the right-hand byte specifies the sign.

For the AS/400 system, a value of hex B or hex D in this half-byte represents a negative number.

For DOS random files, only the last half-byte (the half-byte that contains the sign) is changed. For the sign half-byte, the workstation uses hex 3 to indicate a positive number or hex B to indicate a negative number.

For example, X'0865431F' appears as X'08654313'.

For DOS random type-2 files, the last half-byte (the half-byte that contains the sign) is not changed. The sign convention used on the workstation and on the host system is the same.

For example, X'0865431C' appears as X'0865431C'.

The decimal position, if specified, represents the number of decimal digits to the right of the decimal point. The presence of a decimal position is specified in the file description.

### Single-Precision Data

Single-precision data is defined only for the workstation. The AS/400 system does not support this data type. BASIC applications use single-precision data. This data type is a positive or negative number from $2.938736 \times 10^{-39}$ to $1.701412 \times 10^{38}$. Single-precision numbers are stored in 4 bytes, with 3 bytes representing the mantissa and 1 byte representing the exponent and sign.

### Zoned Decimal Data

This data is represented in a form in which each byte corresponds to one decimal digit. Each of these bytes is stored in character form. For example, the digit 7 is stored on the AS/400 system as F7, which is the EBCDIC representation, and is stored on the workstation as 37, which is the ASCII representation.

The size of each digit is determined by its half-byte on the right side. Valid values for the half-bytes are decimal 0 through 9.

The sign in both the AS/400 system and workstation zoned decimal fields is specified by the hexadecimal value in the left half-byte of the right byte of the field. For the AS/400 system, a hex B or hex D in this half-byte represents a negative number (for example, X'F6D2' represents –62).

For DOS random files, zoned decimal fields from the system change from EBCDIC to ASCII, as do character fields, except that the sign half-byte in the workstation field is changed to a hex 3 to indicate a positive number or a hex B to indicate a negative number.

For DOS random type-2 files, zoned decimal fields from the system change from EBCDIC to ASCII, as do character fields, except that the sign half-byte in the workstation field is changed to a hex 3 to indicate a positive number or a hex 7 to indicate a negative number.

The decimal position, if specified, represents the number of decimal digits to the right of the decimal point and is specified by the file description.

## Personal Computer File Types

The following workstation file types are supported:

ASCII text files
BASIC random files
BASIC sequential files
DIF files
BIFF files
DOS random files
DOS random type-2 files
No-conversion files

### ASCII Text Files

ASCII text files are normally used with programs that work with text (such as editors and print routines). The characteristics of an ASCII text file are as follows:

Records consist of ASCII characters.

A carriage return character (hex 0D) and a line feed character (hex 0A) delimit each record from the next. The character for end-of-file is hex 1A.

Workstation records in an ASCII file can be variable in length due to truncation of trailing blanks at the end of an AS/400 record.

***Transferring Data to ASCII Text Files:*** When you create an ASCII text file, the data coming from the AS/400 system changes as follows:

Hexadecimal fields change to equivalent ASCII characters for each half-byte.

For example, X'D3' expands to ASCII 4433 and is written to the file. When displayed by an editor or printed, the string appears as D3.

EBCDIC character fields change byte by byte and are mapped into ASCII characters as defined by the translation tables.

Date, time, and time-stamp data is mapped into ASCII characters as defined by the translation tables.

Variable-length and null fields are converted to fixed lengths, and trailing blanks (for character, hexadecimal, date, time, and time-stamp data) or zeros (for binary, zoned, and packed,) are added to the maximum length of the field.

**Note:** Some nondisplayable EBCDIC characters are translated into ASCII control characters on the workstation. If EBCDIC character fields contain nondisplayable data, you might get unexpected results and your ASCII text file might appear to be corrupted.

For example, X'05' in an EBCDIC field is translated to an ASCII X'09', which is an ASCII control character for horizontal tab. Most workstation text editors process this tab character so that the data in your workstation text file appears to be shifted to the right when viewed. If one of the EBCDIC characters is X'3F', it translates into an ASCII X'1A', which is interpreted as end-of-file by the workstation text editor. You might not be able to view any of the remaining records that were transferred to your ASCII text file.

One possible solution to this problem is to define these fields on the host system as hexadecimal fields instead of character fields.

Binary fields change to ASCII numeric. For example, X'FFD3' with no decimal position expands to ASCII 20202020202020202D3435. When displayed by an editor or printed, the string appears as –45.

**Note:** The length of the ASCII field depends on the length of the binary field.

A binary field on the AS/400 system is either 2 or 4 bytes long. The resulting ASCII field length is from 6 to 11 bytes, including the sign. Another byte is added for a decimal point.

Table 15-11 shows the mapping between binary field lengths and their ASCII lengths.

*Table 15-11. Binary-to-ASCII Field Length Mapping*

| Binary Length | ASCII Length | Value Range |
|---|---|---|
| 2 | 6 | –32768 to 32767 |
| 4 | 11 | –2147483648 to 2147483647 |

Zoned decimal fields are changed to ASCII numeric. For example, EBCDIC F0F0F9F5F2D6 with a field length that indicates two digits to the right of the decimal point expands to ASCII 20202D39352E3236. When displayed by an editor or printed, the string appears as –95.26. The resulting workstation field length is equal to the length of the system field plus 1 for the sign and 1 for the decimal point, if specified.

Packed decimal fields change to ASCII numeric. For example, X'871D' (no decimal point) changes to ASCII 2D383731. When displayed by an editor or printed, the string appears as –871.

Since two decimal digits are packed into 1 byte, the length of the resulting workstation field is equal to two times the length of the AS/400 field, plus 1 for the decimal point (if specified). This length always includes the sign. A minus sign (–) indicates negative, and a space indicates positive.

***Transferring Data from ASCII Text Files:*** When you transfer data from ASCII text files to system files, the data changes as follows:

ASCII character data changes to EBCDIC character, date, time, or time-stamp data (based on the AS/400 field type) on a byte-to-byte basis, or to hexadecimal data by changing 2 ASCII bytes into 1 hexadecimal byte.

ASCII numeric data changes to AS/400 binary, zoned decimal, or packed decimal data, depending on the specified data type.

The field lengths on the AS/400 system and the workstation are different because of the explicit way minus signs and decimal points are stored in ASCII numeric fields. Each field changes individually, to ensure that the resulting field length matches the specifications for that field. The data transfer function tries to fit the workstation data into the system field.

For null-capable AS/400 fields, null values (except date, time, and time stamp) cannot be reliably detected and are not uploaded. For variable-length AS/400 fields, trailing blanks are removed and the field is converted to the variable-length format.

***Errors When Transferring Data from ASCII Text Files:*** When you transfer data from a workstation ASCII text file to an AS/400 file, the following errors can occur:

A data field in the ASCII text file is too long for a field in the AS/400-defined file. In this case, the data is truncated. This occurs when the description file defines the character data as longer than the field length specified for the system file.

If the data transfers to an EBCDIC field, this error occurs only if the extra bytes are not spaces.

If the data transfers to a hexadecimal field, this error occurs only if the extra bytes are not zeros. These extra bytes are truncated so the data fits into the specified field.

The value of numeric data is too large for the system field. The maximum value is used. This error occurs when:

- Numeric data in the field does not fit into the specified number of bytes for the field.
- The decimal value of a numeric field contains more digits than were specified for the field.

The value of the field is set to the maximum value possible for the number of bytes and digits specified by the AS/400 system.

Data in this field has too many decimal positions. The number is rounded. This error occurs when the number of decimal positions in the field is greater than the number of decimal positions specified on the AS/400 system. These

extra bytes are significant because the data rounds up if the first extraneous digit is 5 or greater, and rounds down if it is less than 5.

Data in this field is incorrect or does not match the data type. This error occurs when:

- Nonnumeric data is found in a field that the file descriptions defined as numeric. The transfer request ends to prevent transferring incorrect data to the file.
- ASCII numeric data is found that does not match the format the file description specified. An incorrectly positioned decimal point within the field could cause this error.
- A value other than X'30' through X'39', minus, plus, or decimal point is found. A duplicated decimal point or minus is found. The transfer request ends to prevent transferring incorrect data to the file.

Data for this field is missing. The default values are used. This error occurs when a data field is defined, but the data is not in the file. This means that the end of the record is reached before all of the defined data is found.

The field or fields for which data has been defined but not found then fill with default values and transfer to the file. The default values are EBCDIC spaces for character fields, or zeros for numeric and hexadecimal fields.

To supply your own default values, use the default (DFT) keyword in the data description specifications (DDS) for the file.

Extra data is found at the end of this record. The extra data is not transferred. Data found at the end of this record and not defined by the system data definitions or workstation file-description file is not transferred to the system file, because no definitions exist to define the data and how it should change.

When you transfer data from an ASCII text file to an AS/400 file without using a file-description file, any extra data found past the record length specified for the file is not transferred.

## BASIC Random Files

BASIC random files are the most general-purpose BASIC file type. They contain fixed-length records with:

No delimiters between fields or records
No end-of-file marks

***Transferring Data to BASIC Random Files:*** When you create a BASIC random file, system data changes as follows:

Hexadecimal fields do not change.

Change from a system binary field depends on the field length:

- Fields of 2 bytes, with no decimal positions to the right of the decimal point, change to 2-byte BASIC integer values. The only change is that the order of the bytes reverses.
- Fields of 2 bytes, with decimal positions to the right of the decimal point, change to BASIC single-precision numbers.
- Fields of 4 bytes change to BASIC double-precision numbers.

EBCDIC character, date, time, and time-stamp fields change byte by byte and are mapped into ASCII characters as defined by the translation tables.

Variable-length and null fields are converted to fixed lengths, and trailing blanks (for character, hexadecimal, date, time, and time-stamp data) or zeros (for binary, zoned, and packed data) are added to the maximum length of the field.

Zoned decimal fields change into one of the following BASIC variables depending on the field length and the number of decimal positions:

- Zoned decimal fields of 4 bytes or less with no positions to the right of the decimal point change to a BASIC integer of an equivalent value.

  A zoned decimal field of 4 bytes or less, but with a decimal point, falls into the following category.

- Zoned decimal fields up to 7 bytes (including those that did not fall into the previous category) change to a BASIC single-precision number of an equivalent value.

- Zoned decimal fields greater than 7 bytes change to a BASIC double-precision number of an equivalent value.

Packed decimal fields change into one of the following BASIC variables depending on the length of the field:

- Packed decimal fields of 2 bytes or less with no positions to the right of the decimal point change to a BASIC integer of an equivalent value.

  A packed decimal field of 2 bytes or less, but with a decimal point, falls into the following category (up to 4 bytes).

- Packed decimal fields of up to 4 bytes (including those that did not fall into the previous category) change to a BASIC single-precision number of an equivalent value.

- Packed decimal fields greater than 4 bytes change to a BASIC double-precision number of an equivalent value.

**Note:** Changes between binary, packed decimal, and zoned decimal numbers with decimal points are not equivalent to their BASIC number counterparts, because BASIC uses a binary number format that does not always change into exact decimal fractions.

***Transferring Data from BASIC Random Files:*** When you transfer data from BASIC random files to system files, the data changes as follows:

Hexadecimal fields transfer to the system file as unchanged hexadecimal data. The field lengths as stored on the workstation should be the same as the field lengths as stored on the system.

ASCII character, date, time, and time-stamp data changes to EBCDIC character data byte by byte.

For null-capable AS/400 fields, null values (except date, time, and time stamp) cannot be reliably detected and are not uploaded. For variable-length AS/400 fields, trailing blanks are removed and the field is converted to the variable-length format.

Numeric fields from BASIC random files (BASIC integers, single-precision floating-point numbers, and double-precision floating-point numbers) change to system binary data, zoned decimal data in EBCDIC format, or packed decimal data in EBCDIC format.

**Note:** Because the change of floating-point numbers into decimal fractions is not always exact, each number automatically changes into the most precise number possible with respect to the system field length. If you want more precision, specify a larger system field size.

***Errors When Transferring Data from BASIC Random Files:*** When you transfer data from a workstation BASIC random file to a system file, the following errors can occur:

Data in this field is too short for the system field. The data is padded. This error occurs when the file contains character or hexadecimal data shorter than the field length specified on the system. This error can occur if the workstation field is defined as shorter than the system, or if the data in the last record of the file is too short. Character fields are padded on the right with EBCDIC spaces, and hexadecimal fields are padded with zeros.

Data in this field is too long for the system field. The data is truncated. This error occurs when the workstation file-description file defines character or hexadecimal data as longer than the field length specified on the system.

For character data, this error occurs only if the extra bytes are not spaces. For hexadecimal data, this error occurs only if the extra bytes are not zeros. These extra bytes are then truncated so that the data fits into the specified AS/400 field.

The value of numeric data is too large for the system field. The maximum number is used. This error occurs when:

- Numeric data in the workstation field does not fit into the specified number of bytes for the system field.
- The decimal value of a numeric field contains more digits than are specified for the system field.

Data in this field has too many decimal positions. The number is rounded down to zero. In BASIC random processing, this error occurs if the value of the number is too small to fit into the specified field.

For example, the number 0.00001 does not fit into a system zoned field specified as being 2 bytes in length and 2 decimal positions to the right of the decimal point. In this example, the resulting value is zero.

Data for this field is missing. The default values are used. This error occurs when a data field is defined, but the data is not in the file. This means that the end of the file is reached before all of the defined data is found. For BASIC random files, this error occurs only on the last record in the file, since there are no explicit record delimiters.

When this error occurs, the field or fields for which data is defined, but not found, are filled with default values and are transferred to the AS/400 file. These default values are EBCDIC spaces for character fields and zeros for numeric fields.

To supply your own default values, use the Default (DFT) keyword in the DDS for the file.

When you transfer data from a BASIC random file to an AS/400 file, any data shorter than the record length defined for the system file is padded with EBCDIC spaces.

Because there are no record delimiters in BASIC random files, this error can occur only on the last record of the file. This probably indicates that the record length of the system file does not match the record length of the workstation file.

## BASIC Sequential Files

BASIC uses BASIC sequential files for sequential processing (for example, INPUT and WRITE statements). The fields written are considered either character or numeric. Characteristics of BASIC sequential files are as follows:

Both numeric and character fields are written as displayable characters. However, character strings are distinguished from numeric strings by the ASCII double quotation marks (X'22') that surround them.

Therefore, character data in BASIC sequential files cannot contain ASCII double quotation marks, because they are interpreted as the end of the character string.

Fields are delimited by ASCII commas (X'2C'). Therefore, commas are not allowed as date, time, or decimal separators.

Each record is delimited from the next by a carriage return character (X'0D') and a line feed character (X'0A'). The end-of-file character is X'1A'.

Records and fields are variable in length.

***Transferring Data to BASIC Sequential Files:*** The following list describes how AS/400 data created by a BASIC-sequential-file-defined data definition changes:

Hexadecimal fields change to equivalent ASCII characters for each half-byte. Double quotation marks surround them.

For example, X'F3' expands to ASCII 22443322 and is written to the file.

EBCDIC character, date, time, and time-stamp fields change byte by byte and are mapped into ASCII characters as defined by the translation tables. ASCII double quotation marks are added before and after the character string.

Null fields are represented by the absence of the field (comma comma, or by a single comma if the null field is the last field of the record).

For null fields, successive commas in the file will result in a null value being sent to the AS/400 system if the field is null-capable.

In variable-length fields, if the AS/400 field is variable length, the field is converted to the AS/400 variable-length format.

Binary fields change to ASCII numeric. Leading zeros to the left of the decimal point and trailing zeros to the right of the decimal point are removed.

For example, X'FFD3' appears as ASCII 2D3435. When displayed on an ASCII device, the string appears as –45.

Zoned decimal fields change to ASCII numeric. Leading zeros to the left of the decimal point and trailing zeros to the right of the decimal point are removed.

For example, EBCDIC F0F0F9F5F2D6 with a field length that indicates two digits to the right of the decimal point expands to ASCII 2D39352E3236. The string appears as –95.26 when an editor displays it or it prints.

Packed decimal fields change to ASCII numeric. Leading zeros to the left of the decimal point and trailing zeros to the right of the decimal point are removed.

For example, X'871F' (no decimal point) changes to ASCII 383731. The string appears as 871 when an editor displays it or it prints.

***Transferring Data from BASIC Sequential Files:*** When you transfer data from BASIC sequential files to AS/400 files, the data changes as follows:

ASCII character, date, time, and time-stamp data changes to EBCDIC character data on a byte by byte basis and to hexadecimal by changing 2 ASCII bytes into 1 hexadecimal byte.

ASCII numeric data translates to system binary, zoned decimal, or packed decimal data, depending on the specified data type. The lengths of the system data and the workstation data might be different because the minus signs and decimal points are stored in ASCII numeric fields, and leading and trailing spaces are stripped away.

BASIC might create exponential numbers in these files. The data transfer function also changes these numbers.

Each translated field is individually verified to ensure that the resulting field length matches the specifications for that field. The data transfer function tries to fit the workstation data into the system field.

***Errors When Transferring Data from BASIC Sequential Files:*** When you transfer data from a BASIC sequential file to a AS/400-defined file, the following errors can occur:

Data in this field is too long for the AS/400 field. The data is truncated. The file-description file defines character data as longer than the field length specified for the file.

If the data transfers to an EBCDIC field, this error occurs only if the extra bytes are not spaces. If the data transfers to a hexadecimal field, this error occurs only if the extra bytes are not zeros. These extra bytes are truncated so that the data fits into the specified AS/400 field.

The value of numeric data is too large for the system field. The maximum value is used. This error occurs when:

- Numeric data in the workstation field does not fit into the specified number of bytes for the system field.
- The decimal value of a numeric field contains more digits than were specified for the system field.

The value of the field is set to the maximum value possible for the number of bytes and digits specified by the AS/400 system.

Data in this field has too many decimal positions. The number is rounded. This error occurs when the number of decimal positions in the workstation field is greater than the number of decimal positions specified on the system. The extra bytes are significant, because the data is rounded up if the first extraneous digit is 5 or greater, and is rounded down if it is less than 5.

Data in this field is incorrect or does not match the workstation data type. This error occurs when a field defined as numeric by the file description contains nonnumeric data. This could also result if a character or hexadecimal field contains a numeric field, or if a numeric (zoned, packed, or binary) field contains a character field.

When this error occurs, the transfer request ends to prevent transferring incorrect data to the system file.

Data for this field is missing. The default values are used. This error occurs when a data field is defined, but the data is not in the file. This means that the end of the record is reached before all of the defined data is found.

When this error occurs, the field or fields for which data has been defined, but not found, are filled with default values and transferred to the AS/400 file. These default values are EBCDIC spaces for character fields, or zeros for numeric fields.

To supply your own default values, use the default (DFT) keyword in the DDS for the file.

Data in this field exceeds the workstation field size. The data is lost. This error occurs when extra data, not defined by the file-description file, is found at the end of a character field. The extra bytes are truncated and are not transferred to the system file.

Extra data found at the end of the record. The extra data is not transferred. This error occurs when extra data is found at the end of the record, and has not been defined by the system data definitions or workstation file-description file. This extra data is not transferred to the system, because no definitions exist to define the data and describe how it should change.

## Data Interchange Format Files

Data Interchange Format (DIF) files represent data in rows and columns. DIF files contain character and numeric data (positive and negative decimal numbers).

DIF is used for data interchange between spreadsheet programs and other application programs.

The data transfer function supports only the following two data types within DIF files:

**Character data:** The data in a character cell (think of a *cell* as one field in one record) must be enclosed in double quotation marks if there is an embedded space in the string. However, if the string begins with a quotation mark, it must also end with a quotation mark.

**Numeric data:** The numeric data supported by the data transfer function consists of a decimal number that can contain a minus sign or a decimal point or both. The data transfer function also supports exponential numeric data.

***Transferring Data to DIF Files:*** When creating a DIF file, system data changes as follows:

Hexadecimal fields change to equivalent ASCII characters for each half-byte. Double quotation marks surround them.

EBCDIC character, date, time, and time-stamp data changes byte by byte and is mapped into ASCII characters as defined by the translation tables. ASCII double quotation marks are added before and after the character string.

Binary fields change to ASCII numeric. Leading zeros to the left of the decimal point, and trailing zeros to the right of the decimal point, are removed.

Zoned decimal fields change to ASCII numeric. Leading zeros to the left of the decimal point, and trailing zeros to the right of the decimal point, are removed.

For example, EBCDIC F0F0F9F5F2D6 with a field length that indicates two digits to the right of the decimal point expands to ASCII 2D39352E3236. When displayed or printed, the string appears as –95.26.

Packed decimal fields change to ASCII numeric. Leading zeros to the left of the decimal point, and trailing zeros to the right of the decimal point, are removed.

For example, X'871D' (no decimal point) changes to ASCII 2D383731. When displayed or printed, the string appears as –871.

If untranslatable data is found, the entire field becomes an error cell. An **error cell** results when untranslatable data is found when a DIF file is created or when a not valid calculation is done using the DIF file with a spreadsheet program.

***Transferring Data from DIF Files:*** If an error cell is found when data is transferred from a DIF file to the AS/400 system, one of the following things can occur, depending on the type of data in the file:

If the system field is a character (EBCDIC) field, it is filled with untranslatable characters (hexadecimal zeros) and is transferred to the system. A message appears, telling you how many bytes of untranslatable data have transferred.

If the system field is a hexadecimal, zoned, packed, or binary field, you receive an error message telling you that the data in this cell is incorrect, and that the data was not transferred to the system.

When you transfer data from a system file to a DIF file, the field names are placed in the first record and you can consider them column headings. When you transfer DIF files back to the system, the first row must either be these field names (exactly as they are defined on the system) or data. If the first row does not consist of field names, the file is processed as if it contains only data.

No DIF header information is used when sending the file to the AS/400 system. To correctly transfer a DIF file to the system, ensure that the file is in the correct format (row and column). It is essential that the field names, if present, make up the first row of data. The subsequent records make up the remaining rows of data. Therefore, when you transfer the data to the AS/400 system, the file must be saved in the same format as originally created by the data transfer function.

When you transfer data from DIF files to AS/400 files, the data changes as follows:

ASCII character, date, time, and time-stamp data is changed to EBCDIC character data or to hexadecimal data. ASCII-to-EBCDIC conversion is done byte by byte. ASCII-to-hexadecimal conversion is done by changing 2 ASCII bytes to 1 hexadecimal byte.

ASCII numeric data changes to system binary, zoned decimal, or packed decimal data, depending on the data type the system specifies.

The lengths of the fields on the system and the workstation can be different, because of the explicit way minus signs and decimal points are stored in ASCII numeric fields. This means that each field changes individually, to ensure that the resulting field length matches the system specifications for that field. The data transfer function tries to fit the workstation data into the system field.

In null fields, a NULL DIF character field results in a null value being sent to the AS/400 field if the field is null-capable.

If the AS/400 field is variable-length, the field is converted to the AS/400 variable-length format.

***Errors When Transferring Data from DIF Files:*** When you transfer data from a workstation DIF file to a system file with data definitions, the following errors can occur:

Data in this workstation file is not valid, or the version of this workstation file is not supported. The DIF file does not follow the standard DIF format. Processing ends, and no more records are transferred.

Data in this field is too long for the AS/400 field. The data is truncated. The workstation file-description file defines character or numeric data as longer than the field length specified for the system file.

For character data, this error occurs only if the extra bytes are not spaces. For hexadecimal data, this error occurs only if the extra bytes are not zeros. The extra bytes are truncated so that the data fits into the specified AS/400 field.

The value of numeric data is too large for the system field. The maximum value is used. This error occurs when:

- Numeric data in the workstation field does not fit into the specified number of bytes for the AS/400 field.
- The decimal value of a numeric field contains more digits than are specified for the system field.

The value of the field is set to the maximum value possible for the number of bytes and digits the system specifies.

Data in this field has too many decimal positions. The number is rounded. The number of decimal positions in the workstation field is greater than the number of decimal positions specified on the system. The data is rounded up if the first extraneous digit is 5 or greater, and is rounded down if it is less than 5.

Data in this field is incorrect or does not match the workstation data type. One of the following things has occurred:

- A numeric field contains nonnumeric data.
- A character or hexadecimal field contains a numeric field or a numeric (zoned, packed, or binary) field contains a character field.
- An AS/400 hexadecimal or numeric (zoned, packed, or binary) field contains a DIF error cell.

When this error occurs, the transfer request ends to prevent the transfer of incorrect data to the system file.

Data for this field is missing. This occurs when a data field is defined, but the data is not in the file. This means that the end of the record is reached before all of the defined data is found. If the host field is null-capable then a null is inserted; otherwise, the default values are used.

When this error occurs, the field or fields for which data is defined, but not found, are filled with default values and are transferred to the system file. These default values are EBCDIC spaces for character fields, or zeros for numeric fields.

To supply your own default values, use the Default (DFT) keyword in the DDS for the file.

Data in this field exceeds the field size. The data is lost. This error occurs when extra data, not defined by the file-description file, is found at the end of a character field. The extra bytes are truncated and are not transferred to the system file.

Extra data is found at the end of this record. The extra data is not transferred. This error occurs when there is extra data at the end of the record, and the AS/400 data definitions or file-description file have not defined it. This extra data is not transferred to the system, because no definitions exist to define the data and how it should change.

## BIFF Files

In a BIFF file, data is expressed in lines and columns. A BIFF file contains character and numeric data (positive and negative decimal values).

The BIFF file format is used in EXCEL. The supported BIFF version is 4 (EXCEL 4.0).

The transfer facility supports only the following two data types for a BIFF file:

Character data
Numeric data

***Transferring Data to BIFF Files:*** When a BIFF file is created, the system data is converted to equivalent EXCEL cell data.

If untranslatable data is found, the entire field is treated as an error cell.

***Transferring Data from BIFF Files:*** If an error cell is found during data transfer from a BIFF file to the AS/400 system, either of the following things can occur depending on the data type of the file:

If the system field is a character (EBCDIC) field, the error cell containing untranslatable characters (hexadecimal zeros) is transferred to the system. A message indicating how many bytes of untranslatable data were transferred is displayed.

If the system field is a hexadecimal, zoned decimal, packed decimal, or binary field, an error message indicating that the data in this cell is not valid and thus has not been transferred to the system is displayed.

When data is transferred from a system file to a BIFF file, the first record contains field names, which can be treated as column headers.

To return a BIFF file to the system, the first line must contain these field names (as defined in the system) or data. If the first line does not contain field names, the file is regarded as containing data only.

When a file is sent to the AS/400 system, cell information (such as the character size and font information) is ignored. This means that cell information is lost, even if the contents of a BIFF file that have been sent to the AS/400 system are retransmitted to a workstation.

When data is transferred from a BIFF file to an AS/400 file, the data is converted as follows:

ASCII character cell data is converted to EBCDIC character data or hexadecimal data; 1-byte ASCII data is converted to 1-byte EBCDIC data.

ASCII numeric cell data is converted to a binary number, or a zoned or packed decimal number, depending on the data type specified in the system.

When data is transferred from a BIFF file to the AS/400 system, the following specific processing is performed:

When data is transferred to a BIFF file, the first record contains the names of the fields to be transferred, which can be treated as column headers. To return a BIFF file to the AS/400 system, the first line must contain the same field names (as defined in the AS/400 system) or data. If the first line or the first set does not contain a character field that exactly matches the AS/400 field, the file is treated as being a file with no column headers, and only data is processed.

When a BIFF file is transferred to the AS/400 system, header information is not used.

To ensure correct transfer of a BIFF file to the AS/400 system, the file format must be valid (lines and columns). Data for each set or line must correspond to one record in the AS/400 file.

***Errors When Transferring Data from BIFF Files:*** When data is transferred from a BIFF file on a workstation to the system file with the data definition, the following errors can occur:

Data in this workstation file is not valid, or the version of this workstation file is not supported. The BIFF file does not conform to the standard BIFF format. Processing terminates, and no more records are transferred.

Data in this field is too long for the corresponding AS/400 field. The data is truncated. A file-description file defines character or numeric data that is longer than the field specified in the system file.

- For conversion from ASCII to EBCDIC, this error occurs if a file-description file defines ASCII data that is longer than the field specified in AS/400 system.

  During conversion from ASCII to hexadecimal, this error will occur if a file-description file defines ASCII data that is twice as long as the field specified in AS/400 system. This is because 2-byte ASCII data is converted to one hexadecimal character.

- A truncation error only occurs if excess bytes are other than blanks (X'20') during conversion from ASCII to EBCDIC, or other than zeros (X'30') during conversion from ASCII to hexadecimal. Truncating these excess bytes enables data to fit into the specified AS/400 fields.

Numeric data is too long to fit into the corresponding AS/400 field. The maximum value is assumed. This error occurs under either of the following conditions:

- Numeric data in a workstation field is too long to fit into the number of bytes specified for the AS/400 field.
- The number of decimal digits in a numeric field exceeds the number of digits specified for the AS/400 field.

The field value is set to the maximum value that can be specified for the number of bytes, and that for the number of digits, specified for the AS/400 system.

Data in this field contains too many decimal places. The data is rounded off. The number of decimal places in a workstation field is greater than the number of decimal places specified for the system. If the first excess digit is 5 or more, the data is rounded up. Otherwise, it is rounded down.

Data in this field is not correct, or its type does not match the type of workstation data. One of the following things has occurred:

- A numeric field contains other than numeric data.
- A character field or a hexadecimal field contains a number, or a numeric (zoned or packed decimal, or binary) field contains characters.
- A hexadecimal field or a numeric (zoned or packed decimal, or binary) field for the AS/400 contains a BIFF error cell.

If this error occurs, the transfer request terminates to avoid transferring incorrect data to the system file.

Data for this field is missing. This error occurs if the data field is defined, but the file does not contain any data. This means that the end of the record is reached before all defined data has been found.

If this error occurs (that is, if data is defined for one or more fields, but it is not found there) the fields containing the default value are transferred to the system file. The default value is EBCDIC spaces for a character field and zeros for a numeric field.

To specify a user-specific default value, use the default value (DFT) keyword in DDS for the file.

Data in this field exceeds the size of a workstation field. Data is lost. This error occurs if excess data, not defined in the workstation file-description file, is found at the end of the field. For character data, excess bytes are truncated, and not transferred to the system file. For numeric data, the entire field is converted to zeros and transferred to the system file.

Excess data is found at the end of this record. The excess data is not transferred. This error occurs if such excess data is not defined in the AS/400 data definition or in the workstation file-description file. This excess data is not transferred to the system, because the data and the conversion method are not defined.

## DOS Random Files

DOS random files are fixed-length files used by the DOS random read and write routines. The characteristics of DOS random files are as follows:

There are no end-of-record or end-of-file markers.

Records are delimited by their constant length, relative positions in the file, and the total length of the file.

**Note:** DOS random and DOS random type-2 files are identical, except for the way in which the signs are represented for packed decimal and zoned decimal numbers.

***Transferring Data to DOS Random Files:*** When creating DOS random file data definitions, system data changes as follows:

Binary fields on the AS/400 system and the workstation are represented as two-complement numbers, so it is unnecessary to change individual bytes. The workstation uses the convention of storing numeric values with the least significant byte in the left-hand byte position. The data transfer function then reverses the order of the bytes in the binary fields.

For example, X'CEF3', coming from the system as a 2-byte binary number (representing the value –12557), appears as X'F3CE'.

EBCDIC character, date, time, and time-stamp data changes byte by byte and is mapped into ASCII characters as defined by the translation tables.

Variable-length and null fields are converted to fixed length, and trailing blanks (for character, hex, date, time, and time stamp) or zeros (for binary, zoned, and packed) are added to the maximum length of the field.

Hexadecimal fields do not change.

Packed decimal fields do not change except for the last half-byte, which contains the sign. The workstation uses X'3' to indicate a positive number and X'B' to indicate a negative number in the sign half-byte.

For example, X'0865431F' appears as X'08654313'.

Zoned decimal fields from the system change from EBCDIC to ASCII, as do character fields, except that the sign half-byte in the workstation changed field is X'3' to indicate a positive number and X'B' to indicate a negative number.

For example, EBCDIC X'F0F1F2F5F2D6' appears as ASCII X'3031323532B6'.

***Transferring Data from DOS Random Files:*** When you transfer data from DOS random files to AS/400 files, the data changes as follows:

ASCII character, date, time, and time-stamp data changes to EBCDIC character data on a byte by byte basis.

Binary fields in the workstation file are stored in an order reversed from what the system file expects. These bytes reverse and transfer to the system file.

Hexadecimal fields do not change. The field length on the system should be the same as the field length on the workstation.

For packed decimal fields, only the last half-byte (the byte that contains the sign) is changed. The host system uses X'F' to indicate a positive number and X'D' to indicate a negative number for the sign half-byte.

For example, X'08654313' appears as X'0865431F'.

Zoned decimal fields on the workstation change from ASCII to EBCDIC (ASCII to EBCDIC for DBCS), as do character fields. The last half-byte (the half-byte that contains the sign) in the workstation field is changed to X'F' to indicate a positive number and X'D' to indicate a negative number.

For example, ASCII X'3031323532B6' appears as EBCDIC X'F0F1F2F5F2D6'.

For null-capable AS/400 fields, null values (except date, time, and time stamp) cannot be reliably detected and are not uploaded. For variable-length AS/400

fields, trailing blanks are removed, and the field is converted to the variable-length format.

***Errors When Transferring Data from DOS Random Files:*** When you transfer data from a DOS random file to an AS/400 file, the following errors can occur:

Data in this field is too short for the system field. The data is padded. This error occurs when the workstation file contains character or hexadecimal data shorter than the specified field length. It also occurs if the length of the workstation field is defined as less than the system field, or if the data in the last record of the file is too short. Character fields are padded on the right with EBCDIC spaces. Hexadecimal fields are padded on the right with zeros.

Data in this field is too long for the system field. The data is truncated. This error occurs when the workstation file-description file defines character or hexadecimal data as longer than the field length specified for the system file.

For character data, this error occurs only if the extra bytes are not spaces. For hexadecimal data, this error occurs only if the extra bytes are not zeros. These extra bytes are truncated so that the data fits into the specified field.

The value of numeric data is too large for the system field. The maximum value is used. This error occurs when:

- Numeric data in the workstation field does not fit into the specified number of bytes for the AS/400 field.
- The decimal value of a numeric field contains more digits than were specified for the AS/400 field.

The value of the field is set to the maximum value possible for the number of bytes and digits specified by the system.

Data in this field has too many decimal positions. The number is rounded. This occurs when the number of decimal positions in the workstation field is greater than the number of decimal positions specified on the system. The extra bytes are significant, because the data rounds up if the first extraneous digit is 5 or greater, and rounds down if it is less than 5.

Data in this field is incorrect or does not match the workstation data type. This error occurs when nonnumeric data appears in a field defined as numeric by the file descriptions. When this occurs, the transfer request ends to prevent transferring incorrect data to the system file.

Data for this field is missing. The default values are used. This error occurs when a data field is defined, but the data is not in the file. This means that the end of the file is reached before all the defined data is found.

When this error occurs, the field or fields for which data has been defined, but not found, fill with default values and transfer to the system file. Default values are EBCDIC spaces for character fields, or zeros for numeric fields.

To supply your own default values, use the default (DFT) keyword in the DDS for the file.

When you transfer data from a DOS random file to a system file without data definitions, any data shorter than the record length defined for the system file is padded with EBCDIC spaces.

Because DOS random files have no record delimiters, this error occurs only on the last record and probably indicates that the record length of the system file does not match that of the workstation file.

## DOS Random Type-2 Files

DOS random type-2 files are fixed-length files used by the DOS random read and write routines. The characteristics of DOS random type-2 files are as follows:

There are no end-of-record or end-of-file markers.

Records are delimited by their constant length, relative positions in the file, and the total length of the file.

**Note:** This workstation file type is identical to the DOS random file type, except that the internal sign representation for packed decimal and zoned decimal data types follow Systems Application Architecture (SAA) standards. Some workstation applications, such as applications written in IBM COBOL/2 programming language, need to have the signs for packed decimal and zoned decimal data types represented this way. Use the DOS random type-2 file type for those workstation applications.

***Transferring Data to DOS Random Type-2 Files:*** When you create DOS random type-2 file data definitions, system data changes as follows:

Binary fields on the AS/400 system and the workstation are represented as twos complement numbers, so it is unnecessary to change individual bytes. The workstation uses the convention of storing numeric values with the least significant byte in the left-hand byte position. The data transfer function then reverses the order of the bytes in binary fields.

For example, X'CEF3', coming from the system as a 2-byte binary number (representing the value –12557), appears as X'F3CE'.

EBCDIC character, date, time, and time-stamp fields change byte by byte and are mapped into ASCII characters as defined by the translation tables.

Variable-length and null fields are converted to fixed length, and trailing blanks (for character, hex, date, time, and time stamp) or zeros (for binary, zoned, and packed) are added to the maximum length of the field.

Hexadecimal fields do not change.

Packed decimal fields do not change. The sign convention used on the workstation and on the host system is the same.

For example, X'0865431C' appears as X'0865431C'.

Zoned decimal fields from the system change from EBCDIC to ASCII, as do character fields. However, the sign half-byte is changed to a 3 to indicate a positive number or a 7 to indicate a negative number when the data is sent to the workstation.

For example, EBCDIC X'F0F1F2F5F2D6' appears as ASCII X'303132353276'.

***Transferring Data from DOS Random Type-2 Files:*** When you transfer data from DOS random type-2 files to AS/400 files, the data changes as follows:

ASCII character data, date, time, and time stamp data change to EBCDIC character data on a byte by byte basis.

Binary fields in the workstation file are stored in an order reversed from what the system file expects. These bytes reverse and transfer to the system file.

Hexadecimal fields do not change. The field length on the system should be the same as the field length on the workstation.

For packed decimal fields, the last half-byte (the half-byte that contains the sign) is not changed unless the sign half-byte is less than X'A' (represented by values 0 through 9). If the sign half-byte is less than X'A', it is changed to X'F' on the host system.

For example, X'865431D' appears as X'0865431D', but X'08654318' appears as X'0865431F'.

Zoned decimal fields on the workstation change from ASCII to EBCDIC, as do character fields. However, the sign half-byte is changed to an F to indicate a positive number or a D to indicate a negative number when the data is sent to the host system.

For example, ASCII X'303132353276' appears as EBCDIC X'F0F1F2F5F2D6'.

For null-capable AS/400 fields, null values (except date, time, and time stamp) cannot be reliably detected and are not uploaded. For variable-length AS/400 fields, trailing blanks are removed and the field is converted to the variable-length format.

***Errors When Transferring Data from DOS Random Type-2 Files:*** When you transfer data from a DOS random type-2 file to an AS/400 file, the following errors can occur:

Data in this field is too short for the system field. The data is padded. This error occurs when the workstation file contains character or hexadecimal data shorter than the specified field length. It also occurs if the length of the workstation field is defined as less than the system field, or if the data in the last record of the file is too short. Character fields are padded on the right with EBCDIC spaces. Hexadecimal fields are padded on the right with zeros.

Data in this field is too long for the system field. The data is truncated. This error occurs when the workstation file-description file defines character or hexadecimal data as longer than the field length specified for the system file.

For character data, this error occurs only if the extra bytes are not spaces. For hexadecimal data, this error occurs only if the extra bytes are not zeros. These extra bytes are truncated so that the data fits into the specified field.

The value of numeric data is too large for the system field. The maximum value is used. This error occurs when:

- Numeric data in the workstation field does not fit into the specified number of bytes for the AS/400 field.
- The decimal value of a numeric field contains more digits than were specified for the AS/400 field.

The value of the field is set to the maximum value possible for the number of bytes and digits specified by the system.

Data in this field has too many decimal positions. The number is rounded. This occurs when the number of decimal positions in the workstation field is greater than the number of decimal positions specified on the system. The

extra bytes are significant, since the data rounds up if the first extraneous digit is 5 or greater, and rounds down if it is less than 5.

Data in this field is incorrect or does not match the workstation data type. This error occurs when nonnumeric data appears in a field defined as numeric by the file descriptions. When this occurs, the transfer request ends to prevent transferring incorrect data to the system file.

Data for this field is missing. The default values are used. This error occurs when a data field is defined, but the data is not in the file. This means that the end of the file is reached before all the defined data is found.

When this error occurs, the field or fields for which data has been defined, but not found, fill with default values and transfer to the system file. Default values are EBCDIC spaces for character fields, or zeros for numeric fields.

To supply your own default values, use the default (DFT) keyword in the DDS for the file.

When you transfer data from a DOS random type-2 file to a system file without data definitions, any data shorter than the record length defined for the system file is padded with EBCDIC spaces.

Because DOS random type-2 files have no record delimiters, this error occurs only on the last record and probably indicates that the record length of the system file does not match that of the workstation file.

## No-Conversion Files

No-conversion files, defined by the data transfer function, consist of data that has not changed. For example, when data transfers from the system to a workstation no-conversion file, the data transfers exactly as it is stored on the AS/400 system. Date, time, and time-stamp data transfers to EBCDIC character data on the workstation.

***Transferring Data to No-Conversion Files:*** When you transfer data from the AS/400 system to a no-conversion file, the data transfers exactly as it is stored on the system.

Variable-length AS/400 fields are converted to fixed-length fields, and trailing EBCDIC blanks are added to the maximum length of the field.

Date, time, and time-stamp data is converted to EBCDIC character data.

Variable-length and null fields are converted to fixed length, and trailing EBCDIC blanks (for character, hex, date, time, and time stamp) or EBCDIC zeros (for binary, zoned, and packed) are added to the maximum length of the field.

***Transferring Data from No-Conversion Files:*** The data types that exist in a no-conversion file are EBCDIC system data types only. When a no-conversion file transfers to the system, the data transfer function performs no data change or translation. Date, time, and time-stamp data transfers to EBCDIC character data on the workstation.

However, the data transfer function verifies that all numeric data is in the correct EBCDIC format. If any numeric data is found that is not in the correct EBCDIC format, that data and any remaining data does not transfer.

***Errors When Transferring Data from No-Conversion Files:*** When you transfer data from a workstation no-conversion file to a system file, the following errors can occur:

Data sizes are not equal. When you transfer no-conversion files, the length and decimal position specifications for the system and the workstation must match exactly. If not, no records transfer.

Data in this field is too short for system field. The data is padded. This error occurs when the workstation file contains character or hexadecimal data shorter than the field length specified for the system file. This could occur if the data in the last record of the file is too short. Character fields are padded on the right with EBCDIC spaces. Hexadecimal fields are padded with zeros.

Data in this field is incorrect or does not match the workstation data type. The transfer request ends to prevent transferring incorrect data to the system file. This error occurs when a field defined by the file descriptions as numeric contains nonnumeric data.

**Note:** The data is verified assuming that the data is in EBCDIC format. If you want to transfer data in another format, do not use data definitions or file descriptions, and specify the record lengths defined on the system and the workstation in the same way.

Data for this field is missing. The default values are used. This error occurs when a data field has been defined, but the data is not in the file. This error can occur only in the last record of the file, since no-conversion files have no explicit record delimiters.

When this error occurs, the field or fields for which data has been defined but not found fill with default values and transfer to the system file. These default values are EBCDIC spaces for character fields, or zeros for numeric fields.

To supply your own default values, use the default (DFT) keyword in the DDS for the file.

## AS/400 System-to-Personal Computer Performance Considerations

Transferring data from the AS/400 system to the workstation depends on the following performance considerations:

The system workload.

How many records have to be looked at to complete the transfer.

If more than two files are joined. You need extra AS/400 resources to join records from more than one file.

If GROUP BY fields are specified.

If complicated WHERE or HAVING comparisons are specified.

These factors and others influence the time needed to determine which data should be transferred. For example, the time needed to receive the first record of a transfer in which all the records are chosen is less than the time needed to start transferring a smaller group of records based on complicated WHERE or HAVING values. However, transferring all the records in a large file is sometimes impractical or unnecessary.

The AS/400-to-workstation data transfer function uses many functions within the AS/400 system to determine the fastest method of selectively retrieving records. When it selects a smaller group of records to transfer, the AS/400-to-workstation data transfer function uses the existing access paths whenever possible to improve performance.

For the AS/400-to-workstation data transfer function to consider using an existing access path (logical file), the access path must meet the following conditions:

It must be defined to the data that transfers.
It must have either *DELAY or *IMMED maintenance.

When you meet these conditions, you must then match the transfer request to the access path. The following considerations might be helpful when you define your transfer request:

The time it takes to select records based on WHERE clause values is less when the following things are true of the WHERE field:

- It is compared with a constant.
- It is the first key field in an existing access path defined to the data to be transferred.

A transfer request containing a GROUP BY or ORDER BY clause or both can work better if the key fields in the access path are in the same order as specified on the GROUP BY or ORDER BY clauses.

A transfer request containing a JOIN BY clause can work better when:

- An access path exists over the file that you are joining to.
- The field you are joining to is a primary key field in the access path.
- You are not returning records with missing fields.

## PC400 Data Transfer

# Chapter 16. File Transfer for PC400

File transfer is designed so that you can use it in the following cases:

To store a workstation file on the AS/400 system for a backup

To edit a source file of an AS/400 program by a workstation editor, and send the file edited on the workstation to the AS/400 system.

To distribute workstation documents and workstation programs to the AS/400 users

You can easily transfer a file if you know the library name and file name.

File transfer is not suitable for complicated processing, such as the processing of an AS/400 database on a workstation and then returning the results to the AS/400. In that case, use the Data Transfer Function.

Before attempting to use file transfer, review this chapter.

**Note:** You need to have a program, such as Personal Communications Tool/400, that supports the **APVAFILE** command installed on the host. If you do not, install one or ask your IBM representative how to obtain one.

## PC File Transfer with the CRLF Option

If the CRLF option is specified, the transfer program checks for new-line characters. When the record length is reached before a new-line character is found, the record is divided at this point. One sentence of a workstation file will become two or more records. Particularly, specify a sufficiently long record length when retransmitting a workstation file containing 2-byte characters.

By default, the message records segmented. is not displayed. To display the message:

Search the file containing the program information for the session in which the file is transferred. Normally, the file is created in the **\PCOMOS2\PRIVATE** directory under the name *filename***.WS** (*filename* is a user-specified file name).

Use an editor to insert the following sentence into the [Transfer] section. If there is no [Transfer] section, first enter [Transfer]. (Be careful to enter it correctly.)

```
DisplayTruncateMessage=Y
```

or

```
[Transfer]
DisplayTruncateMessage=Y
```

The next time the system is started, this specification becomes valid.

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## Transfer to a Physical Source File

An AS/400 physical source file contains 12-byte information for each record as internal information: 6 bytes are for a record number, and the other 6 bytes are for a date. When you transfer a file from a workstation using file transfer, the date field contains 000000. If the APPEND option is not specified, the record number is incremented by 1, up to a maximum of 9999. Otherwise, it is incremented from the nearest integer, greater than the number of the last record in the original file (for example, 24 for 23.1). If the number of records exceeds 9999, the next and all subsequent record numbers are 9999.

Use the source specifications input utility (SIU) to renumber records when saving the file after editing.

## Transfer to a Physical File

A file, such as a workstation program, that does not require the processing of the contents of an AS/400 file or the reading of data, should be transferred to a physical file with the BINARY transfer type. (Because data is not converted, if the data is subsequently retransmitted from the AS/400 system to a workstation, the original workstation file can be re-created exactly. If the data is converted, however, data might not be restored to its original form, depending on the contents of the conversion table.)

For the maximum number of members (MAXMBRS), a physical file attribute, the default value is 1. When a physical file is created during file transfer, MAXMBRS is 1.

When a file is transferred from a workstation to a physical file, the default file name **xxxBIN** is assumed. (**xxx** is a workstation file extension.) At this point, if MAXMBRS of the **xxxBIN** file is 1, an error occurs when the second and subsequent files are transferred. (The TRANS58 file or member cannot be created. File transfer terminates.) ***A file should be created with the expected file attribute before the file is transferred from a workstation to the AS/400 system.***

## Use of the DSPMBRLST Command

For file transfer from the AS/400 system to a workstation, the Paste function can be used. If the Library/File(Member) to be transferred is copied with the Copy function of the Edit menu, it can be displayed as the host file candidate to be transferred on the transfer request screen by clicking the **Paste** button. This is particularly convenient when transferring more than one file at a time.

Use the DSPMBRLST command to list AS/400 files or members for Paste. The command format is as follows:

DSPMBRLST LIB(lib-name) FILE(file-name)

**LIB parameter**

The LIB parameter contains the target library name. The default value is ***USRLIBL**. Extensive specification, such as ***ALL**, ***** for generic name, is possible, but is time consuming. AS/400 files or members are listed more efficiently if a specific name is specified.

**FILE parameter**

The FILE parameter contains the target file name. There is no default value. The parameter must be specified. ***ALL** and * for generic name can be specified.

Executing this command lists Library/File(Member) on the screen. If they cannot be listed on one screen, **MORE...** is displayed in the lower right corner of the screen. Use the preceding page or next page key to scroll the screen. Create data for Paste with the Copy or the CopyAppend function of the Edit menu, as required.

## Restrictions for Transferred File Size

A file that is more than 1,040,000 bytes cannot be transferred correctly.

## PC400 File Transfer

# Chapter 17. Considerations for PC400 Installation and Use

This chapter provides technical information, considerations, and restrictions for installing and using PC400.

First-time users of PC400 or users who want only to perform simple operations using the supplied default values need not read this chapter.

Refer to this chapter if a problem occurs during operation, or when you want to obtain more detailed information about the system, or when you want to learn of the restrictions imposed on its use.

**Note:** Before proceeding with this chapter, double-click on the **Readme** icon or type **VIEW README** in the OS/2 command prompt to view the **README.INF** file, which is included on the PC400 installation diskette.

## General PC400 Workstation Window Operations

### ■ Scroll-Bar

When you select **Font Size** from the Appearance pull-down menu, then select **Fixed Size** from the Select Display Font dialog box, the entire operator information area might not fit onto the screen if you have specified **With Scroll-Bar** in the Window Setup dialog box.

## API Considerations

### ■ DOS Mode EHLLAPI

This function allows you to call PC400 (for OS/2) EHLLAPI from an EHLLAPI user application created for PC400 (for DOS) on OS/2 DOS Box or created for PC400 (for Windows) on WIN-OS2. To use this function, specify the DOS mode EHLLAPI available in **API setting**. Then EHLLAPI virtual device driver (VDD) will be added to **CONFIG.SYS**.

To use this function on WIN-OS2, copy the file **PCSHLL.DLL** in the directory, in which OS/2 and PC400 are installed, to the place that the environment valuable **PATH=** of WIN-OS2 specified (in **AUTOEXEC.BAT**).

**Note:** **PCSHLL.DLL** is a Windows dynamic link library (DLL), which is a interface module between your EHLLAPI application for PC400 and the EHLLAPI VDD.

To use **SEND FILE (90)** or **RECEIVE FILE (91)**, you have to specify the workstation file name with drive and path name.

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# Print Processing

### ■ Font Pitch

When there is no font-specified pitch, vector font is selected in GPI mode. On the other hand, the maximum font size of all fonts under the pitch is selected in PDT mode. The pitch is set to that of the font selected.

### ■ CPI/LPI of Device Fonts

If the printer driver cannot print device fonts associated with the user-specified CPI/LPI, the print output might be generated with incorrect CPI/LPI values.

### ■ Spool Function

The spooler must be on.

### ■ Printable Area

Depending on the printer driver used, it might not be possible to use the entire surface of the paper for printing.

If the printing position is over the printable area, the page is automatically changed. When using a printer driver that allows you to set the margins, specify the minimum margins, thus maximizing the printable area.

### ■ Unprintable Characters

Unprintable characters put the printer into deselect state.

### ■ Printing Using PDT Mode

Printing using the PDT file is restricted as follows:

Only the fonts specific to the printer being used are supported.

PostScript** printers are not supported.

The following two conditions are required to print column separators in PDT mode:

1. The printer being used must support vertical 24 dots.
2. **IMAGE_TRANSMISSION** must be defined in the ***.PDF** file, and the format must be Escape + Length + Data or Escape + Data.

ASCII 850 must be used as default setting for the PC code page in PDT mode. If you want to use another PC code page, change the PDT file.

### ■ Printing Using the OS/2 Printer Drivers

Paper orientation depends on the settings in the Printer Setup dialog box for **Print Screen**.

If you rotate the paper without selecting the PDT, the raster font cannot be selected. The outline font is the default.

Duplex printing is available only if the PDT and the workstation printer support duplex printing.

Setting up the configuration is required to change drawers.

The SCS control codes might not always work correctly depending on the printer drivers and fonts being used.

ASCII 850 is used for the PC code page in GPI mode. Therefore, the font whose code page is ASCII 437 is not selected though you select it from the font list on the printer control panel when the system code page is ASCII 437.

### ■ Setting the Code Page

The host code page, which is set in the Configuration dialog box, is used by default. The **Set Initial Condition (SIC)** command is used to set the host code page.

You can change the code page by using the **Set GCGID Through GCID (SCG)** command or the **Set CGCS Through Local ID (SCGL)** command. The same code pages for the display session are available.

## Transferring Files

### ■ WAIT Option for Transferring Multiple Files

When you cannot successfully transfer multiple files, add the following parameters to the **[Transfer]** section in the workstation profile (***.WS**):

```
[Transfer]
Wait=1                    ← Added
```

This causes a 1000-msec to 1-second delay between transferring files. If it is not enough, increase the value.

## Transferring Data

### ■ Maximum Length of PIU

When you use the Data Transfer function in the PC400 router session, specify the **maximum length of PIU** to more than 1500 bytes in the Customize Communication dialog box.

### ■ Notes for transferring data

Do not exit a router session while transferring data. The system might be unstable.

Do not exit a shared folder while transferring data from or to the shared folder. The system might be unstable.

## Installation and Use Considerations

# Appendixes

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# Appendix A. Keyword Mapping and Migration from Communications Manager/2

You can migrate most emulator-related information in the Communications Manager/2 configuration to Personal Communications.

The input file for the migration is a CM/2 configuration file or a CM/2 response file for the panel-driven installation, or a CM/2 response file for CID. If CM/2 is migrated to OS/2 Access Feature, an OS/2 Access Feature configuration file can also be specified. You can migrate to a workstation where Personal Communications is installed. CM/2 or the OS/2 Access Feature should also already be installed.

Some emulator-related settings cannot be migrated. Refer to “Keyword Mapping from CM/2” on page A-4 for more information on migrating specific information.

## Naming Conventions and Output from Migration

Personal Communications creates the following files from a CM/2 configuration and places them in the PRIVATE subdirectory in the directory where Personal Communications is installed:

Workstation profiles (***.WS**)
Batch file (***.BCH**)
Response file (***.RSP**)
***.DAT** (if necessary)
**PCSWIN.INI**

Personal Communications also creates the icons for **.WS** and **.BCH** files. The **.BCH** and **.RSP** files that are created have the same name as the input file. However, if **CMUserCFG** is specified in the CM/2 response file, the specified name is used instead of the name of the input file. The **.WS** file has the same name as the **.bch** file, but a short session name specified for an emulator session in CM/2 configuration is appended to the name. If the length of the input file name or CMUserCFG name excluding the extension is 8 characters, the last character is replaced with the short session name.

**Note:** Note that these output files will replace existing files with the same names. Make backups of your existing files if you want to save them.

## Considerations for CID

When a CM/2 response file is used for CID installation (not panel-driven installation), the keyword CMUpdateType needs to be specified. Personal Communications supports the values 0, 3, and 4 for this keyword, as does CID for CM/2. For other values, Personal Communications migrates the CM/2 configuration during Personal Communications installation.

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## CMUserCFG and CMModelCFG

Personal Communications supports the **CMUserCFG** and **CMModelCFG** keywords in a CM/2 response file, as does CM/2. If these keywords are not specified, Personal Communications merges the input configuration information with the CM/2 default configuration, and creates a **.WS** file.

## Migrating the Communication Stack

The communication stack of CM/2 configuration can be migrated to the Personal Communications or CM/2 (OS/2 Access Feature) communication stack. The panel for the selection of the target communication stack will appear during panel-driven installation. For CID, the stack can be specified with the /**M:** parameter. If /**M:** is not specified, it will be migrated to use the Personal Communications communication stack when CM/2 is installed, and it will be migrated to use the OS/2 Access Feature communication stack when OS/2 Access Feature is installed.

When the CM/2 communication stack is selected, a 3270 session is migrated to use LUA and a 5250 session is migrated to use APPC. If CM/2 is migrated to the OS/2 Access Feature, an LUA profile will automatically be created. Otherwise, a LUA profile will need to be created on CM/2 with the same name as the value specified for LUName in the RUI section of the .ws file.

Some of the communication stack will not be migrated as specified. The following table shows which communication stack can be migrated to the Personal Communications or CM/2 communication stack. If an unsupported target communications stack is selected, the installation will fail. Another target communication stack should be specified in such a case.

Your CM/2 link type changes, depending on the communication stack your configuration will use. For 3270 sessions:

*Table A-1. Attachment Types for 3270 Sessions*

| CM/2 Link Type | Personal Communications with CM/2 Communication Stack | Personal Communications Standalone Communication Stack |
|---|---|---|
| Coax DFT | – | DFT |
| 802.2 Token-Ring | LUA | SLAN |
| PC Network | LUA | SLAN |
| Ethernet | LUA | SLAN |
| 3174 Peer Communication | LUA | SLAN |
| SDLC | LUA | SDLC |
| X.25 | LUA | – |
| ISDN | LUA | – |
| SNA-Async | LUA | – |
| Twinax (AS/400 passthru) | LUA | – |
| SDLC (AS/400 passthru) | LUA | – |
| Token-Ring (AS/400 passthru) | LUA | – |
| Ethernet (AS/400 passthru) | LUA | – |

For 5250 sessions:

*Table A-2. Attachment Types for 5250 Sessions*

| CM/2 Link Type | Personal Communications with CM/2 Communication Stack | Personal Communications Standalone Communication Stack |
|---|---|---|
| Twinax | APPC | TDLC |
| 802.2 Token-Ring | APPC | SLAN |
| PC Network | APPC | SLAN |
| Ethernet | APPC | SLAN |
| 3174 Peer Communication | APPC | SLAN |
| SDLC | APPC | SDLC |
| X.25 | APPC | – |
| ISDN | APPC | – |
| SNA-Async | APPC | – |

## Considerations for Migrating the Communication Stack

If a 3270 session is configured as a dependent LU requester, the session will be migrated to the CM/2 communication stack regardless of the target communication stack.

If a 5250 session is configured as a network node, the session will be migrated to the CM/2 communication stack regardless of the target communication stack.

If a CM/2 configuration using SDLC is already migrated to the OS/2 Access Feature, the configuration will need to be migrated to the CM/2 communication stack.

The CM/2 communication stack cannot be specified for migration from CM/2 1.0.

For SDLC, only the “non-switched” line type is migrated to the Personal Communications standalone communication stack.

A valid node ID is required in order to migrate to the Personal Communications communication stack for SLAN and SDLC on a 3270 session.

## Updating CONFIG.SYS

Personal Communications will add a device driver to the CONFIG.SYS file for the appropriate communication stack. However, if a Personal Communications device driver conflicts with a CM/2 or OS/2 Access Feature device driver, the Personal Communications device driver will not be added. In this case, the CM/2 or OS/2 Access Feature device driver will need to be removed after installing Personal Communications.

# Keyword Mapping from CM/2

The following tables outline how Communications Manager/2 keywords map to the corresponding Personal Communications keywords. If not listed, the Personal Communications default values are the same as in Communications Manager/2.

## Installation Keywords

*Table A-3. Installation Keywords*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| **File Manipulation** | | | | | | | |
| Copy | filespec path | N/A | | | | Source file and destination directory of a file to be copied during installation. Errors are ignored, but logged. There may be multiple occurrences of this keyword. | 1 |
| Include | filespec | N/A | | | | Another response file to include in this one. There may be multiple occurrences of this keyword; they are processed in the order found. | 1 |
| **Control / Location pointers** | | | | | | | |
| CMModelCFG | filename (drive & directory optional) (extension(s) implied) | N/A | | | | Location of the model configuration file | 1, 2 |
| CMUpdateType | 0 = no processing done, 3 = configuration change and CONFIG.SYS update (no installation performed), 4 = configuration change and no CONFIG.SYS update (no installation performed) | | | | | Kind of operation to be performed | 1, 3 |
| CMUserCFG | filename (drive & directory optional) (extension(s) implied) | N/A | | | | Location of the user's configuration file | 1, 2 |

**Note 1:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 2:** Only one file is processed. If multiple keywords are specified, the last one specified is used.

**Note 3:** For other values, installation and configuration change are performed.

## 3270_SESSION Record

*Table A-4 (Page 1 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | A-Z | N/A | | | | Session name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | A-Z | N/A | | | | Copy the record specified to the NAME specified | 2 |

*Table A-4 (Page 2 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| **3270 Session information** | | | | | | | |
| COMMENT | 1 to 60 characters | none | Description | CM/2 value | Profile | Comment | |
| LONG_SESSION_NAME | 1 to 8 SNA Type A characters. | NAME | UserTitle and CaptionFormat | CM/2 value for UserTitle,<br>0004 (alternative name) for CaptionFormat | Window | Long session/LU name | |
| SESSION_AUTOSTART | 0 or N = NO, 1 or Y = YES | 0 | AutoConnect | 1 | Communi-cation | Session to be autostarted | 3 |
| SESSION_TYPE | Integer (1-2)<br>1 = Display (terminal)<br>2 = Printer | 1 | SessionType | Display if CM/2 value is 1, Printer if CM/2 value is 2 | 3270 | Session type | |
| ACTIVATE_PS_PRINT | 0 or N = NO, 1 or Y = YES | 1 | | | | Activate presentation space print | 4 |
| SHOW_WINDOW | 0 or N = NO, 1 or Y = YES | 1 | window-ID | i xxx xxx xxx xxx x x xx xxx x (string)<br>Set value on position 01<br>1 = WC_OPENHIDE (if No)<br>3 = WC_OPENNORMAL (if Yes) | LastExitView in PCSWIN.INI | Show window at start-up | |
| AT_KEYBOARD_NAME | 1 to 8 alphanumeric characters | none | | | | AT keyboard name | 5 |
| ENHANCED_KEYBOARD_NAME | 1 to 8 alphanumeric characters | none | | | | Enhanced keyboard name | 6 |
| 106_KEYBOARD_NAME | 1 to 8 alphanumeric characters | none | | | | 106 enhanced keyboard name | 7 |
| COLOR_NAME | 1 to 8 alphanumeric characters | none | | | | Color record name | 8 |
| HOST_ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0040=Application program makes beep | Window | Host alarm | |
| **Note:** Above session information is common to 3270 and 5250, below is unique to 3270. | | | | | | | |
| SPACE_SIZE | Integer (1-5)<br>1 = 25x80<br>2 = 33x80<br>3 = 44x80<br>4 = 28x132<br>5 = Other | 1 | ScreenSize | nnxnn<br>24x80 if CM/2 value is 1<br>32x80 if CM/2 value is 2<br>43x80 if CM/2 value is 3<br>27x132 if CM/2 value is 4<br>PS_SIZE_ROW x PS_SIZE_COLUMN if CM/2 value is 5 | 3270 | Presentation space size | |
| PS_SIZE_ROW | Integer (25-51)<br>**Note:** In DBCS system, valid range is 25 to 44. | 25 | ScreenSize | CM/2 value x PS_SIZE_COLUMN | 3270 | Rows of presentation space size | 9 |
| PS_SIZE_COLUMN | Integer (80-146)<br>**Note:** In DBCS system, valid range is 80 to 132. | 80 | ScreenSize | PS_SIZE_ROW x CM/2 value | 3270 | Columns of presentation space size | 9 |

## Keyword Mapping from CM/2

*Table A-4 (Page 3 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| XFER_SIZE | Integer (0-32)<br>0 = Emulator default | 0 | PacketSize | CM/2 value x 1024 | Transfer | Data transfer buffer size (k) | 10 |
| UNSUP_CONTROL _CODE | Integer (1-2)<br>1 = Display hyphens<br>2 = Error codes | 1 | UndefinedCode | 1 if CM/2 value is 1<br>0 if CM/2 value is 2 | LT | Unsupported control codes | |
| EMU_TYPE | Integer (1 - 2)<br>1 = Non-coaxial<br>2 = coaxial, maximum of 5 | 1 | | | | Emulator Type | 11 |
| NAU_ADDRESS | Integer (1-255) | none | LuNumber | CM/2 value if value is less than 100<br>FF (automatically set) if else | 3270 | NAU address | 12 |
| LOGICAL_TERM _NUMBER | Integer (1-5) | none | LtNumber | CM/2 value | 3270 | Session number. Identifies which logical terminal is to be configured. Maximum of 5. | 13 |
| HOST_LINK_NAME | 1 to 8 SNA Type A characters | none | | | | Host link name for multiple PU | 14 |
| DATA_COMPRESSION | Integer (0-1)<br>0 = Disabled<br>1 = Enabled | 0 | CompEnabled | CM/2 value | LU | Data Compression for emulator | |
| **3270 Window and Mouse information. SESSION_TYPE must equal 1 (Display) to use these field keywords.** | | | | | | | |
| PROTECTED_FIELD _ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0020=Beeps for invalid key type | Window | Protected field alarm | |
| SCREEN_UPDATE _ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0080=Update alarm is on | Window | Screen update alarm | |
| TITLE_BAR | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0004=Maximized without title bar | Window | Show title bar | |
| DISPLAY_ROW _COLUMN | Integer (1-2)<br>1 = On<br>2 = Off | 2 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0800=Row/column indicator is on | Window | Display row, column for operator information area | |
| MIN_MAX_STATE | Integer (1-3)<br>1 = Neither<br>2 = Minimized<br>3 = Maximized | 1 | window-id | i xxx xxx xxx xxx x x xx xxx x (string)<br>Set value on position 01<br>2 = WC_OPENICONIC (if 2)<br>3 = WC_ OPENNORMAL (if 1)<br>4 = WC_ OPENZOOMED (if 3) | LastExitView in PCSWIN.INI | Window minimized/maximized state | |

*Table A-4 (Page 4 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| MENU_BAR | Integer (1-2)<br>1 = On<br>2 = Off | 1 | window-id | x xxx xxx xxx xxx i x xx xxx x (string)<br>If value is 2, the value ORed with the following is set on position 06<br>0010: Menu bar is hidden | LastExitView in PCSWIN.INI | Show menu bar | |
| HOTSPOT_PFNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF PFnn if CM/2 value is 1 | HotSpot | PFnn - Hotspot support | |
| HOTSPOT_FPNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF FPnn if CM/2 value is 1 | HotSpot | FPnn - Hotspot support | |
| HOTSPOT_FNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF Fnn if CM/2 value is 1 | HotSpot | Fnn - Hotspot support | |
| HOTSPOT_NN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF nn if CM/2 value is 1 | HotSpot | nn - Hotspot support | |
| HOTSPOT_SELECT _STRING | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | string if CM/2 value is 1 | HotSpot | Point-and-Select String Hotspot support | |
| **3270 Printer information. SESSION_TYPE must equal 2 (Printer), or ACTIVATE_PS_PRINT must equal 1 (or Y), to use these field keywords.** | | | | | | | |
| PRINT_NULLS_SPACES | 0 or N = NO, 1 or Y = YES | 1 | PRTOPT2 | CM/2 value | Printers | Print nulls as spaces | |
| SPOOL_OUTPUT | 0 or N = NO, 1 or Y = YES | 1 | | Yes only | | Spool output | |
| SKIP_BLANK_LINES | 0 or N = NO, 1 or Y = YES | 1 | PRTOPT1 | CM/2 value | Printers | Skip blank lines | |
| HOST_CODE_PAGE | Integer. Value must be one of the following: 037, 273, 277, 278, 280, 284, 285, 297, 500, 870, 871, 1026, and 65280 through 65534. | Based on workstation country as defined in CONFIG.SYS. | HostCodePage | nnn-c<br>037 -> 037-U<br>273 -> 273-G<br>277 -> 277-D<br>278 -> 278-S<br>280 -> 280-I<br>284 -> 284-L<br>285 -> 285-U<br>297 -> 297-F<br>500 -> 500-M<br>870 -> 870-H<br>871 -> 871-I<br>930 -> 930-JK<br>939 -> 939-JLE<br>933, 935, 937, 1026 -> N/A | 3270 | Host code page | 15, 21 |
| PC_CODE_PAGE | Integer. Value must be one of the following: 437, 850, 852, 857, 860, 861, 863, 865 or 65280 through 65534. | Based on workstation country as defined in CONFIG.SYS. | | 850 for SBCS system,<br>942 for DBCS system | | PC code page | 20 |
| CHARS_PER_INCH | Integer (1-255)<br>**Note:** In DBCS, only 10, 12 and 15 cpi are valid. | Note 16 | CPI | CM/2 value | Printers | Characters per inch | 17 |
| LINES_PER_INCH | Integer (1-255)<br>**Note:** In DBCS, only 4, 6 and 8 lpi are valid. | 6 | LPI | CM/2 value | Printers | Lines per inch | |
| LINE_SPACING | Integer (1-2)<br>1 = Single<br>2 = Double | 1 | | automatically handled | | Line spacing | |
| JOB_NAME | 1 to 16 alphanumeric characters for SBCS.<br>1 to 16 (any) characters for DBCS. | none | | Title of WS window only | | Job name | |

## Keyword Mapping from CM/2

*Table A-4 (Page 5 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| SPOOL_NAME | 1 to 8 characters | none | printer | CM/2 value followed ",," | Printers | Spooler queue name | |
| FACE_NAME | 1 to 32 alphanumeric characters | none | | | | Face name (font selection) | 18 |
| FORM_TYPE | Integer (1-2)<br>1 = Continuous forms<br>2 = Cut sheets | 1 | Tractor | 1 if CM/2 value is 1, 0 if CM/2 value is 2 | Printers | Form Type | |
| SPOOL_DATA_FORMAT | Integer (1-2)<br>1 = Raw data<br>2 = GPI | 1 | PDT | 1 if CM/2 value is 1, 0 if CM/2 value is 2 | Printers | Spool Data Format | 19 |
| **Note:** Above printer information is common to 3270 and 5250, below is unique to 3270. | | | | | | | |
| TRANSLATE_-TRANSPARENCY | 0 or N = NO, 1 or Y = YES | 0 | ATRN | 1 if CM/2 value is No, 0 if CM/2 value is Yes | Printers | Translate transparency data | |
| END_OF_JOB_TIMEOUT | Integer (0 - 32000)<br>0 = system default | 0 | TerminateTime | CM/2 value | Printers | End of Job Timeout | |
| FORM_FEED_POS | Integer (1-2)<br>1 = Any column<br>2 = Column 1 only | 1 | FFAnyPos | 1 if CM/2 value is 1, 0 if CM/2 value is 2 | Printers | Form feed position | |
| PDT_NAME | 1 to 8 alphanumeric characters | none | PDTPATH and PDTFILE | CM/2 value followed by ".PDT" for PDTFILE path including PDT file for PDTPATH | Printers | Migration mode PDT | |

*Table A-4 (Page 6 of 6). 3270_SESSION record (3270_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| PRINT_BUFFER_SIZE | Integer (1920-15300)<br>**Note:** In DBCS system, valid range is 1920 to 4016. | 1920 | | ScreenSize only | | Print buffer size | |

**Note 1:** Keyword and value must be specified in the response file.

The value is used as a part of .WS file name to be created.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** If the value is No, the statement to start this session is commented out in BCH file.

**Note 4:** Keyword and value are not migrated. If the value is Yes, keywords for the printer session are migrated even if it is the display session.

**Note 5:** AT_KEYBOARD record which has the specified value for NAME keyword is migrated. AT_KEYBOARD record is not migrated on SBCS because Personal Communications does not support the keyboard type. AT_KEYBOARD record is migrated if 5574-001 keyboard is physically attached on DBCS machine.

**Note 6:** ENHANCED_KEYBOARD record which has the specified value for NAME keyword is migrated. ENHANCED_KEYBOARD record is migrated if PS/2 type keyboard is physically attached on SBCS machine. ENHANCED_KEYBOARD record is migrated if 5574-002/003 keyboard is physically attached on DBCS machine.

**Note 7:** 106_ENHANCED_KEYBOARD record which has the specified value for NAME keyword is migrated. 106_ENHANCED_KEYBOARD record is migrated if 5574-A01 keyboard is physically attached on DBCS machine.

**Note 8:** 3270_COLOR record which has the specified value for NAME keyword is migrated.

**Note 9:** This field is used when SPACE_SIZE = 5 (other).

**Note 10:** 32000 is set if a CM/2 value x 1024 is greater than 32000.

Keyword and value are migrated if SESSION_TYPE = 1 (Display).

**Note 11:** Keyword and value are not migrated. If the value is 1, keywords for Non-coaxial are migrated. If the value is 2, keywords for Coaxial are migrated.

**Note 12:** Keyword and value are migrated if EMU_TYPE = 1 (non-coaxial).

**Note 13:** Keyword and value are migrated if EMU_TYPE = 2 (coaxial).

**Note 14:** LOGICAL_LINK record which has the specified value for NAME keyword is migrated.

**Note 15:** The default value is 037-U.

**Note 16:** For 3270, the default for SBCS is 10, for DBCS is 12. For 5250 SBCS, the default is 10. For 5250 DBCS, the default is 12 for Display (terminal) and 10 for Printer session type.

**Note 17:** The default value is 0 (depends on the font size).

**Note 18:** Keyword and value are not migrated. Personal Communications needs also Point and Raster to set FaceName.

**Note 19:** Used only in DBCS systems

If the value is 1, keywords PDTPATH and PDTFILE are also set. IBM5577.PDT is set for PDTFILE.

**Note 20:**

In DBCS systems, CM/2 values are:

932,942 Japan
934,944 Korea
936,946 PRC
938,948 ROC

(If running on a Japanese workstation, only 932 and 942 code pages are valid. Same rule applies for other countries.)

**Note 21:** In DBCS system, CM/2 values are:

930, 931, 939 Japan
933 Korea
935 PRC
937 ROC

(If running on a Japanese workstation, only the 930, 931, and 939 code pages are valid. Same rule applies for other countries.)

# 3270_COLOR Record

*Table A-5 (Page 1 of 4). 3270_COLOR record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | | | | Color record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| **Fields of Background Attributes** | | | | | | | |
| B_NORMAL_UNPROT | Integer (1-16)<br>1 = Black<br>2 = Blue<br>3 = Green<br>4 = Cyan<br>5 = Red<br>6 = Magenta<br>7 = Brown<br>8 = Light gray<br>9 = Gray<br>10 = Light blue<br>11 = Light green<br>12 = Light cyan<br>13 = Light red<br>14 = Light magenta<br>15 = Yellow<br>16 = White | 1 | BackText | dd xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx<br>CM/2 value is mapped to Personal Communications value as follows:<br>1 -> 0: Black<br>2 -> 12: Dark Blue<br>3 -> 8: Dark Green<br>4 -> 10: Dark Turquoise<br>5 -> 4: Orange<br>6 -> 14: Purple<br>7 -> 6: Mustard<br>8 -> 2: Gray<br>9 -> 1: Brown<br>10 -> 13: Blue<br>11 -> 9: Green<br>12 -> 11: Turquoise<br>13 -> 5: Red<br>14 -> 15: Pink<br>15 -> 7: Yellow<br>16 -> 3: White<br>Value corresponding to CM/2 value is set at dd position above | Colors | Normal, Unprotected, background<br>Personal Communications specifies the background color by setting the color palette index to the following position:<br>color index integer<br>BackText= xx xx xx...xx<br>1 2 3...21<br>position meaning<br>01: Normal, unprotected<br>02: Intensified, unprotected<br>03: Normal, protected<br>04: Intensified, protected<br>05: Extended, blue<br>06: Extended, green<br>07: Extended, pink<br>08: Extended, red<br>09: Extended, turquoise<br>10: Extended, white<br>11: Extended, yellow<br>12: Extended, default highlight<br>13: Extended, default<br>14: OIA, status indicators<br>15: OIA, information indicators<br>16: OIA, attention indicators<br>17: OIA, error indicators<br>18: OIA, background<br>19: Screen color<br>20: Divider line<br>21: Rule line | |
| B_INTENSE_UNPROT | See above for B_ color value. | 1 | BackText | xx dd xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Intensified, Unprotected, background | |
| B_NORMAL_PROT | See above for B_ color value. | 1 | BackText | xx xx dd xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Normal, Protected, background | |
| B_INTENSE_PROT | See above for B_ color value. | 1 | BackText | xx xx xx dd xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Intensified, Protected, background | |
| B_BLUE | See above for B_ color value. | 1 | BackText | xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Blue, background | |
| B_GREEN | See above for B_ color value. | 1 | BackText | xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Green, background | |

*Table A-5 (Page 2 of 4). 3270_COLOR record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| B_PINK | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Pink, background | |
| B_RED | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx xx | Colors | Red, background | |
| B_TURQUOISE | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx | Colors | Turquoise, background | |
| B_WHITE | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx | Colors | White, background | |
| B_YELLOW | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx | Colors | Yellow, background | |
| B_DEFAULT_HILITE | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx | Colors | Default Highlight, background | |
| B_DEFAULT_NO_HILITE | See above for B_ color value. | 1 | BackText | xx xx xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx | Colors | Default No Highlight, background | |
| B_BLINK | See above for B_ color value. | 8 | BlinkAttr | xx dd | Colors | Blink, background<br>Personal Communications specifies the blink attribute by setting the color palette index to the following position:<br>color index integer<br>BlinkAttr=xx xx xx...xx<br>1 2 3...21<br>position meaning<br>01: Foreground color for blink<br>02: Background color for blink | |
| B_OIA | See above for B_ color value. | 3 | BackText | xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx | Colors | Operator Information Area, background | |
| **Fields of Foreground Attributes** | | | | | | | |

## Keyword Mapping from CM/2

*Table A-5 (Page 3 of 4). 3270_COLOR record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| F_NORMAL_UNPROT | Integer (1-16)<br>1 = Black<br>2 = Blue<br>3 = Green<br>4 = Cyan<br>5 = Red<br>6 = Magenta<br>7 = Brown<br>8 = Light gray<br>9 = Gray<br>10 = Light blue<br>11 = Light green<br>12 = Light cyan<br>13 = Light red<br>14 = Light magenta<br>15 = Yellow<br>16 = White | 3 | ForeText | dd xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx<br>CM/2 value is mapped to Personal Communications value as follows:<br>1 -> 0: Black<br>2 -> 12: Dark Blue<br>3 -> 8: Dark Green<br>4 -> 10: Dark Turquoise<br>5 -> 4: Orange<br>6 -> 14: Purple<br>7 -> 6: Mustard<br>8 -> 2: Gray<br>9 -> 1: Brown<br>10 -> 13: Blue<br>11 -> 9: Green<br>12 -> 11: Turquoise<br>13 -> 5: Red<br>14 -> 15: Pink<br>15 -> 7: Yellow<br>16 -> 3: White<br>Value corresponding to CM/2 value is set at dd position above | Colors | Normal, Unprotected, foreground<br>Personal Communications specifies the foreground color by setting the color palette index to the following position:<br>color index integer<br>ForeText= xx xx xx...xx<br>1 2 3...21<br>position meaning<br>01: Normal, unprotected<br>02: Intensified, unprotected<br>03: Normal, protected<br>04: Intensified, protected<br>05: Extended, blue<br>06: Extended, green<br>07: Extended, pink<br>08: Extended, red<br>09: Extended, turquoise<br>10: Extended, white<br>11: Extended, yellow<br>12: Extended, default highlight<br>13: Extended, default<br>14: OIA, status indicators<br>15: OIA, information indicators<br>16: OIA, attention indicators<br>17: OIA, error indicators<br>18: OIA, background<br>19: Screen color<br>20: Divider line<br>21: Rule line | |
| F_INTENSE_UNPROT | See above for F_ color value. | 13 | ForeText | xx dd xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Intensified, Unprotected, foreground | |
| F_NORMAL_PROT | See above for F_ color value. | 4 | ForeText | xx xx dd xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Normal, Protected, foreground | |
| F_INTENSE_PROT | See above for F_ color value. | 8 | ForeText | xx xx xx dd xx<br>xx xx xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Intensified, Protected, foreground | |
| F_BLUE | See above for F_ color value. | 4 | ForeText | xx xx xx xx dd<br>xx xx xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Blue, foreground | |
| F_GREEN | See above for F_ color value. | 3 | ForeText | xx xx xx xx xx<br>dd xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx xx | Colors | Green, foreground | |
| F_PINK | See above for F_ color value. | 14 | ForeText | xx xx xx xx xx xx<br>dd xx xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Pink, foreground | |
| F_RED | See above for F_ color value. | 13 | ForeText | xx xx xx xx xx xx<br>xx dd xx xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Red, foreground | |
| F_TURQUOISE | See above for F_ color value. | 12 | ForeText | xx xx xx xx xx xx<br>xx xx dd xx xx<br>xx xx xx xx xx xx<br>xx xx xx xx | Colors | Turquoise, foreground | |

*Table A-5 (Page 4 of 4). 3270_COLOR record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| F_WHITE | See above for F_ color value. | 8 | ForeText | xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx | Colors | White, foreground | |
| F_YELLOW | See above for F_ color value. | 15 | ForeText | xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx xx | Colors | Yellow, foreground | |
| F_DEFAULT_HILITE | See above for F_ color value. | 8 | ForeText | xx xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx | Colors | Default Highlight, foreground | |
| F_DEFAULT_NO_HILITE | See above for F_ color value. | 3 | ForeText | xx xx xx xx xx xx xx xx xx xx dd xx xx xx xx xx xx xx xx xx | Colors | Default No Highlight, foreground | |
| F_BLINK | See above for F_ color value. | 1 | BlinkAttr | dd xx | Colors | Blink, foreground Personal Communications specifies the blink attribute by setting the color palette index to the following position:<br>color index integer<br>BlinkAttr=xx xx xx...xx<br>1 2 3...21<br>position meaning<br>01: Foreground color for blink<br>02: Background color for blink | |
| F_OIA | See above for F_ color value. | 1 | ForeText | xx xx xx xx xx xx xx xx xx xx xx xx dd dd dd dd xx xx xx xx | Colors | Operator Information Area, foreground | |

**Note 1:** Must be specified in the response file

Keyword and value are not migrated. If the value is same as the value of COLOR_NAME keyword in 3270_SESSION, this 3270_COLOR record is migrated.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

# FT_VM Record

*Table A-6 (Page 1 of 3). FT_VM record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | XferTypesVMn (n = 1-32) | CM/2 value followed by "~()" | Transfer | VM file transfer record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| ASCII | 0 or N = NO, 1 or Y = YES | 1 | XferTypesVMn | xxxx~(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation | 3, 8 |
| ASCII_RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesVMn | xxxx~(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation for Receive | 3, 8 |
| CRLF_SEPARATOR | 0 or N = NO, 1 or Y = YES | 1 | XferTypesVMn | xxxx~(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator | 9 |
| CRLF_SEPARATOR _RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesVMn | xxxx~(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator for Receive | 9 |

## Keyword Mapping from CM/2

*Table A-6 (Page 2 of 3). FT_VM record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| HOST_CODE_PAGE | Integer. Value must be one of the following: 037, 273, 277, 278, 280, 284, 285, 297, 500 and 65280 through 65534.<br>**Note:** In DBCS system,<br>930,931,939 Japan<br>933 Korea<br>935 PRC<br>937 ROC<br>(If running on a Japanese workstation, only 930, 931 and 939 code pages are valid. Same rule applies for other countries.) | none | | | | Host file code page | 4 |
| PC_CODE_PAGE | Integer. Value must be one of the following: 437, 850, 860, 863, 865 or 65280 through 65534.<br>**Note:** In DBCS system,<br>932,942 Japan<br>934,944 Korea<br>936,946 PRC<br>938,948 ROC<br>(If running on a Japanese workstation, only 932 and 942 code pages are valid. Same rule applies for other countries.) | none | PCCodePage | CM/2 value if it is not a user defined code page | Transfer | PC file code page | 5 |
| HOST_FT_COMMAND | 1 to 8 alphanumeric characters | Note 6 | HostCommand | CM/2 value if it is not IBM_HOST_-_PROGRAM | Transfer | Host file transfer command | 7 |
| APPEND | 0 or N = NO, 1 or Y = YES | 0 | XferTypesVMn | xxxx~(APPEND) if CM/2 value is Yes | Transfer | Append to target file | 10 |
| APPEND_RECEIVE | 0 or N = NO, 1 or Y = YES | 0 | XferTypesVMn | xxxx~(APPEND) if CM/2 value is Yes | Transfer | Append to target file for Receive | 10 |
| LOGICAL_RECORD _LENGTH | Integer (0-32760) | 0 | XferTypesVMn | xxxx~(LRECL n) (n is a CM/2 value) | Transfer | Logical record length | |
| RECORD_FORMAT | Integer (1-3)<br>1 = Default<br>2 = Variable<br>3 = Fixed | 1 | XferTypesVMn | xxxx~(RECFM c)<br>not set if CM/2 value is 1<br>c: V if CM/2 value is 2<br>c: F if CM/2 value is 3 | Transfer | Record format of host file | |
| FILL_BLANK | 0 or N = NO, 1 or Y = YES | 0 | XferTypesVMn | xxxx~(BLANK) if CM/2 value is Yes | Transfer | Fill blank to record end for Receive | |
| NOSO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesVMn | xxxx~(NOSO) if CM/2 value is Yes | Transfer | Remove Shift-Out/Shift-In (SO/SI) characters for Send | |

*Table A-6 (Page 3 of 3). FT_VM record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| SO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesVMn | xxxx¯(SO) if CM/2 value is Yes | Transfer | Leave Shift-Out/Shift-In (SO/SI) characters for Receive | |
| **Note 1:** Keyword and value must be specified in the response file.<br>The value is migrated as:<br>XferTypesVMn = value¯(...) | | | | | | | |
| **Note 2:** Keyword and value are not migrated, but handled as same as CM/2. | | | | | | | |
| **Note 3:** ASCII is set for SBCS, JISCII is set for DBCS.<br>"xxxx" at Personal Communications Values column represents the value of NAME keyword. | | | | | | | |
| **Note 4:** Keyword and value are not migrated. The value of HostCodePage keyword in 3270 section is used. | | | | | | | |
| **Note 5:** If the value is a user defined code page (value between 65280 and 65534), the value is not migrated. | | | | | | | |
| **Note 6:** Default in SBCS is IND$FILE, default in DBCS is APVUFILE. | | | | | | | |
| **Note 7:** If the value is IBM_HOST_PROGRAM, the value is not migrated. | | | | | | | |
| **Note 8:** If Yes is set for either the ASCII or ASCII_RECEIVE keywords, the value is migrated. | | | | | | | |
| **Note 9:** If Yes is set for either the CRLF_SEPARATOR or CRLF_SEPARATOR_RECEIVE keywords, the value is migrated. | | | | | | | |
| **Note 10:** If Yes is set for either the APPEND or APPEND_RECEIVE keywords, the value is migrated. | | | | | | | |

# FT_TSO Record

*Table A-7 (Page 1 of 3). FT_TSO record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | XferTypesMVSn (n = 1-32) | CM/2 value followed by "¯()" | Transfer | TSO file transfer record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| ASCII | 0 or N = NO, 1 or Y = YES | 1 | XferTypesMVSn | xxxx¯(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation | 3, 8 |
| ASCII_RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesMVSn | xxxx¯(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation for Receive | 3, 8 |
| CRLF_SEPARATOR | 0 or N = NO, 1 or Y = YES | 1 | XferTypesMVSn | xxxx¯(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator | 9 |
| CRLF_SEPARATOR _RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesMVSn | xxxx¯(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator for Receive | 9 |
| HOST_CODE_PAGE | Integer. Value must be one of the following: 037, 273, 277, 278, 280, 284, 285, 297, 500 and 65280 through 65534.<br>**Note:**<br>In DBCS system,<br>930,931,939 Japan<br>933 Korea<br>935 PRC<br>937 ROC<br>(If running on a Japanese workstation, only 930, 931 and 939 code pages are valid. Same rule applies for other countries.) | none | | | | Host file code page | 4 |

## Keyword Mapping from CM/2

*Table A-7 (Page 2 of 3). FT_TSO record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| PC_CODE_PAGE | Integer. Value must be one of the following: 437, 850, 860, 863, 865 or 65280 through 65534.<br>**Note:**<br>In DBCS system,<br>932,942 Japan<br>934,944 Korea<br>936,946 PRC<br>938,948 ROC<br>(If running on a Japanese workstation, only 932 and 942 code pages are valid. Same rule applies for other countries.) | none | PCCodePage | CM/2 value if it is not a user defined code page | Transfer | PC file code page | 5 |
| HOST_FT_COMMAND | 1 to 8 alphanumeric characters | Note 6 | HostCommand | CM/2 value if it is not IBM_HOST-_PROGRAM | Transfer | Host file transfer command | 7 |
| APPEND | 0 or N = NO, 1 or Y = YES | 0 | XferTypesMVSn | xxxx~(APPEND) if CM/2 value is Yes | Transfer | Append to target file | 10 |
| APPEND_RECEIVE | 0 or N = NO, 1 or Y = YES | 0 | XferTypesMVSn | xxxx~(APPEND) if CM/2 value is Yes | Transfer | Append to target file for Receive | 10 |
| LOGICAL_RECORD _LENGTH | Integer (0-32760) | 0 | XferTypesMVSn | xxxx~(LRECL n) (n is a CM/2 value) | Transfer | Logical record length | |
| RECORD_FORMAT | Integer (1-4)<br>1 = Default<br>2 = Variable<br>3 = Fixed<br>4 = Undefined | 1 | XferTypesMVSn | xxxx~(RECFM c)<br>not set if CM/2 value is 1<br>c: V if CM/2 value is 2<br>c: F if CM/2 value is 3<br>c: U if CM/2 value is 4 | Transfer | Record format of host file | |
| HOST_BLOCK_SIZE | Integer (0-32760) | 0 | XferTypesMVSn | xxxx~(BLKSIZE(n)) (n is CM/2 value)<br>not set if CM/2 value is 0 | Transfer | Block size of host file | |
| SPACE_QUANTITY | Integer (0-99999) | 0 | XferTypesMVSn | xxxx~(SPACE(n)) (n is CM/2 value)<br>not set if CM/2 value is 0 | Transfer | Quantity | |
| SPACE_INCREMENT | Integer (0-99999) | 0 | XferTypesMVSn | xxxx~(SPACE(,n)) (n is CM/2 value)<br>not set if CM/2 value is 0 | Transfer | Increment | |
| SPACE_UNITS | Integer (1-4)<br>1 = Defaults<br>2 = Tracks<br>3 = Cylinders<br>4 = Average blocks | 1 | XferTypesMVSn | not set if value is 1<br>xxxx~(TRACKS) if value is 2<br>xxxx~(CYLINDERS) if value is 3<br>xxxx~(AVBLOCK(n)) if value is 4<br>n : value of AVERAGE_-BLOCK_SIZE keyword | Transfer | Units for space allocation | |
| AVERAGE_BLOCK_SIZE | Integer (0-32760) | 0 | XferTypesMVSn | xxxx~(AVBLOCK(n)) (n is CM/2 value)<br>not set if CM/2 value is 0 | Transfer | Average block size | |

*Table A-7 (Page 3 of 3). FT_TSO record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| FILL_BLANK | 0 or N = NO, 1 or Y = YES | 0 | XferTypesMVSn | xxxx~(BLANK) if CM/2 value is Yes | Transfer | Fill blank to record end for Receive | |
| NOSO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesMVSn | xxxx~(NOSO) if CM/2 value is Yes | Transfer | Remove Shift-Out/Shift-In (SO/SI) characters for Send | |
| SO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesMVSn | xxxx~(SO) if CM/2 value is Yes | Transfer | Leave Shift-Out/Shift-In (SO/SI) characters for Receive | |

**Note 1:** Keyword and value must be specified in the response file.

The value is migrated as:
XferTypesMVSn = value~(...)

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** ASCII is set for SBCS, JISCII is set for DBCS.

"xxxx" at Personal Communications Values column represents the value of NAME keyword.

**Note 4:** Keyword and value are not migrated. The value of HostCodePage keyword in 3270 section is used.

**Note 5:** If the value is a user defined code page (value between 65280 and 65534), the value is not migrated.

**Note 6:** Default in SBCS is IND$FILE, default in DBCS is APVUFILE.

**Note 7:** If the value is IBM_HOST_PROGRAM, the value is not migrated.

**Note 8:** If Yes is set for either the ASCII or ASCII_RECEIVE keywords, the value is migrated.

**Note 9:** If Yes is set for either the CRLF_SEPARATOR or CRLF_SEPARATOR_RECEIVE keywords, the value is migrated.

**Note 10:** If Yes is set for either the APPEND or APPEND_RECEIVE keywords, the value is migrated.

# FT_CICS Record

*Table A-8 (Page 1 of 2). FT_CICS record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | XferTypesCICSn (n = 1-32) | CM/2 value followed "~()" | Transfer | CICS file transfer record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| ASCII | 0 or N = NO, 1 or Y = YES | 1 | XferTypesCICSn | xxxx~(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation | 3, 8 |
| ASCII_RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesCICSn | xxxx~(ASCII) if CM/2 value is Yes | Transfer | ASCII to/from EBCDIC translation for Receive | 3, 8 |
| CRLF_SEPARATOR | 0 or N = NO, 1 or Y = YES | 1 | XferTypesCICSn | xxxx~(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator | 9 |
| CRLF_SEPARATOR _RECEIVE | 0 or N = NO, 1 or Y = YES | 1 | XferTypesCICSn | xxxx~(CRLF) if CM/2 value is Yes | Transfer | Use CR/LF as record separator for Receive | 9 |

## Keyword Mapping from CM/2

*Table A-8 (Page 2 of 2). FT_CICS record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| HOST_CODE_PAGE | Integer. Value must be one of the following: 037, 273, 277, 278, 280, 284, 285, 297, 500 and 65280 through 65534.<br>**Note:**<br>In DBCS system,<br>930,931,939 Japan<br>933 Korea<br>935 PRC<br>937 ROC<br>(If running on a Japanese workstation, only 930, 931 and 939 code pages are valid. Same rule applies for other countries.) | none | | | | Host file code page | 4 |
| PC_CODE_PAGE | Integer. Value must be one of the following: 437, 850, 860, 863, 865 or 65280 through 65534.<br>**Note:**<br>In DBCS system,<br>932,942 Japan<br>934,944 Korea<br>936,946 PRC<br>938,948 ROC<br>(If running on a Japanese workstation, only 932 and 942 code pages are valid. Same rule applies for other countries.) | none | PCCodePage | CM/2 value if it is not a user defined code page | Transfer | PC file code page | 5 |
| HOST_FT_COMMAND | 1 to 8 alphanumeric characters | Note 6 | HostCommand | CM/2 value if it is not IBM_HOST_-_PROGRAM | Transfer | Host file transfer command | 7 |
| FILL_BLANK | 0 or N = NO, 1 or Y = YES | 0 | XferTypesCICSn | xxxx~(BLANK) if value is Yes | Transfer | Fill blank to record end for Receive | |
| NOSO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesCICSn | xxxx~(NOSO) if CM/2 value is Yes | Transfer | Remove Shift-Out/Shift-In (SO/SI) characters for Send | |
| SO | 0 or N = NO, 1 or Y = YES | 0 | XferTypesCICSn | xxxx~(SO) if CM/2 value is Yes | Transfer | Leave Shift-Out/Shift-In (SO/SI) characters for Receive | |

**Note 1:** Keyword and value must be specified in the response file.

The value is migrated as:

XferTypesCICSn = value~(...)

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** ASCII is set for SBCS, JISCII is set for DBCS.

"xxxx" at Personal Communications Values column represents the value of NAME keyword.

**Note 4:** Keyword and value are not migrated. The value of HostCodePage keyword in 3270 section is used.

**Note 5:** If the value is a user defined code page (value between 65280 and 65534), the value is not migrated.

**Note 6:** Default in SBCS is IND$FILE, default in DBCS is APVUFILE.

**Note 7:** If the value is IBM_HOST_PROGRAM, the value is not migrated.

**Note 8:** If Yes is set for either the ASCII or ASCII_RECEIVE keywords, the value is migrated.

**Note 9:** If Yes is set for either the CRLF_SEPARATOR or CRLF_SEPARATOR_RECEIVE keywords, the value is migrated.

# FT_MISC Record

*Table A-9. FT_MISC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| TIMEOUT | Integer (0-2970)<br>0 = No Timeout. | 30 | TimeOut | CM/2 value if value is 0 or greater than 19, 20 otherwise | Transfer | File Transfer Timeout for transfer (number of seconds). | |
| LIST_FILE_EXT | 1–64 characters | none | ListFileExtension | CM/2 value | Transfer | Default Extension for List Files | 1 |
| FT_DIR | 1–128 characters | C:\ | DefaultDirectory | CM/2 value | Transfer | Default Directory for File Transfer | |

**Note 1:** Keyword and value are migrated if the length of value is less than 4.

# 5250_SESSION Record

*Table A-10 (Page 1 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | A-Z | N/A | | | | Session name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | A-Z | N/A | | | | Copy the record specified to the NAME specified | 2 |
| **5250 Session information** | | | | | | | |
| COMMENT | 1 to 60 characters | none | Description | CM/2 value | Profile | Comment | |
| LONG_SESSION_NAME | 1 to 8 SNA Type A characters. | NAME | UserTitle and CaptionFormat | CM/2 value for UserTitle,<br>0004 (alternative name) for CaptionFormat | Window | Long session/LU name | |
| SESSION_AUTOSTART | 0 or N = NO, 1 or Y = YES | 0 | AutoConnect | 1 | Communi-cation | Session to be autostarted | 3 |
| SESSION_TYPE | Integer (1-2)<br>1 = Display (terminal)<br>2 = Printer | 1 | SessionType | Display if CM/2 value is 1, Printer if CM/2 value is 2 | 3270 | Session type | |
| ACTIVATE_PS_PRINT | 0 or N = NO, 1 or Y = YES | 1 | | | | Activate presentation space print | 4 |
| SHOW_WINDOW | 0 or N = NO, 1 or Y = YES | 1 | window-ID | i xxx xxx xxx xxx x x xx xxx x (string)<br>Set value on position 01<br>1=WC_OPENHIDE (if No)<br>3=WC_ OPENNORMAL (if Yes) | LastExitView in PCSWIN.INI | Show window at start-up | |
| AT_KEYBOARD_NAME | 1 to 8 alphanumeric characters | none | | | | AT keyboard name | 5 |
| ENHANCED_KEYBOARD _NAME | 1 to 8 alphanumeric characters | none | | | | Enhanced keyboard name | 6 |
| 106_KEYBOARD_NAME | 1 to 8 alphanumeric characters | none | | | | 106 enhanced keyboard name | 7 |
| COLOR_NAME | 1 to 8 alphanumeric characters | none | | | | Color record name | 8 |
| HOST_ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set: | xxxx<br>0040 = Application program beeps | Window | Host alarm |

*Table A-10 (Page 2 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| **Note:** Above session information is common to 3270 and 5250, below is unique to 5250. | | | | | | | |
| SPACE_SIZE | Integer (1-2)<br>1 = 25x80<br>2 = 28x132 | 1 | ScreenSize | 24x80 if CM/2 value is 1, 27x132 if CM/2 value is 2 | 5250 | Presentation space size | |
| LOCAL_LU | 1 to 8 characters | none | If Personal Communications communication is used, LOCAL_CP record is processed to set LocalLU keyword at 5250 section. Otherwise, the CM/2 value is set to LocalLU alias keyword at CT section. | | | APPC LU name | |
| PARTNER_LU | NAME of a PARTNER_LU record (1 to 17 SNA Type A characters - name or netid.name) OR LU_ALIAS of a PARTNER_LU record (1 to 8 characters) | none | PartnerLUName or PartnerLUalias | If Personal Communications communication is used, PARTNER_LU record is processed. Otherwise, CM/2 value is set. | CT | Remote LU name | |
| MODE_NAME | 1 to 8 SNA Type A, or the constant BLANK | BLANK | ModeName | CM/2 value | CT | Session mode name | 9 |
| HOST_TYPE | Integer (1-2)<br>1 = System/36<br>2 = AS/400<br>**Note:** In DBCS, only AS/400 is valid. | 2 | | | | Host type | 10 |
| AS400_WORKSTATION_ID | 1 to 10 of the following characters: uppercase A-Z, 0-9 and four symbols #, $, @, and _, but 0-9 and _ cannot be the first character. The constant BLANK is also valid. | BLANK | WorkStationID | CM/2 value | 5250 | AS/400 Workstation ID | |
| AUTO_LOGON | 0 or N = NO, 1 or Y = YES | 0 | AutoLogon | CM/2 value | 5250 | AS/400 Auto-logon | |
| MSG_QUEUE | 1 to 10 of the following characters: uppercase A-Z, 0-9, #, $, and @. The first character cannot be 0-9. | QSYSOPR | MsgQueue | CM/2 value | 5250 | AS/400 Message queue | |
| MSG_QUEUE_LIB | 1 to 10 of the following characters: uppercase A-Z, 0-9, #, $, @, and _. The first character cannot be 0-9 or _. There is only one exception: *LIBL is a valid entry. | *LIBL | MsgLibrary | CM/2 value | 5250 | AS/400 Message queue library | |
| **5250 Window and Mouse information. SESSION_TYPE must equal 1 (Display) to use these field keywords.** | | | | | | | |

*Table A-10 (Page 3 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| PROTECTED_FIELD _ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0020=Beeps for invalid key type | Window | Protected field alarm | |
| SCREEN_UPDATE _ALARM | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0080=Update alarm is on | Window | Screen update alarm | |
| TITLE_BAR | Integer (1-2)<br>1 = On<br>2 = Off | 1 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0004=Maximized without title bar | Window | Show tile bar | |
| DISPLAY_ROW _COLUMN | Integer (1-2)<br>1 = On<br>2 = Off | 2 | SessFlags | xxxx<br>If value is 1, the value ORed with the following is set:<br>0800=Row/column indicator is on | Window | Display row, column for operator information area | |
| MIN_MAX_STATE | Integer (1-3)<br>1 = Neither<br>2 = Minimized<br>3 = Maximized | 1 | window-id | i xxx xxx xxx xxx x x xx xxx x (string)<br>Set value on position 01<br>2 = WC_OPENICONIC (if 2)<br>3 = WC_ OPENNORMAL (if 1)<br>4 = WC_ OPENZOOMED (if 3) | LastExitView in PCSWIN.INI | Window minimized/maximized state | |
| MENU_BAR | Integer (1-2)<br>1 = On<br>2 = Off | 1 | window-id | x xxx xxx xxx xxx i x xx xxx x (string)<br>If value is 2, the value ORed with the following is set on position 06<br>0010: Menu bar is hidden | LastExitView in PCSWIN.INI | Show menu bar | |
| HOTSPOT_PFNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF PFnn if CM/2 value is 1 | HotSpot | PFnn - Hotspot support | |
| HOTSPOT_FPNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF FPnn if CM/2 value is 1 | HotSpot | FPnn - Hotspot support | |
| HOTSPOT_FNN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF Fnn if CM/2 value is 1 | HotSpot | Fnn - Hotspot support | |
| HOTSPOT_NN | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | PF nn if CM/2 value is 1 | HotSpot | nn - Hotspot support | |
| HOTSPOT_SELECT _STRING | Integer (1-2)<br>1 = On<br>2 = Off | 1 | templateN (N is a sequential number) | string if CM/2 value is 1 | HotSpot | Point-and-Select String Hotspot support | |
| **5250 Printer information. SESSION_TYPE must equal 2 (Printer), or ACTIVATE_PS_PRINT must equal 1 (or Y), to use these field keywords.** | | | | | | | |
| PRINT_NULLS_SPACES | 0 or N = NO, 1 or Y = YES | 1 | PRTOPT2 | CM/2 value | Printers | Print nulls as spaces | |
| SPOOL_OUTPUT | 0 or N = NO, 1 or Y = YES | 1 | | Yes only | | Spool output | |
| SKIP_BLANK_LINES | 0 or N = NO, 1 or Y = YES | 1 | PRTOPT1 | CM/2 value | Printers | Skip blank lines | |

*Table A-10 (Page 4 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| HOST_CODE_PAGE | Integer. Value must be one of the following: 037, 273, 277, 278, 280, 284, 285, 297, 500, 870, 871, 1026, and 65280 through 65534.<br>**Note:** In DBCS system,<br>930,931 Japan<br>933 Korea<br>935 PRC<br>937 ROC<br>(If running on a Japanese workstation, only 930 and 931 code pages are valid. Same rule applies for other countries.) | Based on workstation country as defined in CONFIG.SYS. | HostCodePage | nnn-c<br>037 -> 037-U<br>273 -> 273-G<br>277 -> 277-D<br>278 -> 278-S<br>280 -> 280-I<br>284 -> 284-L<br>285 -> 285-U<br>297 -> 297-F<br>500 -> 500-US<br>870 -> N/A<br>871 -> 871-I<br>1026-> N/A<br>930 -> 930-JK<br>931 -> 931-JL<br>933 -> N/A<br>935 -> N/A<br>937 -> N/A | 5250 | Host code page | 11 |
| PC_CODE_PAGE | Integer. Value must be one of the following: 437, 850, 852, 857, 860, 861, 863, 865 or 65280 through 65534.<br>**Note:** In DBCS system,<br>932,942 Japan<br>934,944 Korea<br>936,946 PRC<br>938,948 ROC<br>(If running on a Japanese workstation, only 932 and 942 code pages are valid. Same rule applies for other countries.) | Based on workstation country as defined in CONFIG.SYS. | | 850 for SBCS system<br>942 for DBCS system | | PC code page | |
| CHARS_PER_INCH | Integer (1-255)<br>**Note:** In DBCS, only 10, 12 and 15 cpi are valid. | Note 12 | CPI | CM/2 value | Printers | Characters per inch | 13 |
| LINES_PER_INCH | Integer (1-255)<br>**Note:** In DBCS, only 4, 6 and 8 lpi are valid. | 6 | LPI | CM/2 value | Printers | Lines per inch | |
| LINE_SPACING | Integer (1-2)<br>1 = Single<br>2 = Double | 1 | | automatically handled | | Line spacing | |
| JOB_NAME | 1 to 16 alphanumeric characters for SBCS. 1 to 16 (any) characters for DBCS. | none | | Title of WS window only | | Job name | |
| SPOOL_NAME | 1 to 8 characters | none | printer | CM/2 value followed by ",," | Printers | Spooler queue name | |
| FACE_NAME | 1 to 32 alphanumeric characters | none | | | | Face name (font selection) | 14 |
| FORM_TYPE | Integer (1-2)<br>1 = Continuous forms<br>2 = Cut sheets | 1 | Tractor | 1 if CM/2 value is 1,<br>0 if CM/2 value is 2 | Printers | Form Type | |
| SPOOL_DATA_FORMAT | Integer (1-2)<br>1 = Raw data<br>2 = GPI | 1 | PDT | 1 if CM/2 value is 1,<br>0 if CM/2 value is 2 | Printers | Spool Data Format | 15 |
| **Note:** Above printer information is common to 3270 and 5250, below is unique to 5250. | | | | | | | |

*Table A-10 (Page 5 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| AUTO_PAGE _ORIENTATION | 0 or N = NO, 1 or Y = YES | 1 | AutoOrient | CM/2 value | Printers | Automatic page orientation | |
| FONT_TYPE | Integer (1-48)<br>1 = OCR-B<br>2 = Courier 10<br>3 = Rhetoric<br>4 = Prestige Pica<br>5 = Artisan 10<br>6 = Courier Italic 10<br>7 = OCR-A<br>8 = Pica<br>9 = Math Symbol<br>10= Orator Bold<br>11= Gothic Bold 10<br>12= Gothic Text 10<br>13= Roman Text 10<br>14= Serif Text 10<br>15= Serif Italic 10<br>16= Katakana<br>17= Courier Bold<br>18= Shalom<br>19= Gothic Text 12<br>20= Gothic Italic 12<br>21= Gothic Bold 12<br>22= Serif Text 12<br>23= Serif Italic 12<br>24= Serif Bold 12<br>25= Symbol Scribe 12<br>26= Script<br>27= Courier 12<br>28= Prestige Elite<br>29= Letter Gothic 12<br>30= Prestige Elite Bold<br>31= Letter Gothic Bold<br>32= Not used<br>33= Prestige Elite Italic<br>34= Boldface Italic<br>35= Modern<br>36= Boldface<br>37= Essay<br>38= Essay Italic<br>39= Essay Bold<br>40= Barak<br>41= Essay Light<br>42= Document<br>43= Gothic Text 13<br>44= Prestige 15<br>45= Courier 15<br>46= Math Symbol 15<br>47= Serif Text 15<br>48= Gothic Text 15 | 2 | HostFont | string (without space characters) corresponding to CM/2 value stated in the column of CM/2 Values | 5250 | Host font ID | |
| DRAWER_1 _ORIENTATION | Integer (1-3)<br>1 = Portrait<br>2 = Landscape<br>3 = Computer Output Reduction | 3 | Drawer1Orient | Portrait if CM/2 value is 1, Landscape if CM/2 value is 2, COR if CM/2 value is 3 | Printers | Drawer 1 Orientation | |

## Keyword Mapping from CM/2

*Table A-10 (Page 6 of 6). 5250_SESSION record (5250_SESSION=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| DRAWER_2 _ORIENTATION | Integer (1-3) 1 = Portrait 2 = Landscape 3 = Computer Output Reduction | 3 | Drawer2Orient | Portrait if CM/2 value is 1, Landscape if CM/2 value is 2, COR if CM/2 value is 3 | Printers | Drawer 2 Orientation | |

**Note 1:** Keyword and value must be specified in the response file.

The value is used as a part of WS (RSP) file name to be created.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** If the value is No, the statement to start this session is commented out in BCH file.

**Note 4:** Keyword and value are not migrated. If the value is Yes, keywords for the printer session are migrated even if it is the display session.

**Note 5:** AT_KEYBOARD record which has the specified value for NAME keyword is migrated. AT_KEYBOARD record is not migrated on SBCS because Personal Communications does not support the keyboard type. AT_KEYBOARD record is migrated if 5574-001 keyboard is physically attached on DBCS machine.

**Note 6:** ENHANCED_KEYBOARD record which has the specified value for NAME keyword is migrated. ENHANCED_KEYBOARD record is migrated if PS/2 type keyboard is physically attached on SBCS machine. ENHANCED_KEYBOARD record is migrated if 5574-002/003 keyboard is physically attached on DBCS machine.

**Note 7:** 106_ENHANCED_KEYBOARD record which has the specified value for NAME keyword is migrated. 106_ENHANCED_KEYBOARD record is migrated if 5574-A01 keyboard is physically attached on DBCS machine.

**Note 8:** 5250_COLOR record is not migrated from CM/2 to Personal Communications color.

**Note 9:** Keyword and value are migrated if Personal Communications communication is not used.

**Note 10:** S/36 is not migrated from CM/2 to Personal Communications due to the following:

CM/2 supports S/36 via only APPC, and does not support Twinaxial connection. Personal Communications supports S/36 via only CUT (Twinaxial only). There is no part to migrate.

Personal Communications does not communicate with S/36 via APPC (CM/2 link).

**Note 11:** The default value is 037-U.

**Note 12:** For 3270, the default for SBCS is 10, for DBCS is 12. For 5250 SBCS, the default is 10. For 5250 DBCS, the default is 12 for Display (terminal) and 10 for Printer session type.

**Note 13:** The default value is 0 (depends on the font size).

**Note 14:** Keyword and value are not migrated. Personal Communications needs also Point and Raster to set FaceName.

**Note 15:** Used only in DBCS systems

If the value is 1, keywords PDTPATH and PDTFILE are also set. IBM5577.PDT is set for PDTFILE.

# AT_KEYBOARD Record

*Table A-11 (Page 1 of 2). AT_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | | | | Keyboard record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |

*Table A-11 (Page 2 of 2). AT_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| COUNTRY | Integer (as follows) 1 = Belgium<br>2 = Canada<br>5 = Denmark<br>8 = France<br>9 = Germany / Austria<br>14 = Italy<br>15 = Latin America<br>16 = Netherlands<br>17 = Norway<br>19 = Portugal<br>20 = Switzerland (French)<br>21 = Switzerland (German)<br>22 = Spain<br>23 = Finland / Sweden<br>27 = United Kingdom<br>28 = United States<br>30 = Brazil<br>50 = Japan (Extended Katakana for 3270)<br>51 = Japan (Katakana for 3270/5250)<br>52 = Japan (English (extended) for 3270/5250)<br>53 = Korea<br>54 = Taiwan | | Language | 1 -> Belgium<br>2 -> Canada (French)<br>5 -> Denmark<br>8 -> N/A<br>9 -> N/A<br>14 -> N/A<br>15 -> Latin-America (Spanish)<br>16 -> Netherlands<br>17 -> Norway<br>19 -> Portugal<br>20 -> Switzerland (French)<br>21 -> Switzerland (German)<br>22 -> Spain<br>23 -> N/A<br>27 -> N/A<br>28 -> United States<br>30 -> Brazil(275)<br>50 -> Japanese<br>51 -> Japanese<br>52 -> Japanese<br>53 -> N/A<br>54 -> N/A | Keyboard | Country | 3 |

**Note 1:** Must be specified in the response file

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** Keyword and value are migrated if 5574-001 keyboard is physically attached on DBCS machine.

# ENHANCED_KEYBOARD Record

*Table A-12 (Page 1 of 3). ENHANCED_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | | | | Keyboard record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |

## Keyword Mapping from CM/2

*Table A-12 (Page 2 of 3). ENHANCED_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| COUNTRY | Integer (as follows) 1 = Belgium<br>2 = Canada<br>3 = Czech (Slovak)<br>4 = Czech (Czech)<br>5 = Denmark<br>6 = France (1D 120)<br>7 = France (1D 189)<br>9 = Germany / Austria<br>10 = Hungary<br>11 = Iceland<br>12 = Italy (1D 141)<br>13 = Italy (1D 142)<br>15 = Latin America<br>16 = Netherlands<br>17 = Norway<br>18 = Poland<br>19 = Portugal<br>20 = Switzerland (French)<br>21 = Switzerland (German)<br>22 = Spain<br>23 = Finland / Sweden<br>24 = Turkey<br>25 = United Kingdom (1D 166)<br>26 = United Kingdom (1D 168)<br>28 = United States<br>29 = Yugoslavia<br>30 = Brazil<br>50 = Japan (Extended Katakana for 3270)<br>51 = Japan (Katakana for 3270/5250)<br>52 = Japan (English (extended) for 3270/5250)<br>53 = Korea<br>54 = Taiwan<br>122 = IBM Host-connected 122-key keyboard (US/Canada)<br>123 = IBM Host-connected 122-key keyboard (France) | | Language | 1 -> Belgium<br>2 -> Canada (French)<br>3 -> Slovakia<br>4 -> Czech<br>5 -> Denmark<br>6 -> France(120)<br>7 -> France(189)<br>9 -> N/A<br>10 -> Hungary<br>11 -> Iceland<br>12 -> Italy(141)<br>13 -> Italy(142)<br>15 -> Latin-America (Spanish)<br>16 -> Netherlands<br>17 -> Norway<br>18 -> Poland<br>19 -> Portugal<br>20 -> Switzerland (French)<br>21 -> Switzerland (German)<br>22 -> Spain<br>23 -> N/A<br>24 -> Turkey(179)<br>25 -> United Kingdom(166)<br>26 -> United Kingdom(168)<br>28 -> United States<br>29 -> N/A<br>30 -> Brazil(275)<br>50 -> Japanese<br>51 -> Japanese<br>52 -> Japanese<br>53 -> N/A<br>54 -> N/A<br>122 -> United States<br>123 -> France(251) | Keyboard | Country | 3 |

*Table A-12 (Page 3 of 3). ENHANCED_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| KEYBOARD_LAYOUT | 0 = Standard type 1 = Personal Communications/ 3270 type | 0 | DefaultKeyBoard | CMxxx_x.KMP if value is 0 | Keyboard | Keyboard layout | 4 |

**Note 1:** Must be specified in the response file

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** Keyword and value are migrated if PS/2 type keyboard is physically attached on SBCS machine. Keyword and value are migrated if 5574-002/003 keyboard is physically attached on DBCS machine.

**Note 4:**

CMxxx_x:
CM101_3.KMP if package is Personal Communications 3270
CM101_5.KMP if package is Personal Communications AS400
CM101_C.KMP if package is Personal Communications 5250+3270
CM122_3.KMP if package is Personal Communications 3270 and CM/2 value is 122 or 123
CM122_5.KMP if package is Personal Communications AS400 and CM/2 value is 122 or 123
CM122_C.KMP if package is Personal Communications 5250+3270 and CM/2 value is 122 or 123

0 is set to IBMDefaultKeyboard keyword at Keyboard section when DefaultKeyboard keyword is set.

# 106_ENHANCED_KEYBOARD Record

*Table A-13. 106_ENHANCED_KEYBOARD record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters | N/A | | | | Keyboard record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| COUNTRY | Integer (as follows) 50 = Japan (Extended Katakana for 3270)<br>51 = Japan (Katakana for 3270/5250)<br>52 = Japan (English (extended) for 3270/5250)<br>53 = Korea<br>54 = Taiwan | | Language | 50->Japanese<br>51->Japanese<br>52->Japanese<br>53->N/A<br>54->N/A | Keyboard | Country | 3 |

**Note 1:** Must be specified in the response file

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** Keyword and value are migrated if 5574-A01 keyboard is physically attached on DBCS machine.

# SDLC_DLC Record

*Table A-14 (Page 1 of 2). SDLC_DLC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **section** | | |
| NAME | 0-1 (0-127 for ISDN) | N/A | Adapter (if 0 or 1), Not supported (if 2-) | 0-1 | SDLC or SDLC5250 | Adapter number | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 0-1 (0-127 for ISDN) | N/A | | | | Copy the record specified to the NAME specified | 2 |
| ISDN | 0 or N = NO, 1 or Y = YES | 0 | | | | Using ISDN | 3 |

## Keyword Mapping from CM/2

*Table A-14 (Page 2 of 2). SDLC_DLC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **section** | | |
| MAX_I_FIELD_SIZE | Integer (265 - 4105) | 1033 | MaxSegmentSize | Integer (265 - 2057) | SDLC or SDLC5250 | Maximum I-field size | 4 |
| SEND_COUNT | Integer (1 - 7) | 7 | TxPoolSz | CM/2 value | SDLC or SDLC5250 | Send window count | |
| RECEIVE_COUNT | Integer (1 - 7) | 7 | RxPoolSz | CM/2 value | SDLC or SDLC5250 | Receive window count | |
| LINE_TYPE | Integer (1 - 2)<br>1 = Switched<br>2 = Non-switched | Note 5 | Switched | 0 if CM/2 value is 2 | SDLC or SDLC5250 | Line type | 6 |
| LINK_STATION_ROLE | Integer (1 - 3)<br>1 = Secondary<br>2 = Primary<br>3 = Negotiable | 3 | | Secondary only | | Link station role | |
| LINE_MODE | Integer (1 - 2)<br>1 = Half Duplex<br>2 = Full Duplex | 1 | ContinuousCarrier | 1 if CM/2 value is 2,<br>0 if CM/2 value is 1 | SDLC or SDLC5250 | Line mode | |
| NRZI | 0 or N = NO, 1 or Y = YES | 1 | NrziEncoding | CM/2 value | SDLC or SDLC5250 | Non Return to Zero Inverted | |
| MODEM_RATE | Integer (1 - 2)<br>1 = Full speed<br>2 = Half speed | 1 | HalfSpeed | 1 if CM/2 value is 2,<br>0 if CM/2 value is 1 | SDLC or SDLC5250 | Modem rate | |
| LOCAL_STATION _ADDRESS | 2 hex characters (01 - FE) | 01 | StationID | CM/2 value | SDLC or SDLC5250 | Local station address | |

**Note 1:** Keyword and value must be specified in the response file.

If CM/2 value is greater than 1, Personal Communications communication cannot be used.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** If CM/2 value is Yes, Personal Communications communication cannot be used.

**Note 4:** 2057 is set if CM/2 value is greater than 2057.

**Note 5:** The default for LINE_TYPE is

1. (switched) if adapter number (NAME) is 0 or 1
2. (non-switched) if adapter number (NAME) is greater than 1

LINE_TYPE must have a value of 2 (non-switched) if adapter number is greater than 1.

**Note 6:** If CM/2 value is 1, Personal Communications communication cannot be used.

# LAN_DLC Record

*Table A-15 (Page 1 of 2). LAN_DLC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 0-1 | N/A | Adapter | CM/2 value | SLAN or SLAN5250 | Adapter number | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| ADAPTER_TYPE | Integer (1 - 3)<br>1 = IBM PC Network<br>2 = IBM Token-Ring Network<br>3 = ETHERAND Network | 2 | | | | Network Adapter type | 3 |
| MAX_I_FIELD_SIZE | 3 to 5 numeric characters<br>(265-1929) for ADAPTER_TYPE = 1<br>(265-16393) for ADAPTER_TYPE = 2<br>(265-1417) for ADAPTER_TYPE = 3 | Note 4 | TransmitFrameSize and ReceiveBufferSize | 265 - 2042 | SLAN or SLAN5250 | Maximum I-field size | 5 |

*Table A-15 (Page 2 of 2). LAN_DLC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| LOCAL_SAP | 2 hex characters (04-9C) (Must be divisible by 4) | 04 | SourceSAP | CM/2 value | SLAN or SLAN5250 | Local Sap | |
| **Note 1:** Keyword and value must be specified in the response file. | | | | | | | |
| **Note 2:** Keyword and value are not migrated, but handled as same as CM/2. | | | | | | | |
| **Note 3:** Keyword and value are not migrated, but used when TransmitFrameSize and ReceiveBufferSize are set. | | | | | | | |
| **Note 4:** Default for MAX_I_FIELD_SIZE is 1417 when ADAPTER_TYPE = 3, 1929 otherwise. | | | | | | | |
| **Note 5:** 2042 is set if CM/2 value is greater than 2042. | | | | | | | |

# TWINAX_DLC Record

*Table A-16. TWINAX_DLC record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| DELETE | N/A | N/A | | | | Delete this record | 1 |
| MAX_I_FIELD_SIZE | Integer (265 - 4105) | 1033 | TransmitFrameSize and ReceiveBufferSize | Integer (265 - 2057) | TDLC5250 | Maximum I-field size | 2 |
| CONTROLLER_ ADDRESS | Integer (0 - 6) | 0 | StationAddress | CM/2 value | TDLC5250 | Controller address | |
| ADAPTER_TYPE | Integer (1 - 4)<br>1 = IBM System/36,38 Workstation<br>2 = Enhanced 5250<br>3 = 5250 Emulator Adapter/A<br>4 = 5250 Emulator PCMCIA Adapter | 1 | | | | Adapter type | 3 |
| IO_PORT | 2 hex characters (40 - 7F) | 71 | IOAddr | CM/2 value | Enh5250-EMAdapter | I/O Port | 4 |
| INT_LEVEL | Integer (2 - 7) | 5 | IntLevel | 02 - 07 | Enh5250-EMAdapter | Hardware interrupt level | 4 |
| SHARED_RAM _LOCATION | Integer (1 - 3)<br>1 = Use first available address<br>2 = CC000<br>3 = DC000 | 1 | MemAddr | 00 if CM/2 value is 1,<br>CC if CM/2 value is 2,<br>DC if CM/2 value is 3 | Enh5250-EMAdapter | Shared RAM location | 4 |
| **Note 1:** Keyword and value are not migrated, but handled as same as CM/2. | | | | | | | |
| **Note 2:** 2057 is set if CM/2 value is greater than 2057. | | | | | | | |
| **Note 3:** Keyword and value are not migrated, but used when the following keywords and values are handled. | | | | | | | |
| **Note 4:** Keyword and value are migrated if ADAPTER_TYPE = 2. The value is put into PCSTDLC.DAT file. | | | | | | | |

# 3270_CONNECT Record

*Table A-17 (Page 1 of 2). 3270_CONNECT record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| SHARED_RAM _LOCATION | Integer (1-4)<br>1 = CE000<br>2 = D0000<br>3 = D2000<br>4 = D4000 | 1 | BufferAddress | CE if CM/2 value is 1,<br>D0 if CM/2 value is 2,<br>D2 if CM/2 value is 3,<br>D4 if CM/2 value is 4 | CNDFT | Adapter Address; used with all DFT sessions | |

*Table A-17 (Page 2 of 2). 3270_CONNECT record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| CREDIT_CARD _ADAPTER | 0 or N = NO, 1 or Y = YES | 0 | CCA | CM/2 value | CNDFT | Use the 3270 credit card (PCMCIA) adapter for DFT sessions. | |

# LOCAL_CP Record

*Table A-18. LOCAL_CP record (LOCAL_CP=)*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 3-17 SNA Type A characters (fully qualified - *netid.name*) | N/A | LocalLU | CM/2 value | 5250 | Local CP name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| CP_ALIAS | 1 to 8 ASCII characters | none | | | | CP alias | 3 |
| NODE_ID | 5 hexadecimal characters (00000 - FFFFF) or 8 hexadecimal characters (00000000 - FFFFFFFFF) | 05D00000 | BlockID and PuID (SDLC), or Identifier (SLAN) | if value is xxxyyyyy, BlockID = xxx, PuID = yyyyy (SDLC), Identifier = xxxyyyyy (SLAN) | SDLC or SLAN | Node ID | 4 |
| NODE_TYPE | Integer (2-3) 2 = NN (Network Node) 3 = EN (End Node) | 3 | | | | Node type | 5 |
| **Note 1:** Value is also set to CPName keyword in SLAN5250, SDLC5250, or TDLC5250 record if Personal Communications communication is used. | | | | | | | |
| **Note 2:** Keyword and value are not migrated, but handled as same as CM/2. | | | | | | | |
| **Note 3:** Keyword and value are not migrated. If the value is same as the value of LOCAL_LU keyword in 5250_SESSION, this LOCAL_CP record is migrated. | | | | | | | |
| **Note 4:** If only 5 hexadecimal digits are specified, the value is prefixed with '05D'. | | | | | | | |
| **Note 5:** If the value is 2, Personal Communications communication cannot be used. | | | | | | | |

# LOGICAL_LINK Record

*Table A-19 (Page 1 of 2). LOGICAL_LINK record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 SNA Type A characters | N/A | | | | Logical link name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 SNA Type A characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| DLC_NAME | ASCII characters, one of the following: SDLC IBMIDLC IBMTRNET ETHERAND IBMPCNET X25DLC TWINAX | none | Link | sdlc if value is SDLC slan if value is IBMTRNET, ETHERAND, IBMPCNET tdlc if value is TWINAX | Communi-cation | DLC name | 3 |
| CP_CP_SESSION _SUPPORT | 0 or N = NO, 1 or Y = YES | 0 | | | | CP-CP session support | 4 |
| ADAPTER_NUMBER | Integer (0 - 255) | 0 | | | | Adapter number | 5 |

*Table A-19 (Page 2 of 2). LOGICAL_LINK record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| DESTINATION _ADDRESS | 12 hex digit MAC address optionally followed by a 2 hex digit SAP address | none | GatewayAddress | CM/2 value | SLAN or SLAN5250 | Destination address | 6 |
| FQ_ADJACENT_CP _NAME | 3 to 17 SNA Type A characters, must be a fully-qualified (netid.name) | none | PartnerLU | CM/2 value | 5250 | Fully qualified adjacent CP name | 7 |
| NODE_ID | 5 hexadecimal characters (00000 - FFFFF) or 8 hexadecimal characters (00000000 - FFFFFFFFF) | 05D00000 | BlockID and PuID (SDLC), or Identifier (SLAN) | if value is xxxyyyyy, BlockID = xxx, PuID = yyyyy (SDLC), Identifier = xxxyyyyy (SLAN) | SDLC or SLAN | Node ID | 8 |

**Note 1:** Must be specified in the response file

Keyword and value are not migrated. If the value is same as the value of HOST_LINK_NAME keyword in 3270_SESSION record, this LOGICAL_LINK record is migrated.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** If the value is IBMIDLC or X25DLC, Personal Communications communication cannot be used.

According to the value, appropriate DLC record is migrated.

**Note 4:** If the value is Yes, Personal Communications communication cannot be used.

**Note 5:** Must be specified in the response file

Keyword and value are not migrated. If the value is same as the value of NAME keyword in LAN_DLC or SDLC_DLC record, LAN_DLC or SDLC_DLC record is migrated.

**Note 6:** Must be specified in the response file

**Note 7:**

If the value is same as the value of FQ_OWNING_CP_NAME keyword in PARTNER_LU_LOCATION record, this LOGICAL_LINK record is migrated.

**Note 8:**

If only 5 hexadecimal digits are specified, the value is prefixed with '05D'.

# LOCAL_LU Record

*Table A-20. LOCAL_LU record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1 to 8 SNA Type A characters | N/A | LocalLU | CM/2 value | 5250 | Local LU name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1 to 8 SNA Type A characters | N/A | | | | Copy the record specified to the NAME specified | 2 |
| LU_ALIAS | 1 to 8 ASCII characters | same as NAME | | | | LU alias | 3 |

**Note 1:** Must be specified in the response file

If the value is different from the value of NAME keyword in LOCAL_CP record, the keyword and value are migrated.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:**

Keyword and value are not migrated. If the value is same as the value of LOCAL_LU keyword in 5250_SESSION record, this LOCAL_LU record is migrated.

# PARTNER_LU Record

*Table A-21. PARTNER_LU record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1 to 17 SNA Type A characters (*name* or *netid.name*) | N/A | | | | Partner LU name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1 to 17 SNA Type A characters (*name* or *netid.name*) | N/A | | | | Copy the record specified to the NAME specified | 2 |
| PARTNER_LU_ALIAS | 1 to 8 ASCII characters | NAME (without *netid*) | | | | Partner LU alias | 3 |

**Note 1:**

Keyword and value are not migrated. If the value of PARTNER_LU keyword in 5250_SESSION record is a fully-qualified name, and the value is same as the value of this keyword, this PARTNER_LU record is migrated.

If the value of this keyword is same as the value of NAME keyword in PARTNER_LU_LOCATION record, PARTNER_LU_LOCATION record is migrated.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:**

Keyword and value are not migrated. If the value of PARTNER_LU keyword in 5250_SESSION record is not a fully-qualified name, and the value is same as the value of this keyword, this PARTNER_LU record is migrated.

# PARTNER_LU_LOCATION Record

*Table A-22. PARTNER_LU_LOCATION record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-17 SNA Type A characters (*name* or *netid.name*), or the keyword **BLANK** when WILDCARD_ENTRY = 1 (FULL) | N/A | | | | Fully-qualified partner LU name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-17 SNA Type A characters (*name* or *netid.name*), or the keyword **BLANK** when WILDCARD_ENTRY = 1 (FULL) | N/A | | | | Copy the record specified to the NAME specified | 2 |
| FQ_OWNING_CP_NAME | 3 to 17 SNA Type A characters, must be fully-qualified (netid.name) | none | | | | Fully qualified owning CP name | 3 |

**Note 1:**

Keyword and value are not migrated. If the value is same as the value of NAME keyword in PARTNER_LU record, this PARTNER_LU_LOCATION record is migrated.

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:**

Keyword and value are not migrated. If the value is same as the value of FQ_ADJACENT_CP_NAME keyword in LOGICAL_LINK record, LOGICAL_LINK record is migrated.

## SRPI_SERVER Record

*Table A-23. SRPI_SERVER record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| NAME | 1-8 alphanumeric characters, or * | N/A | | | | Server record name | 1 |
| DELETE | N/A | N/A | | | | Delete this record | 2 |
| COPY | 1-8 alphanumeric characters, or * | N/A | | | | Copy the record specified to the NAME specified | 2 |
| LONG_SESSION_NAME | 1 to 8 SNA Type A | none | SRPI | 1 if the value is same as the value of LONG_SESSION_-NAME in 3270_SESSION | API | 3270 long session name | 3 |

**Note 1:** Must be specified in the response file

**Note 2:** Keyword and value are not migrated, but handled as same as CM/2.

**Note 3:** Keyword and value are migrated if the value of LOAD_SRPI in WORKSTATION record is Yes.

## WORKSTATION Record

*Table A-24. WORKSTATION record*

| CM/2 | | | Personal Communications | | | Description | Notes |
|---|---|---|---|---|---|---|---|
| **Keyword** | **Values** | **Default** | **Keyword** | **Values** | **Section** | | |
| LOAD_SRPI | 0 or N = NO, 1 or Y = YES | 1 | | | | Load SRPI services | 1 |

**Note 1:** Keyword and value are not migrated. Used when SRPI_SERVER record is processed.

## Keyword Mapping from CM/2

# Appendix B. Deleting Unnecessary Files

If you do not have enough disk space and you want to allocate minimum disk space for Personal Communications, you can delete unnecessary Personal Communications files from the directory where you installed them.

**Attention**

Do not delete any Personal Communications files other than the ones listed below. Otherwise, you will have unpredictable results.

**Notes:**

1. The number of bytes freed might be slightly different from the actual size of the files.
2. You will be able to restore any files from the diskettes when you need to use any functions associated with the files. Use **DECOMP.EXE** (OS/2 program) for compressed files and the OS/2 Copy command for noncompressed files. You will find the **DECOMP.EXE** in the directory where Personal Communications is installed. Type **DECOMP.EXE SourceFile TargetFile** and press **Enter**. The *SourceFile* and *TargetFile* should specify drive, path and file name.
3. You can also delete unnecessary PDT and PDF files in the subdirectory **PDFPDT**.

## Productivity Tools

- Almcopy PM interface

| | KB |
|---|---|
| ACPM.EXE | 84 |
| ACPM.HLP | 22 |
| ACPMDLG.DLL | 19 |
| ACPM.DOC | 4 |

- VM File Transfer

| | |
|---|---|
| ALMCOPY.DOC | 179 |
| ALMCOPY.EXE | 37 |
| ALMCOPY5.EXC | 5 |
| ALMCOPY5.REX | 1 |
| ACXFR56B.MOD | 176 |
| ALMCOPYX.NAM | 8 |
| ALMBEL.MOD | 1 |
| ALMDEN.MOD | 1 |
| ALMFRA.MOD | 1 |
| ALMGER.MOD | 1 |
| ALMITA.MOD | 1 |
| ALMSPA.MOD | 1 |
| ALMSWE.MOD | 1 |
| ALMUK.MOD | 1 |
| ALMUSA.MOD | 1 |
| PCSCOPY.DLL | 113 |

- Profs/Xedit/CMS print utility

| | |
|---|---|
| ZIPPRINT.EXE | 14 |

- EasyRexx HLL

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| | | |
|---|---|---|
| | PCSRXHLL.DOC | 1 |
| | PCSRXHLL.EXE | 2 6 |
| | PCSRXHLL.HLP | 46 |

## Administration Tools

| | | |
|---|---|---|
| - Adapter-Status | | |
| | TOKSTAT.EXE | 4 |
| - Trace | | |
| | PCSMON.EXE | 56 |
| - Maintenance Aid | | |
| | PCSMAINT.EXE | 9 |
| | PCSMTCPY.EXE | 38 |
| - Menu-Bar Customizing Utility | | |
| | PCSCMENU.EXE | 47 |
| - Trace Setup | | |
| | PCSTRSET.EXE | |

## Other Tools

| | | |
|---|---|---|
| - Multiple Session | | |
| | PCSBAT.EXE | 58 |
| - SEND/RECEIVE | | |
| | SEND.EXE | 31 |
| | RECEIVE.EXE | 31 |
| - Shared Folder | | |
| | PCSFLR.EXE | 69 |
| | PCSFLR .IFS | 33 |
| | PCSFLR3.EXE | 1 1 |
| | PCSFLRC.DLL | 9 |
| - Data Transfer | | |
| | PCSFT5.EXE | 296 |
| - PC Organizer | | |
| | PCSPCO.DLL | 45 |
| | PCSPCOC.EXE | 18 |
| - Printer Function Table migration Aid | | |
| | PCSPFC.EXE | 58 |

## Fonts

| | | |
|---|---|---|
| - APL2 Outline Font | | |
| | APL2.AFM | 9 |
| | APL2.PFB | 4 |
| - ENPTUI Font | | |
| | PCSENP.FON | 382 |

## Links

| | | |
|---|---|---|
| - SLAN | | |
| | PCSSLAN.DLL | 66 |
| | PCSSLAN5.DLL | 2 |
| | PCSSLANA.DLL | 2 |
| | PCSSLANP.DLL | 2 |
| - Peer Communication | | |
| | PCSPEER.DLL | 2 |
| - COAX | | |
| | PCSCSDFT.DLL | 36 |
| | PCSCNDFT.DLL | 4 |
| | PCSCOAX.DLL | 24 |
| | PCSCOAX.SYS | 3 |
| | PCSVPD.DLL | 27 |
| - SDLC | | |
| | PCSSDLC.DLL | 6 |
| | PCSSDLC5.DLL | 2 |
| | PCSSDLCA.DLL | 2 |
| | PCSSDLCP.DLL | 2 |
| | PCSSDLC.SYS | 5 |
| | PCSMSDLC.DAT | 1 |
| - HAM | | |
| | PCSHAM.DLL | 29 |
| | PCSHAM.SYS | 47 |
| | PCSHAM5.DLL | 2 |
| | PCSHAMA.DLL | 2 |
| | PCSMHAM.DAT | 4 |
| - ASYNC | | |
| | PCSASCON.DLL | 14 |
| | PCSASYNC.DLL | 56 |
| - TCP/IP | | |
| | PCSTLNET.DLL | 58 |
| | PCSTN52.DLL | 2 |
| - ADLC | | |
| | PCSADLC.DLL | 6 |
| | PCSADLC5.DLL | 2 |
| | PCSADLCC.DLL | 2 |
| - AEA | | |
| | PCSAEA.DLL | 51 |
| - SPX/IPX | | |
| | PCSNWCS.DLL | 61 |
| | PCSNWSAA.DLL | 18 |
| - APPC | | |
| | PCSAP32.DLL | 43 |
| | PCSAP3S.DLL | 42 |
| | PCSAPPC.DLL | 65 |
| - RUI | | |
| | PCSRUI.DLL | 33 |
| - TDLC | | |
| | PCSCUT52.DLL | 34 |
| | PCSTDLC.DLL | 42 |
| | PCSTDLC5.DLL | 1 |
| | PCSTDLCP.DLL | 1 |
| | PCSTDLC.SYS | 74 |
| | PCSTDLC.DAT | 3 |
| | PCSTDBOT.LEX | 9 |

| | |
|---|---|
| PCSTDOCM.LEX | 15 |

## Link Utility

- Auto Dial

| | |
|---|---|
| PCSADU.DLL | 89 |
| PCSDIAL.DLL | 51 |
| PCSMODEM.DAT | 12 |

## Helps/README

- Help

| | |
|---|---|
| PCSHELP.HLP | 643 |
| PCSINST.HLP | 25 |

- ReadMe

| | |
|---|---|
| README.ICO | 1 |
| README.INF | 47 |
| PCOM.INF | 15 |

# Glossary

## A

**access control profile**. A list of the access privileges assigned to users and groups for a network resource in a domain.

**access priority**. In the IBM Token-Ring Network, the maximum priority a token can be given by the adapter for transmission.

**ACF/NCP**. See *Advanced Communication Function for the Network Control Program*.

**ACF/TCAM**. See *Advanced Communication Function for the Telecommunications Access Method*.

**ACF/VTAM**. See *Advanced Communication Function for the Virtual Telecommunications Access Method*.

**adapter**. A hardware component that must be installed in the personal computer to connect to the SDLC, LAN, asynchronous, DFT, or other communication attachment (possibly connecting through a modem).

**Advanced Communication Function for the Telecommunications Access Method (ACF/TCAM)**. A network host communication program.

**Advanced Communication Function for the Network Control Program (ACF/NCP)**. A network host communication program.

**Advanced Communication Function for the Virtual Telecommunications Access Method (ACF/VTAM)**. A network host communication program.

**Advanced Program-to-Program Communications (APPC)**. An LU 6.2 logical unit protocol implementation of SNA that lets interconnected systems share programming tasks.

**AID key**. A control key that generates a host attention interrupt.

**American National Standard Code for Information Interchange (ASCII)**. A character set standard established by the American National Standards Institute, using a set of 7-bit binary-coded characters (8 bits including parity check). ASCII is used for information interchange among data processing systems, data communication systems, and associated equipment. An extended, 8-bit version of this code is used in the personal computer. It consists of control characters and graphic characters in addition to the 7-bit ASCII characters. See also *extended binary-coded decimal interchange code*.

**American National Standards Institute (ANSI)**. An organization that promotes industry standards for the Computer and Business Equipment Manufacturers Association.

**ANSI**. See *American National Standards Institute*.

**API**. See *application programming interface*.

**APL**. A programming language requiring the use of a special keyboard to represent various operator symbols.

**APPC**. See *Advanced Program-to-Program Communications*.

**application programming interface (API)**. A defined programming language interface between an IBM system control program or an IBM-licensed program and the program user.

**ASCII**. See *American National Standard Code for Information Interchange*.

**ASYNCH**. See *Asynchronous Data Link Control*.

**Asynchronous Data Link Control (ASYNCH)**. A discipline for managing asynchronous, serial-by-bit information transfer over a line connection.

**asynchronous transmission**. A data communication method wherein character strings of variable length are transmitted serially at a variable transmission rate. Each character or defined block of characters has a constant transmission duration.

**atom**. Represents a character string that has been reduced to a unique integer value.

**attention identifier**. See *AID key*.

**attachment**. A communication link used by Personal Communications to connect a personal computer to a host system, consisting of an adapter and controlling software.

**audit trail**. A history of network activity on a server.

**automatic access utility**. A utility that allows you to create and edit the files that control the automatic-dial, automatic-logon, and modem control programs.

**autoskip**. A field defined as protected **and** numeric. Causes the cursor to skip to the next unprotected field.

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# B

**backup diskette**. A diskette that contains information copied from a Personal Communications diskette.

**base-color mode**. The mode in which a terminal operates if the host system does not supply color information.

**Basic Input/Output System (BIOS)**. The microcode that controls basic hardware operations, such as interactions with the diskette drive and the keyboard.

**batch file**. In IBM DOS, a file containing commands to be processed sequentially. A DOS batch file must have a **.BAT** extension in order to be executable.

**binary**. Pertaining to the base two system of numbers. The binary digits are 0 and 1. Executable files are generally in binary format rather than the character string format that text files are composed of.

**BIOS**. See *Basic Input/Output System*.

**bis**. German (Federal Republic) preliminary standard.

# C

**Caps Lock**. The personal computer keyboard mode entered after the **Caps Lock** key is pressed. This mode is indicated by a capital A in the operator information area (OIA). When the **Shift key** is pressed while in this mode, **Caps Lock** is temporarily discontinued and the OIA indicator changes. Pressing the **Shift** key again returns the Caps Lock mode.

**character cell**. The maximum physical boundary of a character on a display screen.

**character set**. A finite group of characters defined for a keyboard or output device.

**CICS/VS**. See *Customer Information Control System for Virtual Storage*.

**code page**. (1) A table that defines a coded character set by assignment of a character meaning to each code point in the table for a language or a country. (2) A mapping between characters and their internal binary representation.

**configuration**. (1) The arrangement of a computer system or network as defined by the nature, number, and chief characteristics of its functional units. (2) In Personal Communications, the arrangement of personal computers connected to one or more host systems by one or more attachment types. Examples are: SDLC, LAN, ASYNCH, X.25, or DFT.

**configuration file**. In DOS, a file read at system boot that defines devices, features, and communication parameters, and sets values used by programs on the system. The configuration file is named **CONFIG.SYS**, and must be found in the root directory along with **COMMAND.COM** in order to be read.

**continuous carrier**. A characteristic of the modem used in an SDLC type of attachment; frequency capable of being modulated or impressed with a second (informative carrier) signal.

**control unit**. A device that manages the flow of data between personal computers used with Personal Communications and a host system.

**CSD**. Corrective service diskette.

**Customer Information Control System for Virtual Storage (CICS/VS)**. A general-purpose licensed program that controls online communication between terminal users and a database.

**customization**. The process of configuring one or more personal computers connected to a host system by the SDLC, LAN, ASYNCH, X.25, DFT, or other attachment. Customization precedes Personal Communications installation and includes the definition of the sessions to be carried out by Personal Communications.

# D

**default**. A value, attribute, or option that is assumed when no differing selection is made.

**definition file**. A file loaded by default that contains keyboard and screen color characteristics that can be adapted for a particular session. The lines of a definition file must be coded according to a strict layout.

**delimiter**. In the IBM Token-Ring Network, a bit pattern that defines the limits of a frame or token.

**DFT**. See *distributed function terminal*.

**diacritic key**. A key that allows a character to be entered without the cursor position being changed. When you enter an accent mark or a tilde, for example, the cursor does not advance to the next position until you enter the corresponding alphabetic character.

**dial-up line**. See *switched line*.

**direct memory access (DMA)**. A method of transferring data directly between main storage and I/O devices. The data is not processed by a control unit.

**distributed function terminal (DFT)**. A terminal that supports multiple concurrent logical terminal sessions.

**distributed function terminal attachment**. The connection of a personal computer with an IBM 3174 or 3274 Control Unit using a coaxial cable and software that provides DFT capabilities.

**directory**. A named hierarchical grouping of files in a file system.

**DMA**. See *direct memory access*.

**domain**. A set of servers that allocate shared network resources within a single logical system.

**DOS session**. A session in which a personal computer operates as a stand-alone computer, running under Disk Operating System (DOS). See *host session*.

**download**. The transfer of a file from a host system to a personal computer.

**dynamic data exchange (DDE)**. A protocol that allows applications to exchange data.

# E

**EBCDIC**. See *extended binary-coded decimal interchange code*.

**ECF**. See *Enhanced Connectivity Facilities*.

**EGA**. See *enhanced graphics adapter*.

**EHLLAPI**. See *Emulator High-Level Language Application Programming Interface*.

**EMM**. See *Expanded Memory Manager*.

**EMS**. See *Expanded Memory Specification*.

**emulator**. A program that allows a device to operate as if it were a different type of device. Personal Communications, for example, allows supported personal computers and printers to operate as if they were 3270-series workstations.

**Emulator High-Level Language Application Programming Interface (EHLLAPI)**. A programming interface that permits workstation-based programs to access host computer presentation space.

**Enhanced Connectivity Facilities (ECF)**. An IBM communication utility that provides the ability to share resources between workstations and host systems.

**enhanced graphics adapter (EGA)**. An adapter, such as the IBM Enhanced Graphics Adapter, that provides high-resolution graphics, allowing the use of a color display for text processing as well as graphics applications.

**EOF**. End of Field

**EOT**. End of Text

**error log**. A file that stores error information for later access.

**exit function**. A function that allows the user to switch from a host session to a DOS session. The key sequence for exit is **Ctrl+End**.

**Expanded Memory Manager (EMM)**. A standard device driver that manages expanded memory in 16-KB logical pages. The EMM maps a set of logical pages into a page frame using the physical address space that is available in memory above 640 KB, storing the map into conventional memory. The application then accesses the expanded memory thus created as though it were conventional memory.

**Expanded Memory Specification (EMS)**. A specification for accessing memory above the conventional DOS memory address space, 0–640 KB. See *Expanded Memory Manager*, *LIM EMS 3.2*, and *LIM EMS 4.0*.

**extended binary-coded decimal interchange code (EBCDIC)**. The standard code, using a character set consisting of 8-bit coded characters, used by Personal Communications for information interchange between personal computers and a host system. See also *American National Standard Code for Information Interchange*.

**extended-color mode**. The mode in which a terminal operates if the host system supplies color information.

**extended error code**. An 8-byte data string returned by **Query System** generated by an internal system error that is used by service personnel for diagnosis.

**extended memory**. Memory above 1 MB that can be accessed and used by 80286 and 80386** (or greater) CPUs to run applications in protected mode. PC DOS does not normally access memory above 640 KB. This memory is useful only for applications that are written specifically to use extended memory. Successful use of extended memory by an application usually requires the use of an 80386 or greater CPU, which provides machine instructions to handle the use of extended memory.

**external resource**. A file, directory, or device supplied by a server outside the current domain.

# F

**field**. (1) An area in a record or panel used to contain data. (2) In the IBM 3270 data stream, a group of consecutive positions on a presentation space having similar characteristics that are defined by a field attribute byte at the beginning of the field.

**field delimiters**. Symbols (often brackets) that indicate the limits of a data entry field.

**file mode**. In VM/CMS, the third field of the file identifier, which indicates the assigned virtual disk wherein the file resides.

**file type**. In VM/CMS, the second field of the file identifier. The file type can be arbitrary, or of significance to the system (for example, SCRIPT, LIST3270, and NOTEBOOK file types).

**fixed disk**. See *hard disk*.

**flag**. A character or bit sequence that marks an occurrence or boundary, such as the end of a word or the beginning or end of a data transmission block.

**frame**. A data structure (data frame) composed of fields meeting the field specifications of a type of communication protocol. Frames are used to control data transfer across a data link.

In SDLC, a frame is a sequence of bits delimited by an opening and closing flag. In X.25 packet switching data networks, frames are composed of 8-bit byte sequences delimited by beginning and ending flags; the frames in X.25 control various functions, data transfer, and transmission checking.

# G

**gateway**. A station in a local area network through which a connection to a host system or a separate network is established.

**gateway status utility**. A utility that allows a user to check the status of sessions in a gateway network.

**GDDM**. See *Graphical Data Display Manager*.

**GDDM-PCLK**. A personal computer application program that supports host GDDM graphics applications. This application requires an LLAPI interface for PC/3270.

**Graphical Data Display Manager (GDDM)**. An IBM host function that processes text and graphics for output to a display, printer, or graphic output device.

# H

**hard disk**. A rigid-magnetic disk such as the internal disks used in the system units of personal computers and in external hard disk drives (also known as fixed disks).

**High-Level Language Application Programming Interface (HLLAPI)**. A software product that supports interaction between a host program and an application program running on a personal computer in terminal emulation (usually 3270 terminal emulation).

**HLLAPI**. See *High-Level Language Application Programming Interface*.

**host address**. A LAN address used by the host controller.

**host code page**. The character code page used by the host system to which a gateway connects.

**host print**. A printer session on a local personal computer directed by the host system.

**host profile**. A configuration profile that identifies a gateway by name, and establishes LU addresses and types for connected logical units.

**host session**. A logical connection that enables a personal computer to communicate with a host system. A session can be identified by LU address, LT number, or session ID. See *DOS session*. See also *logical terminal*.

**host short name**. See *short name*.

**host system**. In Personal Communications, the computer linked to one or more personal computers by the SDLC, LAN, ASYNCH, X.25, or DFT attachment.

**hot key**. A keystroke or keystroke combination that initiates the hotkey function. See *hotkey function*.

**hotkey function**. A function that allows you to switch to the next logical terminal or DOS, on whichever screen it last appeared, without exiting the current application.

# I

**IBM NCP Packet Switching Interface (NPSI)**. A host program used for interconnecting systems using switched lines. See also *switched line*.

**IBM PC Network**. A local area network providing peer-to-peer communication among IBM personal computers, allowing them to share resources. It utilizes carrier sense multiple access/collision detect

(CSMA/CD) protocol and supports a data transmission rate of 2 million bits per second. Broadband and baseband versions are available.

**IBM Token-Ring Network**. A general-purpose baseband token-ring local area network for interconnecting information processing equipment at a local site. It uses a token-ring access protocol and supports a data rate of either 4 or 16 million bits per second. It conforms to the IEEE 802.5 (token-ring) and IEEE 802.2 (logical link control) standards.

**IBM X.25 NCP Packet Switching Interface Program**. A network host communication product that allows workstations using an IBM 3725 or IBM 3720 communication controller to connect to a ITU-TS X.25 recommendation packet-switching data network.

**idles**. In a token-ring network, the signals sent when neither frames nor tokens are being transmitted.

**IEEE**. See *Institute of Electrical and Electronics Engineers*.

**IEEE 802.2**. An IEEE standard for logical link control in local area networks.

**initial program load (IPL)**. The initialization procedure that starts an operating system, or the process of loading programs and preparing a system to run jobs.

**installation**. In Personal Communications, the process of loading microcode from the Personal Communications diskettes.

**Institute of Electrical and Electronics Engineers (IEEE)**. An organization that establishes and promotes standards in related industries.

**integrated services digital network**. A digital end-to-end telecommunication network that supports multiple services including, but not limited to, voice and data.

**interleave**. In Personal Communications, to arrange parts of a transmission sequence so that they are interspersed with parts of one or more other transmission sequences of the same nature, with each sequence retaining distinct meaning and identity. See also *packet-switching data network* and *X.25 Recommendation*.

**International Telecommunication Union (ITU)**. The specialized telecommunication agency of the United Nations, established to provide standardized communication procedures and practices, including frequency allocation and radio regulations worldwide.

**interrupt level**. A number assigned to an interrupt to indicate priority. The interrupt with the lowest number has the highest priority.

**IPL**. See *initial program load*.

**ISDN**. Integrated services digital network.

**ITU-T**. See *ITU-TS*.

**ITU-TS**. International Telecommunication Union - Telecommunication Standardization Sector. The part of the International Telecommunication Union (ITU) that is reponsible for developing recommendations for telecommunications.

# J

**jump**. To start the jump function.

**jump function**. A switch to the logical terminal session specified.

# K

**key assignment**. The character, numeral, symbol, or function generated when a keyboard key is pressed. All keys have default assignments that can be customized.

**keyboard definition**. Definitions of keyboard keys as stored on one of the Personal Communications diskettes.

**keyboard template**. An overlay placed on a keyboard to explain the function of each key.

# L

**LAN**. See *local area network*.

**leased line**. See *nonswitched line*.

**LIM EMS 3.2**. An expanded memory specification agreed to in 1984 by the computer software manufacturers Lotus**, Intel**, and Microsoft** to access memory above the DOS conventional memory area, 0–640 KB, using an EMM device driver. LIM EMS 3.2 allows an application to store up to 8 MB of data in expanded memory, in 512 logical pages of 16 KB. The EMS 3.2 expanded memory manager maps up to 64 KB of expanded memory in the PC BIOS memory area. See also *LIM EMS 4.0* and *Expanded Memory Manager*.

**LIM EMS 4.0**. An extended expanded memory specification (EEMS) pioneered by AST** Research Corporation as an extension to LIM EMS 3.2 to permit expanded memory to be used for directly executing programs through multitasking, and to expand the areas accessible for mapping expanded memory beyond the conventional memory barrier, up to 1024 KB. The

EEMS was further improved and defined by agreement of Lotus, Intel, and Microsoft corporations to better support windowing and multitasking operating environments. With appropriate hardware support, LIM EMS 4.0 supports up to 32 MB of expanded memory. Its EMM can create page frames up to 896 KB, and up to 2048 logical pages of 16-KB memory.

**line speed**. The speed at which data is transferred over an analog (telephone) line. Line speeds depend on the quality of the line.

**local area network (LAN)**. A data network in which communication is limited to a moderate-size geographic area, such as a single office building, warehouse, or campus, and that does not generally extend across public rights-of-way.

**local copy**. A printer session initiated by a personal computer user or host that reproduces a presentation space with all supported graphics.

**local LU**. A logical unit not distributed over the LAN, but controlled by a gateway personal computer. This is normally a physical device such as a workstation, printer, or terminal.

**logical terminal (LT)**. (1) A terminal with a name related to one or more physical terminals.
(2) The definition of a specific 3270 terminal emulation session. See also *host session*.

**logical terminal ID**. See *logical terminal identifier*.

**logical terminal identifier (LT ID)**. An identifier for the LU type specified in the gateway host profile. In Personal Communications, up to 8 (unchangeable) IDs can be displayed. See *session ID*.

**logical terminal number**. A number used to identify DFT host sessions. A 3270 control unit controls some number of sessions with the host. The control unit then assigns from 1 to 5 of these sessions to a particular coaxial connection and assigns each session an LT number from 1 to 5.

**logical unit (LU)**. A port that provides user access to host and to the SNA network in order to communicate with another user.

**logon**. The process of accessing a domain and assuming a user ID.

**LT**. See *logical terminal*.

**LU 2**. A type of LU for an application program that communicates with a single display workstation in an interactive environment, using the SNA 3270 data stream.

**LU 3**. A type of LU for an application program that communicates with a single printer, using the SNA 3270 data stream.

**LU 6.2**. A type of LU that supports sessions between two applications in a distributed data processing environment using the SNA general data stream, which is a structured-field data stream, or a user-defined data stream.

**LU address**. In Personal Communications, a number from 02 to 254 assigned by the host to represent the remote partner in an SNA session.

# M

**mantissa**. The decimal part of a common logarithm.

**mark**. A symbol or sequence of symbols that indicate the beginning or end of a field, word, data item, or data set.

**menu**. A list of available operations. You select which operation you want from the list.

**messaging name**. A name under which messages can be received.

**modem**. A serial data translator that converts digital signals into analog signals at transmission, and on reception, converts analog signals back into digital signals. Modems are used primarily for telephonic computer communication. Synonymous with modulator/demodulator.

**multiplexer (mux)**. A device capable of interleaving events of two or more activities, or of spreading the events of an interleaved sequence of the multiple activities.

**mux**. See *multiplexer*.

**MVS**. See *Operating System/Virtual Storage Version 2*.

# N

**NA**. Not applicable. When this appears in a calling parameter position, it means that PC400 EHLLAPI does not require this parameter to perform the specific function.

**NCB**. See *network control block*.

**NetBIOS**. Network Basic Input/Output System. In Personal Communications, an interface for application programs (API) between a LAN adapter and a token-ring network.

**netname**. The name used to identify a shared resource on the network.

**network**. A configuration of terminals connected to a host system for information interchange.

**network address**. (1) An address, consisting of subarea and element fields, that identifies a link, a link station, or a network addressable unit. Subarea nodes use network addresses; peripheral nodes use local addresses. (2) In SNA, an address consisting of subarea and element fields that identifies a link, gateway, or network addressable unit (NAU).

**network control block (NCB)**. A part of the network control program that controls the resources used by the communication network in a LAN attachment.

**next-logical-terminal (next-LT) function**. A function that allows the user to switch from one logical terminal to another. The key sequence for next-LT is **Alt+Esc**.

**next-session-active-screen (next-SAS) function**. A function that allows the user to switch to the next logical terminal or to DOS while keeping the same screen in use. The key sequence for next-SAS is **Ctrl+Esc**.

**non-return-to-zero inverted encoding (NRZI)**. A data encoding method that ensures correct synchronization of information in an analog data stream transmission.

**nonswitched line**. A communication line (such as is used in the SDLC attachment) that is permanently connected and does not require dialing to establish communication. Contrast with *switched line*.

**NPSI**. See *IBM NCP Packet Switching Interface Program*.

**NRZI**. See *non-return-to-zero inverted encoding*.

**NUL**. A transmission control character used as a filler or for sequence control in network communication.

**Num Lock**. The keyboard mode entered after the **Num Lock** key is pressed. When the **Shift** key is pressed while in this mode, Num Lock is temporarily discontinued.

# O

**OIA**. See *operator information area*.

**OIA indicator**. Characters or symbols in the operator information area providing information about network, workstation, gateway, or interface status. See also *operator information area*.

**operator information area (OIA)**. The bottom line of a session window that shows information on status and Personal Communications connections.

**Operating System/Virtual Storage Version 2 (OS/VS2)**. A set of commands, subcommands, and operands recognized by the host computer. Synonymous with MVS.

# P

**packet**. A discrete unit of information including addressing and sequence information that can be sent interleaved with other packets of the same and other transmission sequences. Data sent by packet switching protocols, such as the X.25 protocol, do not always arrive in the order sent or even by the same routing on a PSDN.

**packet assembler/disassembler (PAD)**. A program that codes data into packets for transmission and reassembles received packets into the original data format. See also *packet*, *packet-switching data network*.

**packet-switching data network (PSDN)**. A data transmission system consisting of one or more host systems and one or more network stations that communicates using packets of information. The data is sent in interleaved packets to distribute the flow of information and maximize the data transmission capabilities of the network. X.25 is a packet-switching data network communication protocol. See *X.25 network*.

**PAD**. See *packet assembler/disassembler*.

**parity bit**. A binary digit appended to a group of binary digits as needed to make the sum of all the digits either odd (odd parity) or even (even parity).

**PC Network**. See *IBM PC network*.

**PCSDIAL**. A program that automatically dials a host number, permitting a fast connection.

**permanent virtual circuit (PVC)**. A session assigned to a dedicated line telephonic link. See *switched virtual circuit*.

**physical unit identifier (PUID)**. In the gateway status utility, five hexadecimal digits used to identify the network station to the gateway.

**PIU**. Path information unit.

**pooled LUs**. Logical units that share host sessions in a common pool to save system resources.

**POR**. See *power-on reset function*.

**port number**. In DFT attachment, the logical ports assigned to a terminal by a control unit.

**power-on reset (POR) function**. A function that allows the user to reset all logical terminals. The key sequence for POR is **Ctrl+Pause** using the Enhanced or Space Saving keyboards. Otherwise, the sequence is **Ctrl+F2**.

**preallocated LUs**. Logical units only available to a specified network station.

**presentation space**. The host display space for the window.

**presentation space position parameter**. One of the four parameters that you must specify for some EHLLAPI functions. A position in the presentation space from 1 to 3564.

**printer utility**. A utility that allows users to check the status of the printers in their network.

**private application**. An application maintained for use only on one computer or user, that is not available on the network for other users.

**program operator**. The EHLLAPI program that performs and monitors activities in a workstation presentation space.

**programmed symbol set (PS)**. A set of fonts that can be system-defined or defined by the user and to which a code can be assigned.

**protected field**. A field that holds data for viewing; the data cannot be changed (at the current screen) by the user.

**protocol**. A specification for the format and timing of data exchanged between communicating systems. Also, the set of rules governing the operation of units of the communication system to facilitate communication.

**PSDN**. See *packet-switching data network*.

**PSID**. Presentation Space Identifier; a short one-character or one-letter name of the presentation space.

**PU**. Physical unit. See also *physical unit identifier*.

**public application**. An application shared among users on a network.

**PUID**. See *physical unit identifier*.

**PVC**. See *permanent virtual circuit*.

# Q

**queue**. A list of pending tasks for a computer or server to execute in order.

# R

**redefinition file**. See *definition file*.

**refresh function**. The function that refreshes the current screen. The refresh function is useful if a DOS application has overwritten the contents of a host application screen. The key sequence for refresh is **Alt+Del**.

**request**. A message unit that signals initiation of a particular action or protocol. For example, Initiate-Self is a request for activation of an LU-LU session.

**requester**. A computer that accesses shared network resources through a server.

**resource**. A directory (files resource) or device used by computers on a network.

**response time monitor**. A function that measures and displays the host response time

**resume-DOS**. The function that allows the DOS session to run in the background. The key sequence for resume-DOS is **Alt+R**. (In the Netherlands, the sequence is **Ctrl+R**.)

**RS-232C**. A standard established by the Electronic Industries Association for direct linkage for serial data transfer between a computer and peripheral equipment, such as a modem or printer.

**RSAP**. Remote service access point. See *service access point*.

**run book**. A supplemental guide, controlled by a system administrator, that describes the implementation and usage of a specific system configuration.

# S

**SAP**. See *service access point*.

**SAS**. See *session active screen*.

**SDLC**. See *Synchronous Data Link Control*.

**SDLC command**. The control information in the C-field of the link header, sent from a primary station to a secondary station.

**service access point (SAP)**. The gateway address of the controller. An SAP provides a point to link the controller to the host system.

**service coordinator**. The person in your organization responsible for answering hardware and software computing questions.

**session**. (1) A logical connection between a server and a requester that was initiated by a successful request for a shared resource. See also *host session* and *DOS session*. (2) A logical connection between two network addressable units that can be activated, tailored to provide various protocols, and deactivated, as requested.

**session active screen (SAS)**. The display that is active for the current communication session. See also *next-session-active-screen function.*

**session ID**. An alphabetic ID (*a* through *h*) assigned by Personal Communications to each session or screen. This applies to all types of host sessions and is used in file transfers. See also *short name*.

**shared resource**. A directory or device made available to users on a network. A shared resource is attached to a server, but it is not attached to the requesters that use them.

**Shift Lock**. The personal computer keyboard mode entered after the **Shift Lock** key is pressed. In this mode, the keyboard performs the function printed on the upper half of the keytop. Press the **Shift** key to cancel the Shift Lock mode.

**short name**. In Personal Communications, a character displayed in column 7 of the operator information area that shows the session ID. See also *session ID* and *operator information area*.

**SNA**. See *Systems Network Architecture*.

**SNA network**. The part of a user-application network that conforms to the formats and protocols of Systems Network Architecture. It enables reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network addressable units (NAUs), boundary-function components, and the path control network.

**source diskette**. In a diskette copying procedure, the diskette from which information is read.

**suspend-DOS function**. The function that stops the running of the DOS session. The key sequence for suspend-DOS is **Alt+S**. (In the Netherlands, the sequence is **Ctrl+S**.)

**SVC**. See *switched virtual circuit*.

**switched line**. A telephonic communication line on which connections are established by dialing. See also *switched virtual circuit*. Contrast with *nonswitched line*.

**switched virtual circuit (SVC)**. (1) An X.25 circuit that is dynamically established when needed. The X.25 equivalent of a switched line. (2) A virtual circuit that is requested by a virtual call. It is released when the virtual circuit is cleared. Contrast with *permanent virtual circuit (PVC)*.

**switch-screen function**. A function that switches keyboard control to the other screen, if two screens are used. The key sequence for switch-screen is **Alt+Tab**.

**Synchronous Data Link Control (SDLC)**. A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a line connection. Transmission exchanges can be duplex (in both directions at the same time) or half-duplex (in either direction, one direction at a time) over switched lines or direct lines.

**Systems Network Architecture (SNA)**. A set of rules for controlling the transfer of information in a layered protocol structure communication network. The logical structure, formats, protocols, and operating sequences for transmitting data and controlling network configuration and operation are defined.

# T

**target diskette**. In a diskette or storage copying procedure, the diskette onto which information is written.

**template**. See *keyboard template*.

**terminal emulator**. See *emulator*.

**terminal operator**. The human user of a EHLLAPI application program. Contrast with *program operator*.

**Time Sharing Option (TSO)**. A set of commands, subcommands, and operands recognized by the host computer.

**token-ring network**. See *IBM Token-Ring Network*.

**TOKREUI**. A low-level personal computer extended user interface program to access the token-ring adapter. TOKREUI is an acronym that stands for *token-ring extended user interface*.

**TQDOS**. A multitasking DOS interface that is called automatically by Personal Communications to handle service tasks.

**trace size**. See *trace table*.

**trace table**. A storage area that contains the records of all Personal Communications operations. The trace information can either be directed to the standard output destination, or it can be redirected to a file.

**transaction program**. A program that processes transactions in an SNA network. There are two kinds of transaction programs: application transaction programs and service transaction programs.

**transferring files**. Sending files from a personal computer to a host system or vice versa. See *download* and *upload*.

**TSO**. See *Time Sharing Option*.

# U

**UID**. See *user identifier*.

**unprotected field**. A field that is available for the user to enter or modify data.

**upload**. The transfer of a file from a personal computer to a host system.

**user ID**. See *user identifier*.

**user identifier (UID)**. A name that uniquely identifies a user on a network or system.

**user profile**. A file containing values for setting up the user environment, and that can be automatically accessed when a user logs on.

**utility programs**. Programs that support operations of Personal Communications, such as file transfer and keyboard redefinitions.

# V

**V.24**. A 2400 bps ITU-TS communication protocol.

**V.35**. A 64 Kbps ITU-TS communication protocol.

**valid key**. A key that is recognized by the host session.

**VGA**. See *video graphics adapter*.

**video graphics adapter (VGA)**. A computer adapter that provides high-resolution graphics and a total of 256 colors. See also *enhanced graphics adapter (EGA)*.

**virtual machine (VM)**. A time sharing control program.

**VM**. See *virtual machine*.

**VM/CMS**. See *Virtual Machine/Conversational Monitoring System*.

**Virtual Machine/Conversational Monitoring System (VM/CMS)**. A time sharing system control program that manages the resources of an IBM System/370 such that multiple remote terminal users have a functioning simulation of a computing system at their disposal. The Conversational Monitoring System provides general time sharing, development, and problem-solving facilities.

**Virtual Telecommunications Access Method (VTAM)**. A host program for communication using switched lines. See also *switched line*.

**virtual route (VR)**. (1) A path between a data source and a data sink that can be created in various circuit configurations during the transmission of packets or messages. (2) In SNA, a logical connection between two subarea nodes that is physically an explicit route, or a logical connection that is contained entirely within a subarea node. See also *Systems Network Architecture* and *packet-switching data network*.

**VR**. See *virtual route*.

**VS**. Virtual storage.

**VTAM**. See *Virtual Telecommunications Access Method*.

# W

**WAN**. See *wide area network*.

**wide area network (WAN)**. A network that provides data communication capability in geographic areas larger than those serviced by local networks.

# X

**X.21 bis**. A preliminary German (Federal Republic) modem communication specification.

**X.25 network**. A packet-switching data network linked in accordance with ITU-TS recommendation X.25.

**X.25 Recommendation**. An ITU-TS recommendation for the interface between data terminal equipment using packet switching data networks.

**X.400**. An electronic mail addressing and address directory control system established by the IEEE, designed to facilitate electronic mailing between otherwise independent data networks.

**XID**. SNA exchange identifier command. See also *Systems Network Architecture*.

# Numbers

**3270 numeric field**. A display field that accepts only numerics (0–9), a minus sign, a period, a comma, and DUP keyboard entries.

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