

Personal Communications
Version 4.3 for OS/2



Quick Beginnings

Personal Communications
Version 4.3 for OS/2



Quick Beginnings

Note:

Before using this information and the product it supports, be sure to read the general information under "Appendix F. Notices" on page 165.

First Edition (September 2000)

This edition applies to Version 4.3 of Personal Communicaitons for OS/2, and to all subsequent releases and modifications until otherwise indicated in new editions.

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About This Book

This book describes how to install, configure, and start Personal Communications. After you get Personal Communications up and running and begin to perform various tasks, use online help.

This book is for users of IBM Personal Communications Version 4.3 for OS/2; this product supports connections to AS/400, S/390, and S/3X hosts. In this publication, the following terms are used to denote functions unique to the particular host environment:

PC400 AS/400 host

PC/3270 S/390 host

See “What’s in the Packages” on page xii for information regarding what is in each package.

The windows in this book are representative of ones that you might see while working with Personal Communications. Minor variations could occur between what you see on your display and what is in the book.

Text Conventions Used in This Book

This book uses the following text conventions:

UPPERCASE

Uppercase indicates commands, program keywords, and default values. You can enter these values in uppercase or lowercase.

Bold Bold type indicates the names of window controls, such as lists, check boxes, entry fields, menu choices, and push buttons.

Italics Italics indicate:

- Special emphasis in text or a reference citation.
- Variables that you supply a value for.

Example type

Example type indicates information that the user is instructed to type at a command prompt or in a window.

This book also uses *icons* (pictures) in the text to help you find different types of information.



This icon represents a note, important information that can affect the operation of Personal Communications or the completion of a task.



This icon represents a hint or additional information that can help you complete a task.

What's in the Packages

IBM Personal Communications Version 4.3 provides a CD-ROM containing IBM Personal Communications Version 4.3 for OS/2, which provides 3270 and 5250 emulation and connections to S/390, AS/400, and S/3X host systems; it also contains:

- Certain corequisite products to use with the Personal Communications product
- Book files in Portable Document Format (PDF), which allow you to print the books shipped with the products

Chapter 1. Welcome to Personal Communications for OS/2

Personal Communications Version 4.3 for OS/2 is the successor to Personal Communications Version 4.2 for OS/2, which offered for the first time a fully integrated client combining the emulation features of Personal Communications with the OS/2 Access Feature to provide a wide variety of connectivity services and application programming interfaces (APIs). The OS/2 Access Feature, derived from Communications Manager/2, provides a natural migration path for users of Communications Manager/2 seeking a familiar client environment supporting upward compatibility for applications. The evolution of the Personal Communications product is illustrated in Figure 1 .

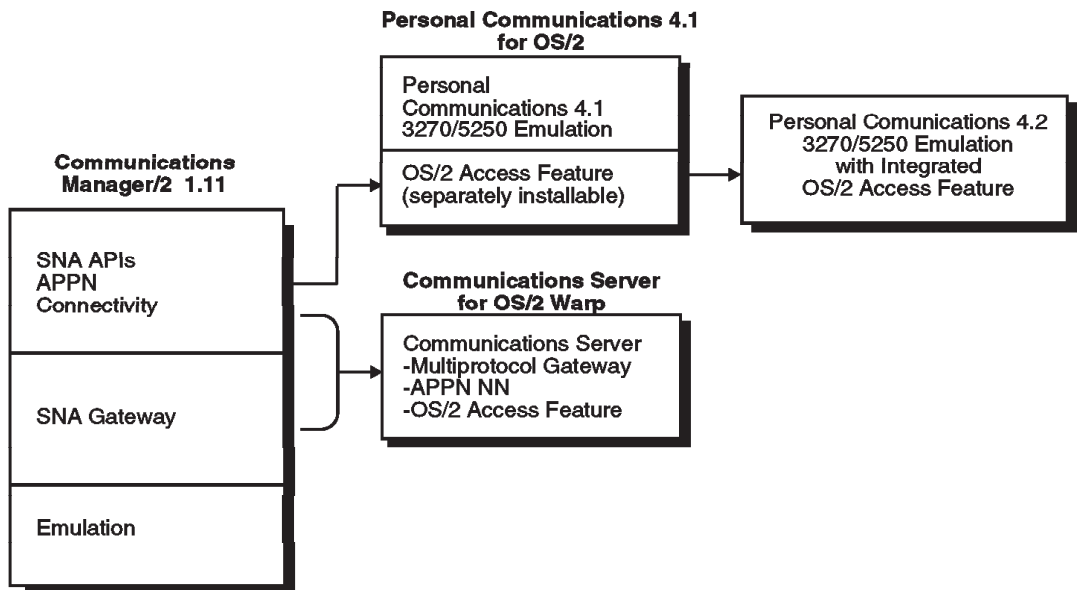


Figure 1. Evolution of the Personal Communications for OS/2 product

Personal Communications Version 4.3 uses an integrated installation and configuration (first introduced in Version 4.2) designed for users migrating from CM/2. This provides the user a single step operation offering a variety of options to manage the client desktop configuration. Configuration dialogs are provided for many configurations using the Access Feature, which allow the user to create a configuration with the minimum number of parameter

selections. For users that require support for additional communication protocols, such as X.25, ISDN, IDLC, or advanced SNA functions such as High Performance Routing (HPR), a configuration selection is provided that will allow the user to access the familiar OS/2 Access Feature configuration panels.

Note



The terms OS/2 Access Feature and Access Feature are used interchangeably in this book.

What's New in this Edition

Additional enhancements for Personal Communications Version 4.3 for OS/2 include:

- Support for Secure Sockets Layer (SSL).
- Support for Java programming using:
 - Javabeans
 - Host Access Class Library

Euro Sign

Code page tables have been changed to support the new euro sign.

Printer support for this currency sign depends on the printer and printer driver supporting it.

New code pages

Personal Communications Version 4.3 extends the additional support provided in service updates for Version 4.2, and now provides new or updated support for these code pages:

- 420 (Arabic)
- 424 (Israel)
- 838 (Thailand)
- 1047 (Latin 1 Open Systems)
- 1140 (Canada, Netherlands, Portugal, U. S.)
- 1141 (Austria, Germany)
- 1142 (Denmark, Norway)
- 1143 (Finland, Sweden)
- 1144 (Italy)
- 1145 (Latin America, Spain)
- 1146 (United Kingdom)

- 1147 (France)
- 1148 (International)
- 1149 (Iceland)
- 1153 (Latin 2)
- 1154 (Cyrillic)
- 1155 (Latin 5 —Turkey)
- 1160 (Thailand)
- Personal Communications now uses the IBM CDRA Tables (for SBCS versions only).

Personal Communications Folder

When you install Personal Communications, the main functions that you can use are displayed as icons:

Start/Configure Session



Use this icon to set up the link configuration, as well as other attachment information. You need this information to establish communication with the host system. After you configure the link, you can save the configuration to a workstation profile (*.WS) and create an icon for that session. Later, you can click the new icon to start the session, using your saved configuration.

Multiple Sessions



Use this icon to create batch files (*.BCH) that specify multiple host sessions (workstation profiles) or other programs that you want to start concurrently. Again, you can create an icon for each batch file and start the programs just by clicking the icon.

Data Transfer (PC400 only)



Use this icon to transfer data between a workstation and an AS/400 database.

Shared Folders (PC400 only)



Use this icon to share AS/400 folders with a workstation. Using this function provides access to eight virtual workstation drives, allowing the information in the AS/400 folders to be accessed as if it were stored at the workstation.

In addition, icons are provided to link some of the Access Feature utilities into Personal Communications so the user is not required to go to the OS/2 Access Feature folder. Some examples are:

- Start Access Feature
- Stop Access Feature normally
- Stop Access Feature abnormally
- Access Feature configuration

Administration Tools



These are:

Menu-Bar-Customization Utility

Customize the menu bar in the workstation window

Configuration and Program Options

Add or remove program components or communication drivers, or enable or disable DOS APIs or utilities

Maintenance Aid

Gather service information, or install a corrective service distribution (CSD) or APAR fixes

Trace Services

Capture communication-protocol information that passes between workstations and gateways or host systems to resolve communication problems

Dump Formatter

Formats alerts and dumps. Alerts are logged to **EPWALERT.DAT**.

Message Log Formatter

The FFST/2 message log utility allows you to display error messages. Messages that occur during runtime are logged into the default message log, which is **OS2MLOG.DAT**.

System Error Log

Logs system errors during initialization and operation

Subsystem Management

Monitors and controls the status of Access Feature communication resources

Adapter-Status Reporter

Display the status of the local area network (LAN) adapter in the workstation

Certificate Management



Use this icon to enable Secure Sockets Layer (SSL) communication between your communication server and client. Refer to *Personal Communications Reference* for details on how to use this utility.

Certificate Wizard



Use this icon to launch the Certificate Wizard which allows you to enable Secure Sockets Layer (SSL) communication between your communications server and client. Refer to *Personal Communications Reference* for details on how to use this utility.

Productivity Tools



These are:

ALMCOPY (PC/3270 only)

Send single or multiple files to or from VM 3270 sessions with the high-speed file transfer program, ALMCOPY. You can also use an asterisk as a wild card in place of characters in file names or file types.

For detailed information, refer to ALMCOPY.DOC in the PCOMOS2 directory.

ACPM (PC/3270 only)

Use ALMCOPY from a window instead of an OS/2 command prompt.

For detailed information, refer to ACPM.DOC in the PCOMOS2 directory. Note that this productivity aid is provided AS IS and is not supported by IBM Service.

EasyREXX for HLLAPI

Create a REXX/HLLAPI program by using menus in a programming window. In this window, you can create or edit a file, record emulator operations into a REXX program, or use interactive programming to develop a REXX program.

For detailed information, refer to PCSRXHLL.DOC in the PCOMOS2 directory.

CMMouse

You can define mouse buttons to perform any sequence of host keystrokes, including PF keys and special emulator control keys. You can also build pop-up menus to control host applications without any changes to those host programs.

Refer to the READ.ME file on the Personal Communications CD-ROM for installation instructions.

CMRTM (PC/3270 only)

Monitor response time for 3270 sessions that require SNA support

Refer to the READ.ME file on the Personal Communications CD-ROM for installation instructions.

ZipPrint (PC/3270 only)

From a PC/3270 display session, print PROFS or OfficeVision (OV) notes, calendars, documents, CMS files, XEDIT workspaces, and session screens.

Readme - Please!



Use this icon to display supplementary information not contained in the manuals, online help, or the Information notebook.

Personal Communications Sessions

The sessions that Personal Communications provides are logical connections enabling communication between the workstation and host system. The following types of sessions are available:

Display session

Lets you use your workstation as a display terminal connected to the host system.

Printer session

Lets you use a workstation printer as a host-system printer.

You can have up to 26 sessions running at once, depending on the Personal Communications package you are using and the amount of memory in your workstation.

Personal Communications Connections

Personal Communications provides a variety of connections to three types of host systems:



S/390



AS/400



S/3X

System/390 Connections

Personal Communications supports the following connections to a System/390:

Interface	Attachment
-----------	------------



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



Hayes** AutoSync
SNA-over-Async
IBM Global Network Connection
Advantis (IIN)
Home3270



Synchronous Data Link Control
3270 via AS/400 (passthru)
APPC3270 via SDLC



3270 via AS/400 (passthru) (twinax)



Advanced

Advanced 3270 Connections
Advanced APPC3270 Connections

AS/400 Connections

Personal Communications supports the following connections to an AS/400 system:

Interface



LAN



SDLC



5250



COM
port



Advanced

Attachment

LAN via IEEE 802.2 Telnet5250

Synchronous Data Link Control

Twinaxial Data Link Control (APPC)
Twinaxial Data Link Control (Console)

SNA-over-ASYNC
SNA-over-ASYNC (Console)
Hayes AutoSync

Advanced 5250 connections

System/3X Connections

Personal Communications supports the following connection to a System/36 or System/38:

Interface



5250

Attachment

Twinaxial Data Link Control (Console)

Chapter 2. Getting Ready to Install Personal Communications

Personal Communications supports a wide range of workstations that use different bus architectures and peripheral components. There are several hardware and software requirements, as well as memory and storage requirements, to consider when planning your installation.

The following sections list these requirements and the support for adapters, keyboards, and printers.

Workstation Hardware

Personal Communications supports workstations with the following hardware:

Table 1. Workstation Hardware Requirements

System unit	The recommended system unit has an Intel** 80486 ** or faster microprocessor and access to a CD-ROM drive.
Display and display adapters	Personal Communications supports display monitors and video adapter cards supported by OS/2.
Keyboards	Personal Communications supports the following keyboards: <ul style="list-style-type: none">• Enhanced keyboard (101-key, 102-key, and 104-key)• Space-saving keyboard• Host-connected keyboard (122-key)
Printers	Personal Communications supports the same printers supported by OS/2 as well as those supported by printer definition tables (PDTs). (Refer to the <i>Personal Communications Reference</i> for more information.)

Communication adapters	Personal Communications supports the same adapters for LAN attachments that are supported by Multi-Protocol Transport Services (MPTS). Refer to “Appendix A. Communication Adapters and Modems” on page 93 for a full list of communication adapters supported by Personal Communications.
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Storage Requirements

You need at least 25 MB of disk space to install Personal Communications. However, if the connectivities you are using require SNA, you will need an additional 15 to 25 MB for Access Feature functions.

Memory Requirements

The amount of memory you need to run Personal Communications (in addition to the memory needed for OS/2) depends on several factors, including the attachment type, number of sessions, and the use of such programming interfaces as Emulator High Level Language Application Programming Interface (EHLLAPI), dynamic data exchange (DDE), Java beans, and HACL for Java.

Since OS/2 uses virtual memory management, the amount of memory can be minimized if enough hard disk space is available for the SWAP file. Reducing memory in this way is not recommended because of the performance implications of swapping. It is recommended that at least 16 MB be used.

Workstation Software

Personal Communications requires that workstations have IBM OS/2 Version 4.0 or later installed.

Note: For Euro symbol support, you may require an additional fix pack; the specifics vary by language.

Depending on your system configuration, the following software also might be required:

- IBM Multi-Protocol Transport Services (included in this package), which provides LAN and TCP/IP protocols.

Note: To utilize Secure Sockets Layer (SSL) support, you must install the version included with Personal Communications Version 4.3.

- IBM TCP/IP Version 2.0 for OS/2 Base Kit or later (required for TCP/IP attachments if you don’t have MPTS)

- NetWare Client for OS/2 (required for LAN-via-NetWare-for-SAA attachments)

Chapter 3. Installing Personal Communications

Personal Communications provides several installation options. You can install Personal Communications:

- Directly from CD-ROM
- From a network server
- By means of the configuration, installation, and distribution (CID) process, using a response file. Response files are described in detail in the *Personal Communications Reference*.

Personal Communications Installation Details

Introduction

This chapter describes how to install Personal Communications directly from CD-ROM and over a network. Personal Communications provides an installation guide to lead you through the installation process.

Notes:

1. Personal Communications will install the Access Feature components.
2. If Personal Communications V4.2 is found, Personal Communications Version 4.3 will be installed, replacing the previous version. By default, the same directory will be used for the installation. All Personal Communications files in the private directory will be retained. The Access Feature will also be reinstalled.

Note



If you install Version 4.3 on a system that previous had Version 4.2 sessions configured, you must use the configuration process after installing Version 4.3 – in order to ensure that all required device drivers are installed and operational.

3. If Communications Server for OS/2 V5.0 or later is found, Personal Communications will be installed, but Access Feature will not be installed.

Instead, the SNA communications subsystem from Communications Server will be used. If Communications Server for OS/2 is found, only Advanced Configuration can be used.

Direct Installation from CD-ROM

Note



You can also use the Personal Communications CD-ROM to go directly to the Personal Communications web page.

To install Personal Communications on your workstation from CD-ROM:

Note: These instructions are for Personal Communications only; the companion product installation is not described here.

1. Insert the Personal Communications CD-ROM into the CD-ROM drive.
2. At an OS/2 command prompt, type the following commands to change to the CD-ROM drive and correct path:

```
E:  
cd \os2\install\emulator  
install
```

(where *E:* is your CD-ROM drive).
3. The Personal Communications logo window appears, followed by a welcome message
4. Select the emulator you want to install. Access Feature will be included in this installation. You may also choose to install just the Access Feature.
5. Select the drive and directory into which Personal Communications will be installed. Also, select the drive that will be used for Access Feature. (Access Feature is installed in the **CMLIB** directory.)
6. Select the installation type. The choices are:
 - Full installation plus Access Feature documentation
 - Full installation (the default)
 - Selective installation
 - Minimal installation
7. If Selective installation was chosen, you now select among the many installation options that are available. These include: support for various

connectivities and APIs, sample programs, PDF/PDT files for various printers, and Personal Communications documents.

8. That completes the installation dialog. Once you have clicked on **Finish** the actual installation of the files begins. The Access Feature files will be installed first, followed by the Personal Communications files. Also, during this phase, selected Communications Manager configuration files may be migrated.
9. After all the files are copied to your workstation, a message appears to tell you that the Personal Communications folder has been created. The Personal Communications folder appears on your desktop.
10. This completes the installation of Personal Communications; an informational message may appear to tell you that you need to shut down OS/2 and restart your workstation before you can use Personal Communications.

Network Installation

If you want to install Personal Communications from a network server, such as an IBM OS/2 LAN server or NetWare server, install the Personal Communications files on the network server first.

Installing Personal Communications Files *on* a Network Server

Personal Communications provides an administrative installation option for installing files on a network server. When you use this option, Personal Communications copies the files from the CD-ROM to the network drive and renames them.

To install Personal Communications with the administrative option, enter **INSTALL /A** from an OS/2 command prompt.

Installing Personal Communications *from* a Network Server

If your system administrator has installed the Personal Communications files on a network server, you can install Personal Communications from the server to your workstation.

Although you can install Personal Communications from the network in the same manner as from CD-ROM, there is a network installation option that lets you share the program files on a network server with other users. When you use the network option, the "private" files are installed on your workstation or on your "home" directory on the server. Also, the Access Feature files are installed on your workstation.

To install Personal Communications with the network installation option, enter: **INSTALL /N** from an OS/2 command prompt.

Installation Command Parameters

Enter the INSTALL command from an OS/2 command prompt.

Installation Parameters

- To install Personal Communications files on a server, enter:
INSTALL /A
- To install Personal Communications files from a server and to keep only the private files either on your workstation or on your "home" directory on the server, enter:
INSTALL /N
- To install Personal Communications by using response files (using CID), enter:
INSTALL /R: (full path of a response file)
- To remove Personal Communications files from your workstation, enter:
INSTALL /D
- To view help for the INSTALL command, enter:
INSTALL ?
- To have an unattended network installation of Personal Communications, enter:
INSTALL /Q /R: (full path of a response file)

Removing Personal Communications

You can remove Personal Communications from your workstation at any time; to do so, enter the following command from an OS/2 command prompt:

```
INSTALL /D /T=C:\PCOMOS2
```

where:

- /D** Removes the product files and directories, the folder, the icons, and the entries from system files such as CONFIG.SYS and PCOMOS2.INI.
- /T** Indicates the path from which the files should be removed. If you do not add this parameter, the files are removed from the path indicated in PCOMOS2.INI.
- C:\PCOMOS2**
Indicates the drive and directory in which Personal Communications is installed.

Chapter 4. Configuring Sessions

This chapter describes how to configure a session to have the type of connection, screen size, and other attributes that you want. It also describes how to save the session definitions in a profile.

Personal Communications Version 4.3 for OS/2 has a user interface to create a configuration which fully integrates the OS/2 Access Feature, which was previously provided as a separately installable option. A configuration dialog is a series of configuration panels that guide you through the configuration process with a minimal amount of input required. Configuration of basic sessions includes configuration dialogs to simplify the task of configuring many basic connectivities. Additional connectivities and advanced configuration parameters that are not supported by the configuration dialogs are defined using an integrated set of Personal Communications and OS/2 Access Feature configuration panels.

To communicate with a host system successfully, you must create a configuration for the connections you want to establish. The term *configuration* represents all of the configuration files associated with a specific workstation configuration. The number and type of configuration files depend on the actual workstation configuration. A configuration consists of emulator definitions such as keyboard and color mapping, and communications definitions such as LAN address and CP name. Personal Communications saves this configuration information in a workstation profile (*.WS). This profile can be used later by other Personal Communications sessions. For certain types of configurations that require SNA connectivities (LAN and SDLC), Access Feature configuration files (.RSP, .CFG, .CF2, .NDF, and .SEC) will be stored in \CMLIB.

Note



If you are using a 3270 or 5250 PCMCIA card, refer to "Installing PCMCIA Support" on page 99 before continuing configuration.

Configuring PC400 and 3270



To connect PC400 to an AS/400 system or S/390 specific configuration information in the workstation profile must correspond to the information specified at the host system.

Configuring Basic Sessions

For many connectivities, creating a basic configuration uses simple configuration dialogs. Each dialog guides you through a configuration process using the most commonly specified parameters. These parameters are displayed on a summary panel at the end of the configuration dialog path. You can modify these parameters from the summary panel, thus eliminating the need to use the Advanced configuration path to define these parameters. A configuration dialog requires only a minimum amount of user input to allow you to get up and running quickly. If you are familiar with Communications Manager/2 or the OS/2 Access Feature, the Personal Communications dialogs are equivalent to the Quick Configuration process for those products.

For other types of connectivities where a configuration dialog is not available, creating configurations involves specifying values for the parameters listed on each panel.

Attachment Types With Configuration Dialogs

Note



If you install Version 4.3 on a system that previous had Version 4.2 sessions configured, you must use the configuration process after installing Version 4.3 – in order to ensure that all required device drivers are installed and operational.

Table 1 lists the various attachment types available and identifies the attachments where the configuration path is guided by a configuration dialog. When you select one of these attachments types for the interfaces and hosts listed, the configuration dialog provides as defaults many of the most commonly used parameters.

Table 1. Attachment types with corresponding configuration dialogs

Interface	Attachment	Host	Config Dialogs
LAN	LAN Via IEEE 802.2	S/390 AS400	✓ ✓
LAN	LAN via NetWare for SAA	S/390	
LAN	Telnet3270	S/390 AS400	
LAN	3270 via AS/400	S/390	✓
LAN	APPC3270 via LAN	S/390	✓
COAX	SNA Distributed Function Terminal	S/390	
COAX	Non-SNA Distributed Function Terminal	S/390	
COAX	Control Unit Terminal	S/390	
COAX	3174 Peer Communication	S/390	✓
COM PORT	Hayes AutoSync	S/390 AS/400	✓ ✓
COM PORT	SNA over ASYNC	S/390 AS400	✓ ✓
COM PORT	IBM Global Network	S/390	
COM PORT	Home3270	S/390	
COM PORT	Advantis	S/390	
COM PORT	SNA over ASYNC (Console)	AS400	
5250	3270 via AS/400	S/390	
5250	Twinaxial Data Link Control (APPC)	AS400	
5250	Twinaxial Data Link Control (Console)	AS400 S/390	
SDLC	Synchronous Data Link Control	S/390 AS400	✓ ✓
SDLC	3270 via AS/400	S390	✓
SDLC	APPC3270 via SDLC	S390	✓

For connectivities that are created using a configuration dialog, a workstation profile (*.WS) is created and saved in the \PCOMOS2 directory. The Access

Feature configuration files, including a response file (*.RSP), are created and saved by default in the \CMLIB directory.

A response file, which is also an ASCII configuration file for the OS/2 Access Feature, can be used to upgrade or change configuration parameters. A response file is created for each configuration that uses a configuration dialog. For example, when a configuration with the name *configname* is successfully verified, information about that configuration is recorded into the file *configname.RSP*. If you want to modify your configuration without repeating the configuration dialog process, you can directly edit the response file.

The OS/2 Access Feature provides the CMRECORD utility that creates a response file from a configuration. You can also create a response file by editing a response file and adding the configuration information.

If you modify an existing response file, you can apply your changes to the configuration by typing CMSETUP /R response_file.

See the *Communications Server for OS/2 Response File Reference* for more information on using response files to create a configuration.

Basic Configuration Steps

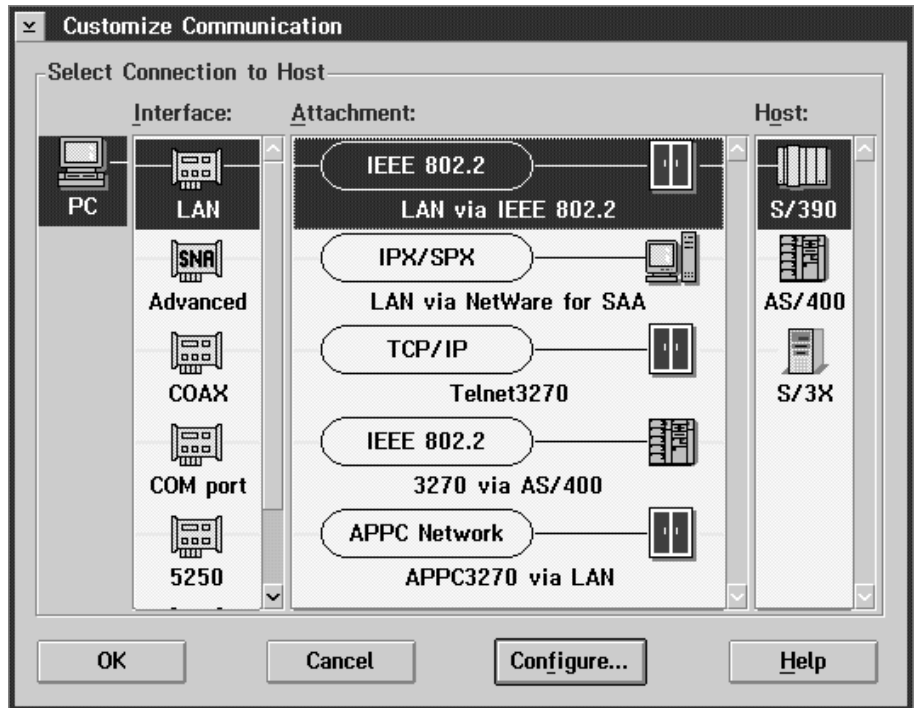
To configure a basic session:

1. Double-click the **Start/Configure Session** icon in the Personal Communications folder.

The logo panel appears, followed by a welcome message.

2. Select **OK** to confirm that you want to start configuration.

The Customize Communication window overlays the blank session window.



A list of host types is displayed. The host types that are displayed depend on the Personal Communications option you select during installation (3270 emulator only, 5250 emulator only, or both 3270 and 5250 emulation).

The possible host types are:

- **S/390** for connections to an S/390 system
- **AS/400** for connections to an AS/400 system
- **S/3X** for connections to a System/36 or System/38

3. Select a host type from the list.
4. Click the adapter card (Interface) that you will use; the attachment types that can be used with this adapter are displayed.
5. Click the attachment type to be used.
6. Select **Configure...**

The Customize Communication - xxxxx window is displayed. (xxxxx represents the attachment type for each session.)

For information on each parameter, select **Help**.

Note: If you want to enable data compression or session-level encryption, select **Configure SNA**. This push-button does not appear for all attachment types.

7. Select **Configure Link**.

- a. If the connectivity you selected on the Customize Communication window is not supported by a configuration dialog, you are prompted to provide values for all parameters on the configuration panels that are displayed.
- b. If the connectivity you selected on the Customize Communication window is supported by a configuration dialog, the first in a series of configuration dialog panels is displayed. This initial panel allows you to specify the name for the configuration you are creating or modifying. The configuration dialog looks for the following configuration file names in the order listed below, and depending on which is found first, displays that configuration name as the default name on this panel:
 - 1) The configuration file name saved in the .WS file
 - 2) The active configuration file name
 - 3) The default configuration file name

If you do not want to use the default name, specify another name, or select **Browse** to view a list of existing configuration file names.

Note: If you want to run multiple emulator sessions concurrently, you must use the same Access Feature configuration file for all sessions. This applies only to connectivities that use the Access Feature.

“Example Configuration Dialog” on page 25 shows an example of how a configuration dialog guides you through the process to create a configuration for a LAN connection for 3270.

If the configuration dialog detects it cannot support the configuration file for the connectivity you selected on the Customize Communication panel, the Advanced Configuration File dialog is displayed. This dialog lists the possible reasons why the configuration is not supported. Select **Advanced** to display the Advanced Connection panel, then select **Configure LU Definitions** to continue with the advanced Access Feature configuration or select **Back** to change the configuration file name. See “Configuring Sessions for Advanced Functions” on page 28 for more information on advanced configurations.

When you have finished entering values for your configuration, the Customize Communication is displayed.

8. Select **OK** on the Customize Communication window to return to the session window.
9. If you have configured a connection that requires the installation of a device or IFS driver, a message appears that lets you choose to install the device or driver now or later.
 - a. If you select **Yes**, it is installed immediately. If you select **No**, you will need to install it later with the Configuration and Program Options utility in the Administration Tools folder.

Tip



Twinax and coaxial connections all require that a device driver be installed. Also, before you can use Shared Folders, an IFS driver must be installed. Therefore, if you want to make changes such as these, which require you to restart OS/2, make them now.

- b. After the device or IFS driver is installed, shut down OS/2 and restart your workstation so the connection can be established.

Your configuration is now complete. If you want to save it, refer to "Saving Configuration Information" on page 44 for details.

Example Configuration Dialog

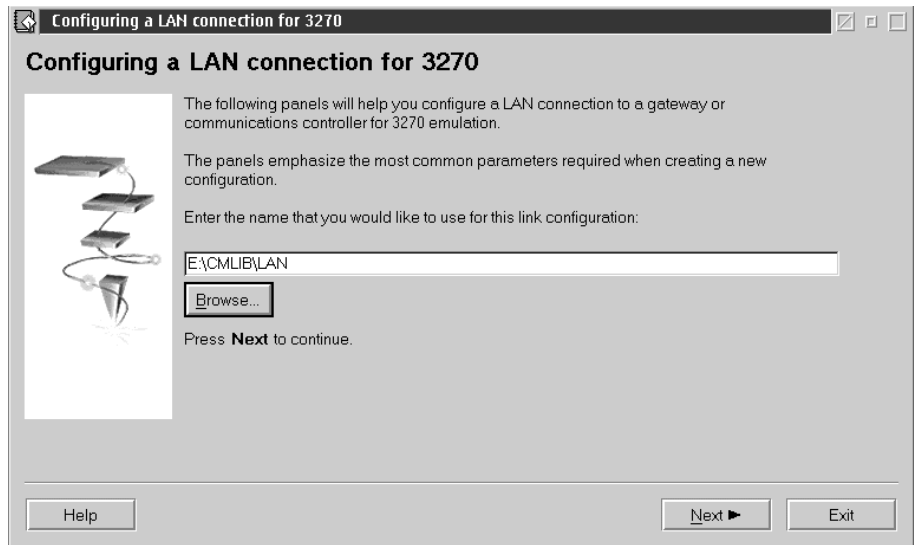
When you select a connectivity that uses a configuration dialog to guide you through the configuration process, a series of panels similar those in this section are displayed when you select **Configure Link** on the Customize Communication window. This example illustrates the panels that are displayed to configure a LAN connection for 3270.

1. Configuration information is recorded in a response file (.RSP) and is stored in the \CMLIB directory. In this example, response file LAN.RSP is stored in \CMLIB. Response files are also used by Communications Server and the OS/2 Access Feature to define configurations. The response file created in this example is equivalent to the response files used by those products.

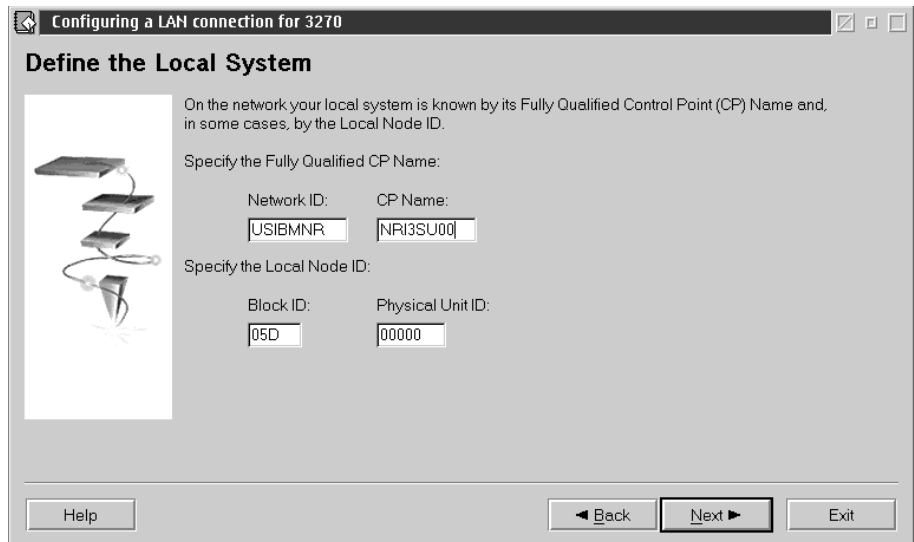
You can also select **Browse** to view a list of existing configuration files (*.RSP) in the \CMLIB directory or in other directories.

Note: If you specify a response file on this panel that currently resides in a directory other than \CMLIB, the updated Access Feature configuration files, including the response file, will always be stored

in \CMLIB.



2. Specify the information about your local system.



3. On this panel, specify information about the local workstation and the gateway in order for a connection to be established.

The screenshot shows a window titled "Configuring a LAN connection for 3270". The main heading is "Define Connection Information". On the left is an illustration of a 3270 terminal connected to a network. The text says: "Enter the following information to configure the LAN connection between the local workstation and the communications controller or gateway:".

Workstation information

Adapter number: 0

LAN destination information

Address: 400020600632

Remote SAP: 04

Address format: ☒ Token Ring ☐ Ethernet

Buttons at the bottom: Help, < Back, Next >, Exit.

4. When you have entered all required information, the Review Configuration panel is displayed to show a summary of the defined parameters and the defaults used. If one of the defaults or user-defined values is not correct, you can click on the value to display the corresponding configuration panel for that value. For example, if you want to change the value for LAN destination address, click on the value to the right of that parameter.

The screenshot shows a window titled "Configuring a LAN connection for 3270". The main heading is "Review Configuration". On the left is the same illustration of a 3270 terminal. The text says: "The parameter values below will be used to create the LAN connection for 3270. To change a definition, click on the parameter value that you want to change." and "Click **Done** to accept the configuration values and generate the configuration file (LAN)."

Local System Parameters

Fully Qualified CP Name	USIBMNR.NR13SU00
Local node ID	05D 00000

LAN Connection Parameters

Local adapter number	0
LAN destination address	400020600632
Remote SAP	04
Maximum I-field size	2224
Address format at remote adapter	Token Ring

LAN Adapter Parameters

LAN adapter	04
-------------	----

Buttons at the bottom: Help, Done, Exit.

5. You are then returned to the Define Connection Information dialog where you can modify the value for the selected parameter. Select **OK** to return to the Review Configuration dialog.

Configuring a LAN connection for 3270

Define Connection Information

Enter the following information to configure the LAN connection between the local workstation and the communications controller or gateway:

Workstation information

Adapter number:

LAN destination information

Address:

Remote SAP:

Maximum I-field size: (265 - 16393)

Address format: ☒ Token Ring ☐ Ethernet

Help Undo OK Exit

When you select **Done** on the Review Configuration dialog, the Access Feature CMSETUP /R command is issued to perform response file processing and to create the Access Feature configuration files. The Customize Communication window is once again displayed.

Configuring Sessions for Advanced Functions

The Customize Communication panel includes an Interface selection for Advanced. The Advanced selection is used to support the following:

- Configurations for additional connectivities such as X.25, ISDN and GDLN.
- Configurations requiring selection of additional parameter specifications not supported by the configuration dialogs, such as HPR, DLUR or multiple PU support. This could apply to new configurations or existing configurations that were created using configuration dialogs that need to be modified.

If the configuration dialogs detect a condition requiring the use of the Advanced configuration path, a panel is displayed to notify you of the conditions under which this might occur. These conditions include:

- The configuration you are configuring was created through the Advanced interface option on the Customize Communications window.
- The configuration was created or modified with a text editor.
- The configuration contains information for a connection type that is different from the connection type you selected to begin the configuration.

Note



Some configuration panels in the Advanced selection may contain references to Communications Manager. Personal Communications configuration panels are reused from the OS/2 Access Feature and Communications Manager/2. If you have installed and configured CM/2 or the OS/2 Access Feature, these configuration panels will look familiar.

Configuration Steps for Advanced Functions

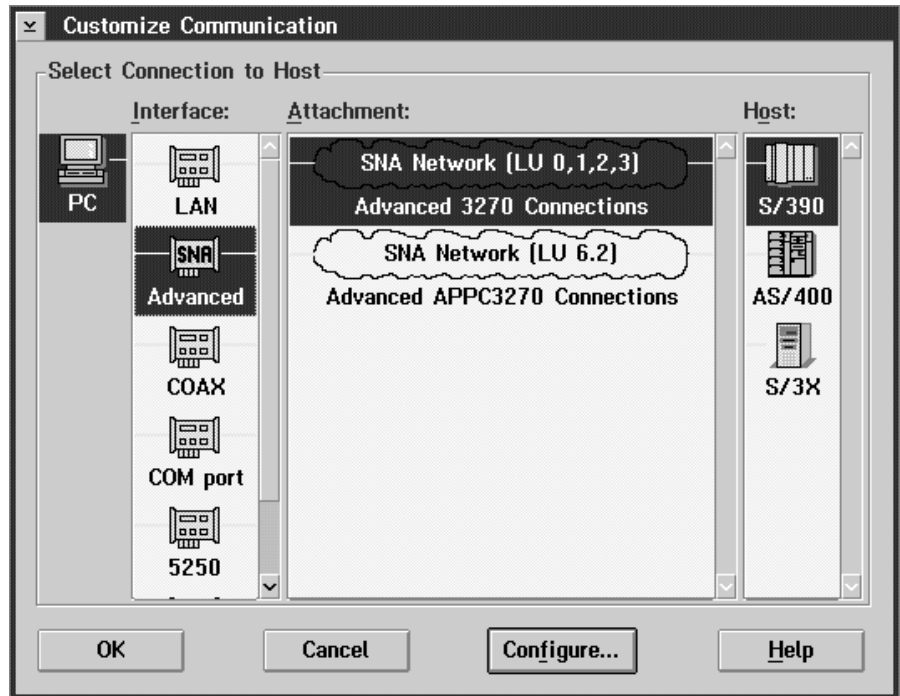
To configure for advanced functions:

1. Double-click the **Start/Configure Session** icon in the Personal Communications folder.

The logo panel appears, followed by a welcome message.

2. Select **OK** to confirm that you want to start configuration.

The Customize Communication window overlays the blank session window.



A list of host types is displayed. The host types that are displayed depend on the Personal Communications Option you select during installation (3270 emulator only, 5250 emulator only, or both 3270 and 5250 emulation).

The possible host types are:

- **S/390** for connections to an S/390 system
- **AS/400** for connections to an AS/400 system
- **S/3X** for connections to a System/36 or System/38

3. Select a host type from the list.
4. Click the Advanced interface. The attachment types that can be used with this adapter are displayed.
5. Click the attachment type to be used.
6. Select **Configure...**

The Customize Communication - xxxxx window appears. (xxxxx represents the attachment type for each session.)

For information on each parameter, select **Help**.

Note: If you want to enable data compression or session-level encryption, select **Configure SNA**. This push-button is not displayed for all attachment types.

7. Select **Configure Link**.

The Advanced Connections panel is displayed for the connection type you selected.

8. Select **Configure LU Definitions**.

The Communications Manager Setup window is displayed. All subsequent configuration panels are reused from the OS/2 Access Feature.

9. Select **Setup**.

The Open Configuration window is displayed.

10. Type a configuration name, or select the configuration you want to change. After you supply the required information and select **OK**, the Configuration Definitions window is displayed. Refer to “Configuration Definitions Window” for more information on completing the remaining panel definitions.

Refer also to “Quick or Advanced Configuration” on page 34 for information on how to use the Quick and Advanced configuration paths.

11. When you have finished, select **OK** on each window until you return to the session window.

Your configuration is now complete. If you want to save it, refer to “Saving Configuration Information” on page 44 for details.

Configuration Definitions Window

On the Configuration Definitions window, you can select either:

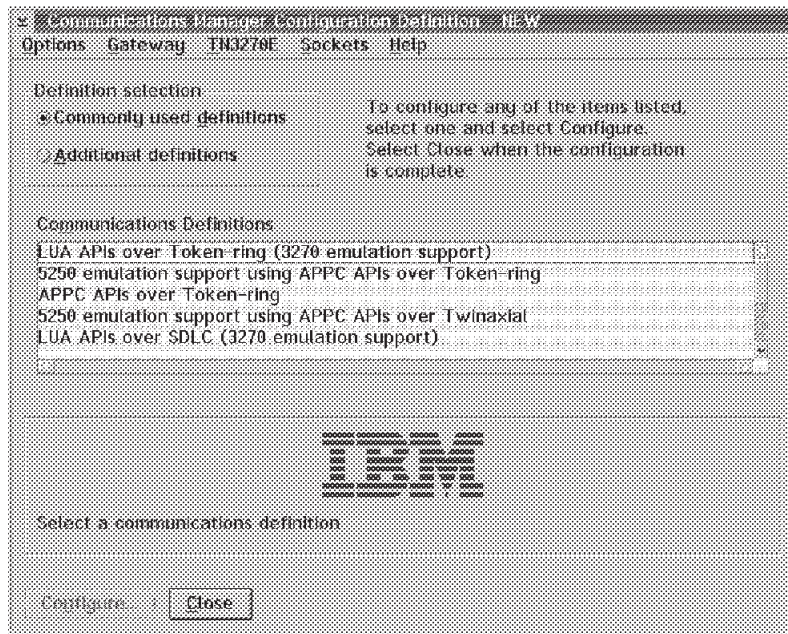
- **Commonly used definitions**
- **Additional definitions**

Commonly Used Definitions

When you select **Commonly used definitions**, the workstation connection type and features or applications appear in a single list that contains the most common configuration choices.

Select the definition that you want to configure. You can configure LUA and APPC application programming interfaces (APIs) configurations that support

application communications and 3270 and 5250 emulation.



Additional Definitions

When you select **Additional definitions**, all of the workstation connection types are displayed in one list and all features and applications that are available for the selected connection type appear in another list.

Select a connection type from the *Workstation Connection Type* list, and then select your choices from the *Feature or Application* list for your configuration.

Selecting the Workstation Connection Type

The hardware detection feature makes a default connection type selection for you. You can select a different connection type. If you make a different connection type selection, the entries in the *Feature or Application* list might change.

You can make only one selection from the *Workstation Connection Type* list. If you have more than one connection type, complete the configuration profiles for the first connection type and then repeat the configuration process.

Features or Applications

The *Feature or Application* list always displays the features and applications that are available for the selected connection type. Select the features and applications from the list. To select more than one, hold down the *Ctrl* key

while selecting with your mouse. If you select more than one feature or application, the quick configuration path will not be available.

After you make your choices from the connection type and features or applications lists, select **Configure**. Depending on your selections, you see either the quick or advanced configuration windows.

If you have several combinations of a connection type and features or applications, you must configure them one at a time. Always return to the Configuration Definitions window to choose another combination.

For each connection type, various features or applications are available. Use the connection type table that follows to guide you with your selection of the features or applications that you will install.

Connection Types and Related Features or Applications

The following table lists the workstation connection types and the features associated with each that you can configure.

Note



APPC APIs provide support for 3270 and 5250 emulation and application program communications. LUA APIs provide support for 3270 emulation and application program communications.

Connection Type	ACDI Redir.	APPC APIs	APPC for 5250 Support	CPI-C	LUA APIs	ACDI APIs	X.25 APIs	LUA with DLUS
AnyNet SNA over TCP/IP		✓	✓	✓	✓			✓
Asynchronous						✓		
DLUS using AnyNet		✓	✓	✓	✓			
Ethernet (1)	✓	✓	✓	✓	✓			✓
Frame Relay (1)	✓	✓	✓	✓	✓			✓
ATM LAN Emulation (1)	✓	✓	✓	✓	✓			✓

Connection Type	ACDI Redir.	APPC APIs	APPC for 5250 Support	CPI-C	LUA APIs	ACDI APIs	X.25 APIs	LUA with DLUS
GDLC for adapter-provided DLC		✓	✓	✓	✓			✓
IDLC		✓	✓	✓	✓			✓
PC Network	✓	✓	✓	✓	✓			✓
SDLC		✓	✓	✓	✓			✓
Token-Ring (1)	✓	✓	✓	✓	✓			✓
Twinaxial		✓	✓	✓	✓			✓
X.25		✓	✓	✓	✓		✓	✓
X.25 Using X.25 Coprocessor Adapter		✓	✓	✓	✓		✓	✓
Note: <ul style="list-style-type: none"> Ethernet, Frame Relay, ATM LAN Emulation, and Token-Ring are configured through "Token-Ring or Other LAN Types". 								

Quick or Advanced Configuration

If a quick configuration path is available, it is presented. If there is no quick configuration path available, the advanced configuration path is presented. For the quick configuration path, default values are provided for as many of your configuration parameters as possible.

You can access the advanced configuration path by selecting **Use advanced configuration** from the Options menu in the Configuration Definitions window. When this option is selected, choosing **Configure...** presents you the advanced configuration path, effectively bypassing the quick configuration path.

Quick Configuration

The quick configuration path is available for the following scenarios:

Connection Type	LUA APIs	APPC APIs for 5250 Emulation Support	APPC APIs
Ethernet	✓	✓	✓
PC Network	✓	✓	✓
SDLC	✓	✓	
Token-Ring	✓	✓	✓
Twinaxial		✓	

When using a quick configuration, you enter values for a minimum number of parameters into one window. The Communications Manager configuration program supplies defaults for all other parameters.

Note: HPR is enabled for Ethernet and Token-Ring connection types as the default.

If you change a default value through the advanced configuration path, the quick configuration path might no longer be available for that configuration definition. If this occurs, the advanced configuration path is presented. For another configuration, you again have the quick configuration path available.

You can always create your initial configuration with the quick configuration path, and expand the configuration at a later date with the advanced configuration path. The reverse is generally not true. To access the advanced configuration path from the quick configuration window, select **Advanced....**

Using the Quick Configuration

The following table lists the quick configuration parameters and the connection types. Find your connection type and then read down to identify the required (✓) parameters and optional parameters (O). Contact your administrator for assistance.

Parameter	LAN LUA	LAN APPC	LAN APPC - 5250 Emul.	Twin- axial	SDLC LUA	SDLC APPC - 5250 Emul.
Connection to network node server			✓	✓		✓
Controller address				✓		
LAN destination address	✓		✓			
Local node ID	O		O	O	O	O
Local node name	✓	✓	✓	✓	✓	✓
Local node type		✓				
Modem connection					✓	✓
Network ID	✓	✓	✓	✓	✓	✓
Network node server address		✓				

Parameter	LAN LUA	LAN APPC	LAN APPC - 5250 Emul.	Twin- axial	SDLC LUA	SDLC APPC - 5250 Emul.
Number of LUA definitions	✓				✓	
Partner LU name			✓	✓		✓
PCMCIA compatible machine				✓		
Port name					✓	
Secondary station address					✓	✓
Workstation machine type				✓		

Notes:

1. LAN is for Token-Ring, Ethernet, and PC Network.
2. Twinaxial connection is for 5250 emulation on AS/400 computers only.
3. Workstation machine type only appears when you are creating a Twinaxial configuration for another workstation.

This is a brief description of the quick configuration parameters. For a more detailed description, use the online help.

Connection to network node server

An indication that you are defining a link to a network node that provides directory and routing services for your workstation on an APPN network.

Controller address (number from 0 to 6)

The unique address that the host twinaxial controller uses to recognize your workstation.

LAN destination address (12 hexadecimal digits)

The address of the adapter at the communication controller or gateway on your network. Also called medium access control (MAC) address. This address must match a value defined at the host.

Local node ID (up to 8 hexadecimal digits)

Used by SNA when the link between the host and your workstation is activated. Also called IDNUM or known as your workstation's exchange ID (XID). The first three digits, 05D, are filled in for you. In most cases, this ID must match a value defined at the host.

Local node name (up to 8 characters)

The unique name of your workstation as it is known on your network. Also called physical unit (PU) name or control point (CP) name.

Local node type

The type of node that this workstation is. The node types are either *End node to network node server*, *End node - no network node server*, or *Network node*.

Modem connection

The type of line connected to the SDLC modem, either *Synchronous nonswitched - DTR dialed*, *Asynchronous switched*, *Asynchronous nonswitched*, *Synchronous switched*, *Autosync*, or *ISDN*.

Network ID (up to 8 characters)

The name of the network where your workstation is located; also called NETID or network name. This ID must match a value defined at the host.

Network node server address (12 hexadecimal digits)

The address for the LAN adapter on your network node server.

Number of LUA definitions (number from 1 to 253)

The number of logical unit application (LUA) definitions that you want to define for this configuration.

Partner LU name

The fully qualified partner name of the logical unit (LU) on the host. This parameter is the same as the host control point (CP) name. The partner LU name consists of two names, up to 8 characters each, separated by a period. This name must match a value defined at the host.

PCMCIA compatible machine

An indication of whether the machine has a PCMCIA adapter card, a PC adapter card, or a credit card adapter.

Port name

Identifies the communications hardware.

Secondary station address (2 hexadecimal digits)

The address of your workstation as it is known to the host. Use the default value unless your administrator gives you a different one.

Workstation machine type

The type of machine that the configuration you are defining will run on. This parameter only appears when you are creating a Twinaxial configuration for another workstation. The machine types are *Micro Channel* or *ISA or AT-compatible*.

Hints on APPC APIs Quick Configuration

Tip



You can use quick configuration to configure APPC APIs using the following connection types:

- Token-Ring or other LAN types
- Ethernet network
- PC Network

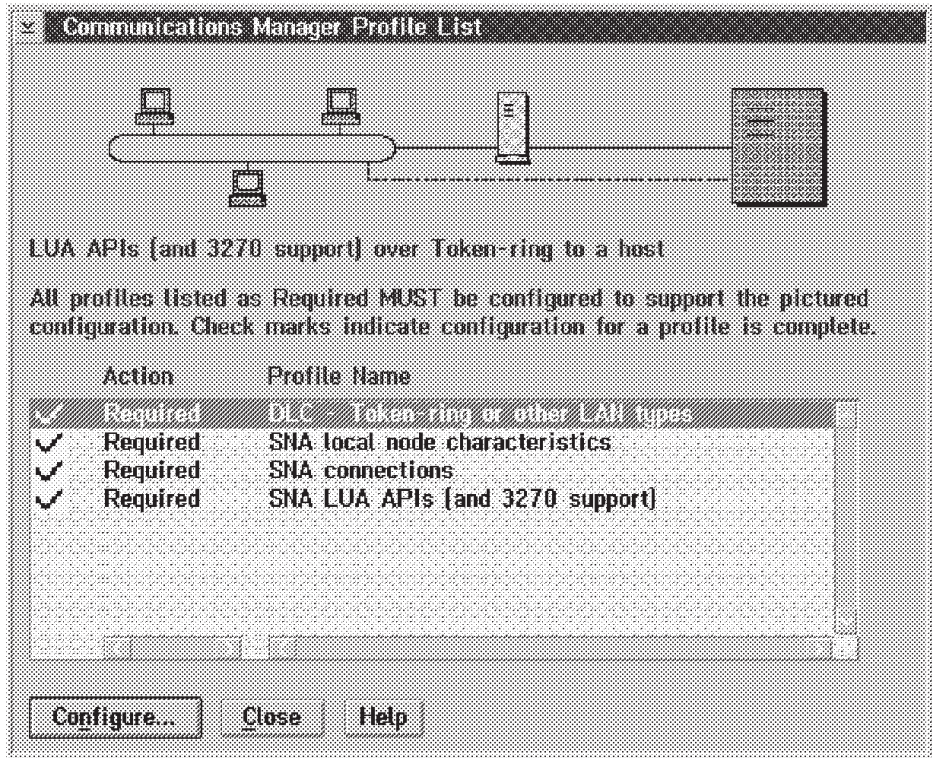
If the workstation will not be connecting from an end node to a network node server, you need to define an SNA connection. Follow these steps:

1. Complete the entries in the quick configuration window for the connection type that you selected.
2. Select **Advanced...**
The Communications Manager Profile List window appears.
3. Select **SNA connections**.
The Connections List window appears.
4. Select **to Peer Node**, then select **Create...**
The Adapter List window appears.
5. Select **Continue...**
The Connection to a Peer Node window appears.
6. Fill in **Partner network ID** and **Partner node ID**, then select **Define Partner LUs...**
The Partner LUs window appears.
7. Complete the partner LU information.
If you need to define an APPC transaction program (TP), complete the following steps:
8. From the Profile List window, select **SNA features**.
The SNA Features List window appears.
9. Select **Transaction program definitions**.

Advanced Configuration

If the quick configuration path is not available or if you selected to use the advanced configuration path, the Communications Manager Profile List window appears. A list of configuration profiles is presented to you based upon the previously selected connection type and features or applications. Use

the list in the window to guide you through the profiles that you need to configure.



In the *Action* column in the Communications Manager Profile List window, your profiles are identified as Required or Optional. Complete all the required profiles. In a few situations, some profiles are identified as *Required. Information displayed on the window indicates when you need to complete a profile identified as *Required.

When you configure a profile, a check mark (✓) is placed in front of the *Action* column. When all of the required profiles have a check mark, return to the Configuration Definitions window by selecting **Close**. Select the **Close** push button on the Configuration Definitions window when you have finished defining configurations.

Additional Options on the Configuration Definitions Window

From the Configuration Definitions window, you have additional configuration options.

From the Options pull-down menu, you can:

- Configure any profile or feature
- Change workstation information
- Change the advanced configuration path toggle
- Change the verify configuration toggle

From the Sockets pull-down menu you can configure Sockets over SNA support when you select **Configure...**

Configuring Any Profile or Feature

You can view a list of all configuration profiles by selecting the **Configure any profile or feature...** item in the Options drop-down menu in the Configuration Definitions window. The Configuration List window is displayed.

Selecting an item from the list displays the same configuration windows as used in the advanced configuration path. When you configure a profile, a check mark (&check.) is placed before the item.

Unlike the advanced configuration path, you are not guided to the profiles that are appropriate for your needs. With the advanced configuration path, you have a short list of profiles that are specific to your connection type and your features or applications. In addition, with the advanced path, each profile in your list is identified as required or optional.

With the full configuration list, you must decide which profiles need to be completed for your connection type and your feature or application. If you do not complete all of the required profiles, verification of the configuration will not be successful.

A Personal Communications specialist might want to use this path, but it should be compared with the “Quick or Advanced Configuration” on page 34 .

Configuring the ARTIC Adapter Without X.25

This feature indicates whether your workstation uses a real-time interface coprocessor (ARTIC) adapter that is not connected to an X.25 network. When you select to use this feature, the interface files required to run the adapter are loaded.

To access this feature, select **Configure any profile or feature...** from the Options drop-down menu in the Configuration Definitions window.

Configuring LAN Protocols Using ISDN

To access this feature, select **Configure any profile or feature...** from the Options drop-down menu in the Configuration Definitions window.

The LAN protocol using ISDN profile indicates whether your ISDN applications use any of the LAN protocols (IEEE 802.2 or NetBIOS, for example) to establish connections. When you select this feature, the files necessary to support ISDN connectivity are activated.

The LAN Protocols using ISDN profile requires installation of connection manager IEEE 802.5 virtual MAC driver. This driver is provided on the CD-ROM. MPTS must be installed before you can install and configure this network adapter. The configuration is stored in the PROTOCOL.INI file.

Configuring LAN Over Coaxial Cable

If you are using a 3270 adapter for 3174 Peer Communications (LAN over coaxial), select **Token-ring or other LAN types** as the type of connection.

You can configure for LU 6.2 and for support of 3270 emulation over the 3270 adapter for 3174 Peer Communications just as if this was a LAN adapter. Two cards are not required; you can configure both LU 6.2 and 3270 over the same adapter.

To set up a 3174 controller for Peer Communications, configure the Configuration Support C feature and the 3174 Peer Communications device driver for the 3270 adapter in MPTS or LAPS.

Changing the Workstation Information

You can change the workstation profile to specify the ASCII-to-EBCDIC (SBCS) or JISCII-to-EBCDIC (DBCS) translation table file name and to automatically load the services configured.

To change the workstation information, select **Change workstation information...** from the Options menu in the Configuration Definitions window.

Specifying a Translation Table File Name

An ASCII-to-EBCDIC (SBCS) translation table is provided to convert American National Standard Code for Information Interchange (ASCII) to extended binary-coded decimal interchange code (EBCDIC).

A standard default table is provided for these conversions. Do not type a file name in this field unless you use a translation table other than the default table.

Refer to *Communications Server for OS/2 Quick Beginnings* for more information on translation tables.

Selecting Services to Be Loaded Automatically

You can specify that services used by the workstation configuration be automatically loaded on a workstation each time communications start.

By default, each configured service is loaded on a workstation. If you do not want a service loaded automatically, deselect the appropriate check box.

You must configure each service that you want to be loaded automatically on a workstation. Selecting the service name in this list has no effect if the service is not configured.

Changing the Advanced Configuration Path Toggle

A quick configuration path is available for many configuration definitions. However, if you prefer to use the advanced configuration path, set the **Use advanced configuration** option to **On**.

If the quick configuration window is presented, you can always access the advanced path by selecting the **Advanced...** pushbutton. The advanced path uses the Profile List window.

Note



The toggle setting is associated with each configuration. When you change a configuration, the toggle is still set as you had previously defined it.

Changing the Verify Configuration Toggle

The configuration must be verified before you can use it. If the configuration is not verified, communications cannot start at a later time.

You might want to bypass automatic verification if you discover that you do not have all of the necessary information to configure the required profiles. When the information is available, you can restart the configuration program, make the appropriate modifications, and then perform verification.

To toggle automatic verification, select **Verify configuration** from the **Options** menu in the Configuration Definitions window. The default setting for this toggle is **On**.

Note



The toggle setting is associated with each configuration. When you change a configuration, the toggle is still set as you had previously defined it.

Configuring the Sockets over SNA Profile

The profile that is specific to configuring Sockets over SNA support is accessed by selecting **Configure...** from the Sockets drop-down menu in the Configuration Definitions window. See *Communications Server for OS/2 Quick Beginnings* for further information on profiles.

Checking Values Window

The Checking Values window is displayed after you have created or modified your configuration to indicate that CMSETUP is automatically verifying the configuration.

All configuration verification messages are logged in the file \CMLIB\VERIFY.LOG. If any errors are discovered when verifying a configuration, a message is displayed. Select **Show log** to transfer control to the FFST/2 Message Log Facility. Use the FFST/2 Message Log Facility to read the VERIFY.LOG. file. Select **OK** on the Verify Configuration message to return to the setup windows to make changes to your configuration.

When to Change or Add a Configuration

After Personal Communications is installed, you might have a need to change your configuration if you:

- Change adapter cards
- Change network parameters
- Specify a new default configuration
- Change parameters affecting the CONFIG.SYS file

In general, changes to an active configuration do not become effective until you stop and then restart. Use Table 2 on page 44 as a guide to determine the proper action to enable the changed configuration.

Table 2. Enabling Changes in the Active Configuration

Kind of Change	Action to Enable Change
Add any new feature	Install the necessary product files. Stop and restart communications.
Add a data link control (DLC) profile	Install the necessary product files. Stop and restart communications.
Change any SNA characteristic except local node name, connection networks, and SNA defaults	Verify and dynamically update SNA resources or stop and restart communications.
Change the CONFIG.SYS file	Stop communications, shut down and restart the workstation, then restart communications.
Change the workstation information	Stop and restart communications.
Change ACDI or X.25	Stop and restart communications.

If you receive a configuration from your network administrator, move it to an appropriate directory, such as \CMLIB. Place all configuration files in the same directory.

Saving Configuration Information

This section describes how to save configuration information to a workstation profile (*.WS).

By default, Personal Communications saves your configuration when you exit a session, but you can also save your configuration manually. When you save your configuration, you can have a session icon added to the Personal Communications folder that you can double-click to restart a session.

To save configuration information in a workstation profile:

1. Select **Save** or **Save As** from the File menu.

When you save an existing workstation profile with **Save**, the profile is saved using the existing name. You need not do the following steps.

Otherwise, the Save Workstation Profile As window appears.

2. Enter a file name that you want this profile to be saved as.

The name you enter is used as the icon title, unless you enter a description as well.

Note: When the file name is used for the icon title, it appears in lowercase and is restricted to 8 characters.

3. A message appears that lets you choose to have an icon created. If you select **Yes**, a session icon is created in the Personal Communications folder and you can start the workstation profile by double-clicking this icon. If you select **No**, you can start the session window program (**PCSW.S.EXE**) with the workstation profile name (*.WS) on the OS/2 command prompt, as follows:

```
C:\PCOMOS2\PCSW.S C:\PCOMOS2\PRIVATE\xxx.WS
```

where xxx.WS is the workstation profile name.

Note that you must specify all paths and directories.

The configuration information is saved, and the message that tells you how to start a session appears. Select **OK**.

To configure another session, select **Run the Same** from the File menu and, if you want, change the configuration for that session.

Tip



If you want to start another session that is exactly like the one that is already started, select **Run the Same** from the File menu of the original session.

If you want to start a session that is exactly like one you have saved but that is not started, select **Run Other...** from the File menu of any session that is started. Select a profile from the list that appears.

Changing Configuration Information

To change a profile:

1. Double-click the icon corresponding to the profile to be changed. The session window appears.
2. Select **Configure** from the Communication menu.
3. The subsequent steps are the same as for setting up a new configuration. Refer to "Configuring Basic Sessions" on page 20 and change the configuration information as required.
4. After you make all the necessary changes, select **OK** in the Customize Communication window.

5. The following message might appear:

Because you have changed the configuration,
communication will be terminated if you
proceed. Are you sure?

If you select **OK**, communication ends, but then you are reconnected using the new configuration. If you select **Cancel**, you will be returned to the Customize Communications panel and the values you previously entered remain as the current values.

6. Select **Save** or **Save As** from the File menu to manually save your configuration.

When you select **Save As**, the Save Workstation Profile As window appears. Specify each item and then select **OK**.

Note



If you select **Save on Exit**, from the File menu, the changes are automatically saved to the existing workstation profile each time you exit this session.

Chapter 5. Using Sessions

This chapter describes how to start and stop single and multiple sessions.

If your configuration information was saved, as described in “Saving Configuration Information” on page 44, it is stored in a workstation profile (*.WS). If you have a session icon, you can double-click it to start a session, using the saved configuration information.

Note: If you are a first-time user of Personal Communications, or there are no session icons in your Personal Communications folder, refer to “Chapter 4. Configuring Sessions” on page 19, to create a configuration.

Starting Sessions

You can use the following methods to start sessions:

- Select an already-configured session icon.
- Start from an existing session window
- Specify a workstation profile name on the OS/2 command prompt. For example:

```
C:\PCOMOS2\PCSW.S.EXE C:\PCOMOS2\PRIVATE\MY.WS
```

- Start multiple sessions with a batch file

When you start multiple sessions, the titles of session windows are Session A, Session B, and so on, unless you’ve customized them.

Starting by Selecting the Session Icon

To start a session, double-click the **Session** icon. (This icon has the same name as the workstation profile if you did not specify a name for it.)

The session starts.

Starting from a Session Window

Use the following methods to start from an existing session window:

- Start another session using the same workstation profile
- Start another session using another workstation profile
- Start a different type of session using the same session window

Starting Another Session Using the Same Profile

Select **Run the Same** from the File menu. Another session starts, using the same profile.

Starting Another Session Using a Different Profile

1. Select **Run Other** from the File menu.

The Open Other Workstation Profile window appears.

2. Double-click the desired workstation profile in the **File Name** list.
3. Select **OK**.

Another session starts, using the profile specified in step 2.

Starting a Different Type of Session from a Session Window

- Select **Open** from the File menu.
- Specify the desired workstation profile and then select **OK**.

The current session ends and then another session starts, using the selected profile.

Starting a Workstation Profile from the OS/2 Command Prompt

To start the session, type the following command on the OS/2 command prompt and then press Enter.

```
C:\PCOMOS2\PCSWS.EXE C:\PCOMOS2\PRIVATE\MY.WS
```

The session starts, using the specified workstation profile.

Starting Multiple Sessions

You can use the batch program, which runs batch files (*.BCH), to start two or more workstation profiles at the same time. Personal Communications batch files can also start other programs when you include their startup commands. This is especially useful if you always want to start an application when you start a session. For example, you might want to start an application, such as ZipPrint, that uses a Personal Communications API.

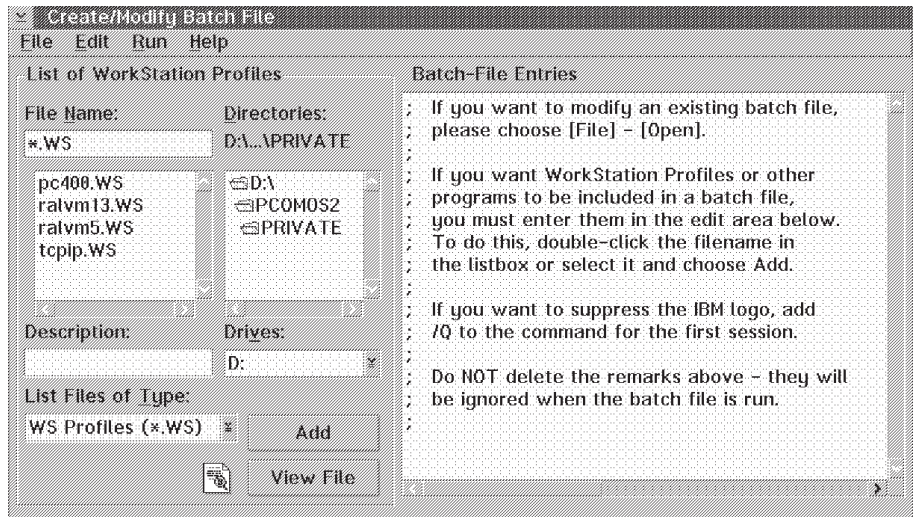
If you created an icon for your batch file, you can start workstation profiles and other programs in the batch file just by double-clicking the icon.

Creating a Batch File

To create a batch file:

1. Double-click the **Multiple Sessions** icon.

The Create/Modify Batch File window appears.



2. There are four methods for including profiles or programs in a batch file. Use the method you prefer
 - Double-click the file names in the **File Name** list box.
 - Drag and drop the file names with the right mouse button from the **File Name** box to **Batch-File Entries**.
 - Select a file name from the **File Name** list box and then select **Add**.
 - Type the complete path and command file name in the edit area.

Personal Communications places the full path and command that is needed to run the workstation profile or other program above the cursor line in the edit area. If there is no cursor, the command will be added to the last line.

To see the contents of the profile you added to the batch file, click it in the **File Name** list box and then click **View File** or the magnifying glass.

Note



Some brief instructions appear at the top of **Batch-File Entries**; you need not remove them because they do not affect the running of the batch file.

3. Repeat step 2 on page 49 for each subsequent file to be added.

PCSW.S.EXE Options

- To suppress the IBM logo when you start one or more sessions, add the parameter **/Q** to the first command in the batch file:
`C:\PCOMOS2\PCSW.S.EXE C:\PCOMOS2\PRIVATE\TCPIP1.WS /Q`
- To start a session as an icon, not as a window, add the parameter **/I** to the command in the batch file:
`C:\PCOMOS2\PCSW.S.EXE C:\PCOMOS2\PRIVATE\TWINAX.WS /I`
- To start a session with a specific short session ID, insert the parameter **/S=m** after PCSW.S.EXE in the batch file:
`C:\PCOMOS2\PCSW.S.EXE /S=m C:\PCOMOS2\PRIVATE\LAN1.WS`

where *m* is the short session ID.

Note: If you use the **/S** option to assign A as the short session ID, you should use this option for all of the sessions in the batch file. Otherwise, if another session starts first, it becomes the A Session and the session with the **/S=a** option will not start because of the conflicting short session IDs. Another way to prevent conflicts is to assign a character later in the alphabet for the short session ID.

4. When you complete the edit, save the created batch file by selecting **Save** from the File menu.
The Save Batch File As window appears.
5. Enter a name for the batch file (*.BCH).
The name you enter is used as the icon title, unless you enter a description as well.

Note



When the file name is used for the icon title, it appears in uppercase and is restricted to 8 characters.

6. Select **OK** to continue.
7. Select **Yes** if you want to create an icon for the batch file.

A message appears, asking you to save the batch file.

8. Select **OK**.

The following two examples are of batch files that sequentially run four workstation profiles, saved in the C:\PCOMOS2\PRIVATE directory, and then run **MYAPP.EXE**.

Sample PC/3270 Batch File

```
C:\PCOMOS2\PCSW.S.EXE /S=b C:\PCOMOS2\PRIVATE\COAX1.WS /Q
C:\PCOMOS2\PCSW.S.EXE /S=a C:\PCOMOS2\PRIVATE\COAX2.WS /I
C:\PCOMOS2\PCSW.S.EXE /S=d C:\PCOMOS2\PRIVATE\SLAN1.WS
C:\PCOMOS2\PCSW.S.EXE /S=c C:\PCOMOS2\PRIVATE\SLAN2.WS
C:\APPL\MYAPP.EXE
```

Sample PC400 Batch File

```
C:\PCOMOS2\PCSW.S.EXE /S=b C:\PCOMOS2\PRIVATE\AS4X1.WS /Q
C:\PCOMOS2\PCSW.S.EXE /S=a C:\PCOMOS2\PRIVATE\AS4X1.WS /I
C:\PCOMOS2\PCSW.S.EXE /S=d C:\PCOMOS2\PRIVATE\AS4Y1.WS
C:\PCOMOS2\PCSW.S.EXE /S=c C:\PCOMOS2\PRIVATE\AS4Y1.WS
C:\APPL\MYAPP.EXE
```

Using a Batch File

You can use one of the following methods to run a batch file:

- Double-click a batch file icon.
- Run the batch file from an OS/2 command prompt:
[drive]:\[path]\PCSBAT.EXE [drive]:\[path]\xxxx.BCH /R

Note: To run a batch file, specify the **/R** option.

- Double-click the **Multiple Sessions** icon.
- Select **Open** from the File menu in the Create/Modify Batch File window.
- Select the desired batch file and then select **OK**.

The contents of the batch file appears in the edit area.

- Select **Run** from the Run menu.

Editing an Existing Batch File

To edit an existing batch file:

1. Double-click the **Multiple Sessions** icon.
The Create/Modify Batch File window appears.
2. Select **Open** from the File menu.
The Open Batch File window appears.
3. Select the batch file you want to edit and then select **OK**.

The contents of the batch file you selected appear in the edit area of the Create/Modify Batch File window.

4. Edit the batch file. Refer to step 2 on page 49 for more details.
Refer to the online help for details about the menu bar Edit functions.
Select **Index** from the Help menu and then select **Menu-Bar Commands of the Batch-Program Window**.
5. When you complete the edit, save your changes by selecting **Save** or **Save As** from the File menu.
 - Select **Save** to save your changes in the existing file.
 - Select **Save As** to save your changes in a new file and then continue with step 5 on page 50
6. Exit the Create/Modify window.

Starting Multiple Sessions without a Batch File

To start multiple sessions without a batch file:

1. Double-click the icon for the session you want to start first.
2. After it connects to the host, select one of the following choices from the File menu:
 - **Run the Same...** to start another session with the same configuration.
 - **Run Other...** to start a session with a different configuration.

When the Open Other Workstation window appears, select the profile you want to start and then select **OK**.

Automatically Starting Sessions

To start one or more sessions automatically when OS/2 starts:

1. Open the OS/2 Startup folder.
2. Drag the session icon or the batch icon to the Startup folder.

Stopping Sessions

To stop a session, double-click the upper left corner of the session window, or select **Exit** from the File menu.

To stop multiple sessions at the same time, select **Exit All** from the File menu. All sessions end, and the associated session windows are closed.

Before Stopping a Session



If you perform this operation while a host application program is running, your session stops and you lose your connection to the program. Therefore, make sure you exit any host application programs-the system sign-on panel should appear in the session window-before you exit the session.

By default, your current configuration information is saved when you exit the session.

Chapter 6. Managing Personal Communications Resources

Managing Sessions

Personal Communications provides the following functions, in addition to those provided by OS/2, for those who work with several open session windows simultaneously. These functions allow you to manage your session windows easily and quickly.

Jump Use **Jump** to switch between the currently opened session windows. You cannot use Jump to switch to a session window that is currently hidden. Instead, select **Show** from the Window menu to display the session window on the screen. Then, select **Jump**.

Hide Use **Hide** to stop displaying a visible session window. You cannot hide all sessions. At least one session is always shown.

Note: Windows hidden with **Hide** are not displayed in the OS/2 task list.

Show Use **Show** to display a session window that was previously hidden with **Hide**.

View Use **View** to display a previously-saved arrangement of windows, or to save an arrangement of windows.

Personal Communications can save and restore the following information relating to the session window view:

- Position and size of each window
- Window status (standard, minimized, or maximized)
- Window font

You can save view information for up to eight windows.

Managing Access Feature Resources

Subsystem Management is an online facility that monitors and controls the communications resources of Access Feature. This allows you to adjust these resources to improve the efficiency of SNA communication services or to monitor and test these services during problem determination. The changes that you make while using Subsystem Management are not permanent and do not affect the configuration file.

Note:Refer to the *Personal Communications Reference* for more information on subsystem management.

Getting Help

For more information about managing session windows, refer to the online help:

1. Select **Procedures** from the Help menu.
2. When the help window appears, search for managing or scroll down to **Managing Workstation Windows**.

Select choices from that list for detailed information.

Chapter 7. 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.

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



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.

For more information about printing, refer to *Personal Communications Reference* or the online *Information Notebook*.

Chapter 8. Editing

You can edit the contents of your session window using the OS/2 clipboard and the Edit menu. You can also link the session window with an OS/2 or a Windows application program by running **CopyLink** and **PasteLink**.

Note: The command you should use for **PasteLink** depends on the application program you are using.

Editing by Linking to OS/2 or Windows Application Programs

Linking to OS/2 or Windows application programs supporting **PasteLink** lets you paste session-window data to the windows of those application programs. You can run **CopyLink** when DDE/EHLLAPI is usable.

Confirming the DDE/EHLLAPI Settings

To check whether DDE/HLLAPI is currently set to usable status:

1. Select **API Settings** from the File menu.
The API Settings window appears.
2. Make sure the **DDE/EHLLAPI** check box is selected.
If the box is checked, DDE/EHLLAPI is set to usable status. Continue to step 4.
3. If the box is not checked:
 - a. Click the **DDE/EHLLAPI** check box and then click **OK**.
 - b. Stop and then start your session to enable the new settings.
4. If DDE/EHLLAPI was already set to usable status, select **OK**.

Using CopyLink and PasteLink

To use **CopyLink** and **PasteLink**:

1. Mark the session window area for which **CopyLink** should be issued.
2. Select **CopyLink** from the Edit menu.
If the session window is already linked with an OS/2 or Windows application program, **CopyLink** appears in gray and cannot be selected. In this case, force the application program to end the linkage, or stop the application program. Then you can select **CopyLink**.
3. Start the OS/2 or Windows application program for the window to which an area should be copied.
4. Specify the location for which **PasteLink** should be run.
5. Issue **PasteLink** by using the menu for the application program.

The contents of the marked area are pasted into the specified location in the window of the application program.

CopyLink is now completed.

When the contents of the marked area in the session window are updated during linking, the contents of the area pasted to the window of the linked application program are also updated.

Copying Table Data to a Spreadsheet

You can use the **Cut**, **Copy**, **CopyLink**, or **CopyAppend** choices in the Edit menu to copy data in the session window to the window of an OS/2 or Windows spreadsheet application program.

To use **Copy**, select the **Paste** or **PasteLink** choice in the application program window into which data is to be copied.

Data in the marked area can be copied in the following three data formats, depending on the format supported by the spreadsheet for the window to which data is to be copied:

Sylk format

Data format for general-purpose spreadsheets, such as Multiplan**

Biff3 format

Data format for Microsoft** Excel**

Wk3 format

Data format for Lotus** 1-2-3**

Note: Whether application programs, such as Excel or Lotus 1-2-3, also support these data formats in subsequent versions depends on individual application program specifications.

Individual items of data in tables of the session window are divided automatically such that they are suitable for spreadsheets, and they are copied into individual cells of tables in the application program.

Copying Marked Data without Dividing It into Cells

To paste data in the marked area per line, without dividing it into individual cells, add the following lines to the workstation profile:

```
[Edit]
Sylk=N      (If Sylk format data is not divided into cells)
Biff3=N     (If Biff3 format data is not divided into cells)
Wk3=N       (If Wk3 format data is not divided into cells)
```


Copying Lines Containing Only Operational Signs

If data in the marked area contains signs, such as +, -, =, or |, the signs are regarded as being ruled lines of the table. Once they are removed, only numeric data is copied.

	1	2	3	4
1990	60	-63	71	58
1991	69	69	90	80
1992	71	80	80	-30

Table Data in the Marked Area

Copy ►

	1	2	3	4
1990	60	-63	71	58
1991	69	69	90	80
1992	71	80	80	-30

Spreadsheet

To copy these signs without replacing them with null characters, add the following lines to the workstation profile:

```
[Edit]
MaskGridCharacter=N
```

Copying Data in Cells As Text Data

Data in the marked area is treated as numeric data by default. Therefore, currency signs, such as \$, and punctuation marks, such as commas, are removed before copying. To copy data containing such signs and marks as text data rather than numeric data, add the following lines to the workstation profile:

```
[Edit]
ConvertToNumeric=N
```

Data in the marked area containing signs and marks is then copied as text data. In addition, all numeric data that does not contain signs and marks is also copied as text data.

Getting Help

For information about all the tasks you can perform with the Edit menu choices, as well as how to mark and then edit an area within the window, refer to the online help:

1. Select **Index** from the Help menu.
2. When the help window displays, select **Menu Bar Commands of the Workstation Window**.
3. Select **Edit** from the list of Menu Bar Commands.

Chapter 9. Transferring Files

Personal Communications File Transfer enables the transfer of one or more files between a host system and workstation. You can define file transfer options in advance to help you transfer a variety of files quickly and easily.

File Transfer is quite different from the PC400 function, Data Transfer, which is described in “Chapter 12. Data Transfer (PC400 Only)” on page 75 . 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
¹ OS/400 provides the host transaction program for Data Transfer.				

With Personal Communications, you can perform the following file transfer functions:

Send files to the host system

Send files using the Transfer menu or, from 3270 sessions, the SEND command from an OS/2 command prompt.

Receive files from the host system

Receive files using the Transfer menu or, from 3270 sessions, the RECEIVE command from an OS/2 command prompt.

Create, test, replace, and delete templates

Create a template to have Personal Communications automatically generate a workstation or host file name and transfer type when you select a file to be sent or received.

Define transfer types

Define up to 16 transfer types for each host system. Text, binary, and append (except for CICS) are initially set as transfer types.

Select, create, and customize translation tables

Select translation tables to define which translation table is used during file transfer.

Import or export files (PC/3270 only)

Import/Export is an office system communication program and an application program run on the IBM Customer Information Control System (CICS). The import/export function makes it possible to import or export Final Form Text (FFT), Revisable Form Text (RFT), and PC documents.

When you export a file from the host, your workstation receives the file you exported and an interchange document profile (IDP) file. Before you can import a file to your workstation, you need to create an IDP file with transmission information.

Create interactive document profile (IDP) files (PC/3270 only)

An IDP file contains document header information, has the same name as the file to be transferred, and has the extension .IDP.

To create an IDP file, select **Setup** from the Transfer menu.

Host Requirements

Before you can send or receive files one of the following file transfer programs must be installed on the host system.

For 3270 session SBCS mode File Transfer, you need one or more of the following host file transfer programs, commonly referred to as IND\$FILE:

- IBM 3270-PC File Transfer Program, 5665-311 (MVS/TSO)
- IBM 3270-PC File Transfer Program, 5664-281 (VM/SP)
- IBM 3270-PC File Transfer Program, 5798-DQH (CICS/MVS)

For 3270 session DBCS mode File Transfer, you need one or more of the following host file transfer programs, commonly referred to as APVUFILE:

- VM/CMS File Transfer Program, 5799-PGX, 5799-BWK (in Japan)
- MVS/TSO File Transfer Program, 5799-PGY, 5799-BWJ (in Japan)
- CICS (MVS, VSE) File Transfer Program, 5799-PGZ, 5799-BWL (in Japan)

For 5250 session SBCS mode File Transfer, you need the following host file transfer program, commonly referred to as APVAFILE:

- Personal Communications Tools Program Package (APVAFILE)
 - 1/4-inch tape 85G9969
 - 1/2-inch tape 85G9973
 - 8-mm tape 46H8353

For 5250 session DBCS mode File Transfer, you need one of the following host file transfer programs:

- Personal Communications Tools for OS/400, 5799-FPZ
- Personal Communications Tools/400, 5799-QBX (in Japan)

Getting Help

For more information about transferring files, refer to the online help:

1. Select **Procedures** from the Help menu.
2. When the help window displays, search for transfer or scroll down to **Transferring Files**.
3. Select choices from that list for detailed information.

Chapter 10. Setting Up a Session Window's Appearance

You can use the following functions from the Appearance menu to define the appearance of your session window:

Display Setup

Customize a variety of characteristics, such as the cursor, pointer, rule line, and trimming styles, graphics, sound, DBCS, and color palette, in the display session.

Color Mapping

Set the colors used in session windows.

Font Choose the font to use for display session windows, the style, and whether it will be an automatic sizing font or a fixed size font. If you use a fixed size font, you can also choose its size. The set of fonts from which you can choose depends on the type of display you are using.

Note: You cannot change the font size when the session window is maximized.

Window Setup

Change the appearance and title of the session window and change the session icon.

Tool Bar

Add, delete, move, copy, and rearrange buttons on the tool bar. You can also add or delete titles and borders for each tool bar item.

The settings are stored in a workstation profile.

Tool Bar Setup

The tool bar displays under the menu bar in your session window to allow quick access to the Personal Communications functions, commands, and defined macros.



If you used USER1.MAC, USER2.MAC, or USER3.MAC in Version 4.0, Personal Communications automatically adds icons for them on the tool bar. Otherwise, the default tool bar does not contain icons for macros.

Use the tool bar pop-up menu to quickly and easily create, edit, and delete tool bar items, as well as to save and load customized tool bars. When you customize the tool bar, you can change the order of items, add and delete items, change the function, title, or graphic associated with any item, change the fonts, colors, and other tool bar visual style elements.

To customize your tool bar, select **Tool Bar** from the Appearance menu, or display the Tool Bar pop-up menu by clicking on the right mouse button while pointing at any part of the tool bar.

For information about customizing the tool bar, refer to the online help from the Tool Bar Setup window.

If you want to hide the tool bar, refer to “Showing or Hiding the Menu Bar and Tool Bar”.

Showing or Hiding the Menu Bar and Tool Bar

You can show or hide the menu bar or tool bar. To do this:

1. Click the top-left corner of the session window to display the system menu.
 - **Hide Menu Bar** appears when the menu bar is shown
 - **Show Menu Bar** appears when the menu bar is not shown
 - **Hide Tool Bar** appears when the tool bar is shown
 - **Show Tool Bar** appears when the tool bar is not shown
2. To hide either the menu bar or tool bar, select **Hide Menu Bar** or **Hide Tool Bar**.
3. To show either the menu bar or tool bar, select **Show Menu Bar** or **Show Tool Bar**.

If you hide the menu bar, the Popup Menu Bar choice is added to the system menu. The Popup Menu Bar shows a cascading menu that contains all commands in the hidden menu bar.

Getting Help

If you're not sure how to set the session window's appearance options, view the detailed instructions in the help.

1. Select **Procedures** from the Help menu.
2. When the help window appears, search for appearance or scroll down to **Changing the Screen Appearance**.

Select choices from that list for detailed information.

Chapter 11. Setting Up and Using the Assist Functions

Personal Communications provides auxiliary functions that help you perform tasks in your display sessions more efficiently. Select these functions from the Assist menu of the session window.

- Keyboard/Macro functions
- Hotspots setup
- Keyboard setup
- Pop-Up keypad setup
- Mouse setup
- Macro functions
- Browser setup

Keyboard/Macro Functions

A **Keyboard/Macro Function** lets you play macros or use Personal Communications-supplied key functions without using the keyboard. Run the macros or key functions from the current cursor position in the session window.

Key Functions

Personal Communications provides many key functions that can be assigned to the keys on the keyboard, the mouse buttons, or the buttons of the pop-up keypad. You can also use them in macros.

Hotspots Setup

A *hotspot* is an area of the session window on which you can double-click the left mouse button to perform a command or function. You do not need to use the keyboard. For example, you can double-click a PF key number to perform the PF key function.

3D Hotspots



Select **Show hotspots** to get 3D hotspots; these only require a single click, and they stand out on your screen.

You can define the following actions for a hotspot:

- Connect to a Web site by clicking on a URL that appears on the screen
- Simulate function keys
- Play a macro that has the same name as the character string you select on the session window
- Enter the selected string at the cursor position
- Simulate the Enter key at the cursor position

Using Hotspots

Note



You must have a mouse to use hotspots.

To use a hotspot:

1. Move the mouse pointer to the hotspot displayed in the session window.
2. Double-click the left button of the mouse, except for 3D hotspots, which only require a single click.

Personal Communications determines whether you have specified a hotspot function that matches what appears at the position of the mouse pointer. If so, it processes the hotspot. When two or more hotspots are specified for a single character string, the *first retrieved hotspot* is processed.

Hotspots are retrieved in the following order:

- (1) Point-and-select (connect to Web site using URL)
- (2) PFnn, FPnn, Fnn, nn
- (3) Point-and-select (run the macro)
- (4) Point-and-select (enter the selected string)
- (5) Point-and-select (enter at the cursor position)

Keyboard Setup

You can use Keyboard Setup to modify the functions defined for each key on the keyboard.

You can define what each shift state of a key does; it can:

- Perform a key function
- Play a macro

- Enter characters

To change your keyboard setup:

1. Select **Keyboard Setup** from the Assist menu.
The Keyboard Setup window appears.
2. Select **Customize**.
3. When the Customize Keyboard window appears, change the key functions as you desire, referring to the online help for detailed instructions.
4. Save the new keyboard layout in a keyboard file (.KMP).

Note

Assigning a function to the PrintScreen key

If you redefine the PrintScreen key, you must disable that key in OS/2 System Setup. Otherwise, the new function will not work.

Assigning the Enter/Ctrl and Reset/Ctrl keys

If you redefine the Enter/Ctrl or Reset/Ctrl keys to another key, neither of the original functions will work correctly.

Note: For a list of the default key assignments, refer to “Appendix D. Default Key Function Assignments” on page 129 .

Pop-Up Keypad Setup

The pop-up keypad is a small window in which some buttons are arranged. To display the pop-up keypad, press the right mouse button or select the Assist menu and then select **Display Pop-Up Keypad**.

Note



You must have a mouse to use the pop-up keypad.

You can allocate the following functions to the buttons:

- A standard key function provided by Personal Communications
- A macro that you have created
- A character string

To perform these functions, you only need to click the pop-up keypad with the left mouse button.

To view the description of each short-name key function or each macro name, click the right mouse button.

Pop-Up Keypad File

You can change the functions, colors, and size of the pop-up keypad. You can assign macros, functions, and characters to the keypads. You can save keypad attributes, such as the number of pads, number of buttons, functions, and colors in a file (*.PMP). You can define which pop-up keypad file is allocated to the pop-up keypad.

Using the Popup Keypad

To use a pop-up keypad:

1. With the mouse pointer anywhere in the session window, click the right mouse button. Or select **Display Popup Keypad** from the Assist menu.
2. Select **Pad 1**, **Pad 2**, **Pad 3** or **Pad 4**.
3. Click the required button in the pop-up keypad.

Mouse Setup

The **Mouse Setup** lets you allocate functions to the right and left buttons of the mouse; this enables you to perform the following actions without having to use the keyboard:

- Performing a key function
- Playing a macro
- Placing a character at the current cursor position

Mouse File

You can save the functions defined for the mouse buttons in a mouse file (*.MMP). You can create one or more mouse files and switch between them as required.

Macro Setup

A macro is a sequence of actions and host commands that you can perform with a single command. You can edit an existing macro or create a new macro by selecting **Macro Setup** from the Assist menu.

Using a Macro

You can use a macro in various ways. Table 3 on page 73 lists examples of how you can set up and then use macros.

Table 3. Macro Use Examples and Settings

If you want to...	Do this...
Automatically play a macro when your workstation starts.	Set an automatic start macro.
Play a macro during attachment to a host application.	Start Macro play.
Play a macro with the keyboard or macro function.	Use the Keyboard/Macro Function .
Double-click a hotspot to play a macro.	Set up a Hotspot .
Select a button from the pop-up keypad to play a macro.	Set up the Pop-Up Keypad .
Press the mouse button to play a macro.	Customize a Mouse file.
Press a key on the keyboard to play a macro.	Customize a Keyboard file.

Creating a Macro

To create a macro:

1. Select **Macro Setup** from the Assist menu.
2. When the Macro Setup window appears, select **Customize**.
3. When the Customize Macro window appears, edit the macro. You can enter macro statements directly or select a macro from the list of key actions.

Refer to the online help for detailed information.

4. Save the macro file and then select **OK**.

Macro Statements

You can use the following macro statements when you create a macro:

Key function

Any of the key functions provided

Macro Edit an existing macro or create a new macro; you can nest up to 16 macros.

Character

Any character or string that you type or select.

Character string

Any character strings that you type or select.

Wait condition

Cause the macro to stop for various reasons that you can specify, such as the time or appearance of something in the session window.

Tokens

Commands, such as GOTO and RUN to add logic.

SEND/RECEIVE

Initiate a file transfer to or from the host system.

Web Browser Setup

Web Browser Setup allows you to select the application that you would like to use to view URLs. If you know the path and filename of the web browser or other viewer that you would like to use, type it in the entry field provided. Otherwise, click on browse to select the application. The selected web browser can then be launched by clicking on a URL hotspot.

Getting Help

For information on how to set up and use the Assist functions:

- Select **Procedures** from the Help menu.
- When the help window appears, search for assist or scroll down to **Using the Assist Functions**.

Select choices from that list for detailed information.

Chapter 12. Data Transfer (PC400 Only)

PC400 Data Transfer enables you to transfer data between an AS/400 system and your workstation. To use the Data Transfer function, double-click the **Data Transfer** icon.

Transferring data is quite different from transferring files, which is described in “Chapter 9. Transferring Files” on page 63.

Requirements



Before you can transfer data with PC400:

- You must have a router session, unless you have an APPC connection via CM/2 or OS/2 Access Feature.
- IBM PC Support/400 (5738-PC1) must be installed on your AS/400 system, unless IBM OS/400 Version 3 or later is installed.

There are two types of data transfer, depending on the direction of the transfer.

Data sending

Data is transferred from your workstation to the AS/400 system. You can transfer data 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: You cannot transfer data from a workstation file to an AS/400 logical file.

Data receiving

Data is transferred from the AS/400 system to your workstation.

While receiving data from the host, you can specify the data to be received and where the data is to be output.

Receivable data includes:

- An entire AS/400 file
- Part of an AS/400 file
- Data combined from several AS/400 files
- Summary of record groups

Specify the following output destinations:

- Display
- Disk
- Printer

Also, you can specify when to receive data (date and time) and the numeric value format.

For more information about data transfer, refer to the *Personal Communications Reference*.

Chapter 13. Shared Folders (PC400 Only)

The AS/400 system uses a structure called a *folder* to store and organize text documents, mail, and other related objects. Personal Communications lets you share these folders and store both AS/400 documents and your workstation files in them.

The Shared Folder function lets you access a folder on the AS/400 system as if it were a drive on your workstation. You can assign up to 8 folders at a time. For example, a folder on the AS/400 system could be assigned to drive E on your workstation; you could then access drive E the same way as you access drive C on your hard drive.

You can use the Shared Folders function to:

- Take advantage of the additional AS/400 storage
- Use AS/400 security to limit access to workstation files
- Share data with multiple users at the same time
- Back up workstation files to an AS/400 folder
- Use OS/2 commands or AS/400 functions to work with workstation files

Requirements

Before you can use the Shared Folders function one of the following programs must have been installed on the AS/400 system:

- Client Access/400 (or OS/400 V3 or later)
- PC Support/400 (5738-PC1)

Starting Shared Folders

To start using Shared Folders:

1. Double-click the **Shared Folders** icon in the Personal Communications folder.

Note: If the IFS driver is not installed, a message asks if you want to install it now. If you do, select **OK** and then shut down and restart your workstation.

The Configure Shared Folders window appears.

2. Select a **Drive** to be assigned to an AS/400 shared folder.

3. Select the **System Name** of the AS/400 containing the shared folder you want to use.
4. Select the **Folder Name** you want to use.

Note: If you want to assign a drive to a lower-level folder, double-click on its upper-level folder from the **Folder Name** list. The lower-level folders in the selected folder appear in the **Folder Name** list.

5. Select **Assign**.

The specified contents are displayed in the **Current Status** box.

You can now work with the contents of a shared folder through the assigned drive.

If you want to keep the same settings for the shared folders each time you use them, you can save them by doing either of the following steps:

6. Select **Save Current Assignments on Exit** from the File menu.

The current settings are saved when you exit the Shared Folders function.

7. Select **Save** from the File menu.

The current settings are saved in the Shared Folder profile (**PCSFLR.INI**).

Releasing Drives

To release assigned drives:

1. Select the drive name you want to release from the **Current Status** box in the Configure Shared Folders window.
2. Select **Release**.

The specified drive disappears from the **Current Status** box.

Considerations and Restrictions

This section describes Shared Folders considerations and command restrictions.

LAN and Switched Line Attachments

When you use a LAN, SNA-over-Async, Hayes** AutoSync, or switched SDLC attachment, you need to modify the controller device description to avoid automatic disconnection of the switched line.

To modify the control device description:

1. Enter **CHGCTLAPPC** on the AS/400 command line.
2. Specify the controller description name for the corresponding router session.

The Change Controller Description (APPC) panel appears.

Change Ctl Desc (APPC) (CHGCTLAPPC)

Type choices, press Enter.

Controller description	> AKI85	Name
Online at IPL	*NO	*SAME *YES, *NO
APPN-capable	*YES	*SAME *YES, *NO
Switched line list	TRNLINE	Name, *SAME
+ for more values		
Character code	*EBCDIC	*SAME, *EBCDIC, *ASCII
Maximum frame size	16393	265-16393, 256, 265, 512...
Remote network identifier . . .	APPN	Name, *SAME, *NETATR...
Remote control point	AKI85	Name, *SAME, *NONE, *ANY
SSCP identifier	*SAME	000000000001-FFFFFFFFFFFF...
Initial connection	*DIAL	*SAME, *ANS, *DIAL
Dial initiation	*LINKTYPE	*SAME, *LINKTYPE, *IMMED...
Switched disconnect	*NO	*SAME, *YES, *DIAL
Disconnect timer:		
Minimum connect timer	170	0-65535 seconds
Disconnection delay timer . .	0	0-65535 seconds
More...		
F3=Exit F4=Prompt F5=Reshow F12= Cancel F13=How to use this display		
F24=More keys		

3. Type ***NO** in the **Switched disconnect** field and then press Enter.
The following panel appears.

Change Ctl Desc (APPC) (CHGCTLAPPC)

Type choices, press Enter.

APPN minimum switched status . .	VRYONPND	*SAME, VRYONPND, *VRYON
Autodelete device	1440	1-10000, *NO, *SAME
User-defined 1	*LIND	0-255, *LIND, *SAME
User-defined 2	*LIND	0-255, *LIND, *SAME
User-defined 3	*LIND	0-255, *LIND, *SAME
Restore limits:		
Count limit	2	0-99, *SAME, *SYSVAL
Time interval	5	0-120 (minute)
Model controller description . .	*NO	*SAME, *YES, *NO
Connection network network ID . .	*SAME	Name, *SAME, *NETATR, *NONE
Connection network CP	> *SAME	Name, *SAME, *NONE
Control owner	*USER	*SAME, *USER
Text 'description'	'AUTOMATICALLY CREATED BY QLUS'	
Bottom		
F3=Exit F4=Prompt F5=Reshow F12= Cancel F13=How to use this display		
F24=More keys		

4. Type ***USER** in the **Control owner** field and then press Enter.

Commands You Cannot Use

There are some commands that you cannot use when working with folders; for example:

CHKDSK	FDISK	RECOVER
DISKCOMP	FORMAT	SUBST
DISKCOPY	JOIN	

When you are using Shared Folders, you cannot use workstation applications that do direct sector input/output to your hard disk.

Commands with Restrictions

The following commands have restrictions when working with shared folders.

BACKUP

If two drives are assigned to the same folder, do not attempt to back up the folder from one drive to the other.

BREAK

BREAK must be enabled (BREAK=ON) for the **Ctrl+Break** sequence to work properly with a shared-folders operation.

COMP

When you use the COMP command to compare multiple files and the target file is in a folder, the shared folder is not closed until the COMP program completes.

COPY, XCOPY

Files cannot be copied to the root directory of a folder name.

EAUTIL

Two options are restricted.

- You cannot use the **/J** option to join extended attributes to an object in a folder.
- When you use the **/S** option to split extended attributes from an object in a folder, the size of the extended attributes in the object is not set to zero, because the AS/400 system retains the part of the extended attributes that includes the document-library object information.

To avoid these restrictions, copy the object to your hard drive and run the **EAUTIL** command from there.

Chapter 14. PC Organizer (PC400 Only)

You can use the PC Organizer to run OS/2 commands and applications, DOS commands and applications, or Windows applications from a 5250 display session.

AS/400 Requirements

Before you can use the PC Organizer, one of the following programs must have been installed on the AS/400 system:

- Client Access/400 (or OS/400 V3 or later)
- PC Support/400 (5738-PC1)

Starting the PC Organizer

To start the PC Organizer:

1. Start a 5250 display session.
2. Sign on to the AS/400 system.
3. Enter the following command on the AS/400 command line:

STRPCO PCTA(*NO)

Note



PC400 does not support the PC Text Assist (**PCTA**) function, so you should specify this parameter with ***NO**. Even if you specify ***YES**, you cannot use the PC Text Assist function provided by the PC Support/400 Workstation Feature.

You can now use the PC Organizer functions in a 5250 display session by using one of the following methods:

- Display and then select choices from the menu.

To display the PC Support/400 or Client Access/400 Organizer menu, enter:

GO PCOMNU

- Enter PC Organizer commands.
To start the PC Organizer functions, enter:
STRPCCMD

PCO.EXE Message

When you run a workstation command, program, or DisplayWrite 5/2, you might receive a message that the **PCO.EXE** program is not active. You can ignore this message, because it is not necessary for PC400 to activate **PCO.EXE**

Getting Help

Refer to the online help for more information about using the PC Organizer.

1. Select **Procedures** from the Help menu.
2. When the help window appears, search for organizer or scroll down to **PC Organizer (5250 Session)**.

Select topics in the list to view information about starting and using the PC Organizer, using the PC Organizer menu, and the differences between the PC Organizer provided with PC400 and PC Support/400.

Chapter 15. Text Assist (PC400 and SBCS Only)

With Personal Communications, you can use the improved text editing capability of Text Assist provided by the OfficeVision/400 word processing function to create a document or short messages, or to edit an existing document.

For more information about using Text Assist, refer to the documents for the OfficeVision/400 program.

The Text Assist function in Personal Communications is a "Controller Text Assist," not the "PC Text Assist" supported by PC Support/400 Workstation Feature.

Controller Text Assist in Personal Communications provides the following functions that are not included in PC Text Assist:

- Line commands
- 132 columns

Controller Text Assist in Personal Communications does not, however, provide the multicolumn edit function that is included in PC Text Assist.

After starting a 5250 display session, you can use the Controller Text Assist function without invoking the **Start PC Organizer (STRPCO)** command at the host.

Note: In the Text Assist environment, Alt key functions are assigned to the Ctrl key state to avoid conflicts with existing emulator functions. For example, the Word Underscore (WrdUnd) key is Ctrl+W rather than Alt+ W. Many of these functions can be remapped to the Alt key state without conflicting with emulator functions.

When you draw a line using the cursor draw option of the OfficeVision/400 program, the insert mode is not available.

AS/400 Software Requirements

The AS/400 system must have one of the following programs installed to support the Text Assist features:

- OS/400 V2R2.0 with cumulative PTF C3285220 with PTF SF14687
- OS/400 V2R3.0 with PTF SF14495
- OS/400 V3R0.5
- OS/400 V3R1.0, or later

Text Assist Key Functions

Following is a list of OfficeVision/400 Text Assist key functions:

Function	Description
Begin of Line	Moves the cursor to the beginning of the line
Begin Bold	Begins bold highlighting
Bottom of Page	Moves the cursor to the bottom of the page
Carrier Return	Ends a line of text or a paragraph by inserting a carrier return
Center Text	Centers a line of text
End of Line	Moves the cursor to the end of the line
End of Page	Inserts an "end of page" character at the cursor position
End Bold/Underscore	Ends bold highlighting and underlining
Half Index Down	Begin subscript or end superscript
Half Index Up	Begin superscript or end subscript
Insert Symbol	Displays a menu for special symbols
Display Text Codes	Shows hidden text controls
Next Column	Inserts a "next column" instruction at the cursor position.
Next Stop Code	Moves the cursor to the next stop code symbol
Required Backspace	Moves the cursor one space to the left
Required Space	Inserts a required space to keep words together on a line
Required Tab	Indents a block of text

Function	Description
Stop Code	Inserts a stop code at the cursor position
Top of Page	Moves the cursor to the top of the page
Begin Underscore	Begins underlining text
Word Underscore	Underlines the word that starts at the cursor position

Getting Help

Refer to the online help for more information about the Text Assist functions:

1. Select **Keyboard** from the Help menu.
2. Select **Search** and then type text assist in the Search for field.
3. Select the **All sections** radio button and then select **Search**.

Select from the list of Text Assist key functions in the Search window for more information.

Chapter 16. Where to Find 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 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 OIA 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 the *Personal Communications Reference*.

Security-Related Messages

Personal Communications optionally utilizes Secure Sockets Layer (SSL) to establish sessions with servers; this may require input from you (for example, a password). Refer to *Personal Communications Reference* for details.

OIA Messages

Personal Communications displays messages in the operator information area (OIA) or in a pop-up 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.

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

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

Hint



To look up a specific OIA message, select **Search**. When the Search window appears, type the message number in the Search for field and then select **OK**.

Personal Communications Library

The Personal Communications for OS/2 library includes the following publications:

- *IBM Personal Communications Quick Beginnings*, GC31-8795
- *IBM Personal Communications Reference*, SC31-8796
- *IBM Personal Communications Emulator Programming*, SC31-8660

Note: These books are optionally installed.

In addition to the printed books, there are HTML documents provided with Personal Communications:

Host Access Class Library

This HTML document describes how to write an ActiveX/OLE 2.0-compliant application to use Personal Communications as an embedded object.

Host Access Beans for Java

This HTML document describes Personal Communications emulator functions delivered as a set of Java™ Beans.

Related Publications

For information about local area networks (LANs), refer to the following publications:

- *IBM Local Area Network Technical Reference*
- *AS/400 Communications: Local Area Network (LAN) Guide Version 2*
- Multiple Protocol Transport Services manuals

For information about TCP/IP, refer to the manual for *IBM TCP/IP Version 2.0 for OS/2 Base Kit*.

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 workstation, refer to your workstation manuals.

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

For printer operation information, refer to your printer manuals.

Contacting IBM

This section lists a number of 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 the following information to allow us to serve you better. For information about the tools available to help with problem analysis, refer to the *Personal Communications Version 4.3 Reference*.

- The environment in which the problem occurs:
 - Personal Communications configuration
 - Personal Communications version and CSD level
 - The name of the workstation profile
 - The name of the Access Feature Configuration file (if required)
 - 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 devices installed, such as sound cards, modems, or fax machines
 - Software configuration
 - Windows version and level
 - Communication and device-driver version and level
 - Other communication programs (such as NetWare, Microsoft SNA Server, or Microsoft Data Link Control) that are running and using resources
 - Printer driver version and level
 - Host configuration
 - The upstream host connection and configuration
- Problem analysis information
 - Symptoms
 - Type of problem
 - OIA messages or error messages (if any)
 - Key factors related to the problem

If you have a technical problem, take the time to review and carry out the actions suggested here. Use your local support personnel before contacting IBM. You can also check the Hints and Tips on the WWW for more information. Only persons with in-depth knowledge of the problem should contact IBM; therefore, support personnel should act as the interface with IBM.

Support Options

If you determine that you need to contact IBM, you can do any of the following:

- Access the Personal Communications Web page:
<http://www.ibm.com/software/network/pcomm>
- To find the phone number for IBM Software Support, U.S. customers can call 1-800-IBM-4YOU. International customers that have access to the U.S. "800" toll free numbers can reach the International Support Center by calling 1-800-IBM-4YOU and asking to speak with the International Support Center (ISC) in Atlanta. International customers without access to the U.S. toll free numbers can call the ISC directly at 770-863-1234. The ISC's FAX number is 770-863-3030 and is available 24 hours a day.

Appendix A. Communication Adapters and Modems

This appendix lists the communication adapters and modems that Personal Communications supports. It also describes how to install the software so you can use a PCMCIA adapter card in your workstation.

Note



Personal Communications will continue to provide support for modems in the marketplace by creating preconfigured modem initialization strings. If your favorite modem is not listed here, select a similar one from the list and try that configuration for your modem. If it doesn't work, call IBM Service to have your modem added to the list of modems supported.

Family-1 Communication Adapters

Personal Communications supports the following communication adapters for workstations with an AT-bus.

- Advanced IBM PC 3278/79 Emulation Adapter (PC/3270 only)
- IBM Enhanced 5250 Display Station Emulation Adapter (PC400 only)
- IBM Multiprotocol Communications Adapter for ISA (SDLC)
- IBM Async/SDLC Communications Adapter (SDLC)
- IBM PC Asynchronous Communications Adapter
- IBM PC AT Serial/Parallel Adapter
- IBM PC 3278/79 Emulation Adapter (PC/3270 only)
- IBM WaveRunner Digital Internal Modem (ISA)
- IBM WindSurfer Communications Adapter (ISA)
- IBM 5250 Adapter
- Attachmate 3270 Adapter (PC/3270 only)
- Attachmate ADVANCE 3270 Adapter (PC/3270 only)
- DCA IRMA 3 Convertible 3270 Adapter (PC/3270 only)
- LAN adapters supported by MPTS

Family-2 Communication Adapters

Personal Communications supports the following communication adapters for workstations with a Micro Channel bus.

- IBM Asynchronous/SDLC V.32 Modem/A (MPA card with modem)
- IBM Multiprotocol Adapter IV/A
- IBM PS/2 Multiprotocol Adapter/A
- IBM PS/2 Dual Asynchronous Communication Adapter/A
- IBM S/36/38 Workstation Emulation Adapter/A
- IBM WaveRunner Digital Internal Modem (MCA)
- IBM WindSurfer Communication Adapter (MCA)
- IBM 3270 Connection (PC/3270 only)
- IBM 5250 Emulation Adapter/A
- IBM 5250 Adapter/A
- Attachmate 3270 Adapter (PC/3270 only)
- Attachmate Advance 3270 Adapter/2 (PC/3270 only)
- DCA IRMA 3 Convertible 3270 Adapter (PC/3270 only)
- LAN adapters supported by MPTS

Asynchronous Modems

Personal Communications supports asynchronous modems for Advantis (IIN), IBM Global Network Connection, SNA over Async, and Home3270 connections.

- IBM 5841 (1200bps)
- IBM 5842 (2400bps)
- IBM 5853 (2400bps)
- IBM 7855 V.32
- IBM ASYNC/SDLC V.32 Modem/A
- IBM Internal Data/FAX (2400bps)
- IBM High Speed Internal Data/FAX
- IBM PCMCIA Data/FAX (2400bps)
- IBM PCMCIA 2400bps Data (Japan version)
- IBM 14.4/14.4 PCMCIA Data/FAX
- IBM Push-Pop Modem (Data/Fax 14.4K) (Japan Only)
- IBM WaveRunner Digital Internal Modem
- IBM WindSurfer 14400 Modem
- APEX PCMCIA PCR - 9696
- APEX PCMCIA PCR - 1414

- ARN DX-MC2
- AT&T Paradyne PCMCIA 14.4K Data/Fax for Cellular Mode
- AT&T Paradyne PCMCIA 14.4K Data/Fax for Normal Mode
- Com1 MC217
- Communicate PCMCIA 14400 Fax & Data Modem
- Data Race RediCard High Speed PCMCIA Data/Fax modem
- Digicom Systems Eagle
- Gold Card PCMCIA Modem
- Hayes Smartmodem 1200 compatible
- Hayes Smartmodem 2400 compatible
- Hayes Smartmodem** Ultra 9600
- Hayes Smartmodem Ultra 14400
- Hayes Smartmodem Optima 9600
- Hayes Smartmodem Optima 14400
- Hayes Smartmodem Optima 144 for PCMCIA
- Hayes Smartmodem Optima 28800
- Intel SatisFAXtion 400e
- Megahertz PCMCIA XJ1144
- Microcom QX/423 bis
- MultiTech MultiModem MT1432BLK
- MultiTech MultiModem ZDX for Data & Fax
- Nokia NMP V32bis Data/Fax PCMCIA Modem
- Practical Peripheral PM14400FXSA
- Universal Data Systems FasTalk FAX32
- US Robotics Courier HST Dual Standards
- US Robotics Sportster 14.4 External Modem
- US Robotics Courier 28800 External Modem
- Zoom V.32 bis
- Zyxel U1496E Plus

The following asynchronous modems are only for use with SNA over Async

- AT&T Comsphere 3820
- AT&T DataPort
- Apex Data Internal Modem for TP 350
- Apex Data Internal Modem for TP 700
- Apex Freedom 14/96 Data/Fax Laptop Modem
- Aspen Home and Away Credit Card Modem

- BocaModem 14.4 V.32bis External Modem
- BocaModem 28.8 V.34 External Modem
- Codex 3260 Modem
- Com1 MC216 PCMCIA Modem
- Complete 14400 TurboModem
- CREATIX LC 144 VF High Speed Modem
- CREATIX LC288 FC High Speed Modem
- Data Race Thinkpad Internal Modem
- Data Race RediCARD Internal Modem
- GVC FM-144V External Fax Modem
- GVC SM-96 External Modem
- Hayes ACCURA96 + FAX96 Modem
- Hayes ACCURA 14400 Modem
- Hayes ACCURA 28800 Modem
- Hayes OPTIMA144 + FAX144 Pocket Modem
- IBM 7851 External Modem
- IBM 7852 010 V.34 Data/Fax Modem
- IBM 7852 013 V.34 Commercial Data/FAX Modem
- IBM PCMCIA 28.8/14.4Kbps Data/Fax Modem
- IBM PS/2 14.4Kbps Data/Fax Modem Adapter
- IBM Personal System/2 2400 Internal Modem
- IBM ISA 28.8Kbps Data/Fax Internal Modem
- IBM ThinkPad mWave Modem
- IBM Wireless Modem for Cellular/CDPD (Land line)
- IBM Wireless Modem for Cellular/CDPD (Cellular line)
- Other mWave Modems
- Intel 14.4EX Modem
- Intel PCFM7600 14.4/14.4 External Modem
- Intel SatisFAXtion Modem/400
- Macronix Fax/Modem
- Megahertz XJ196FM PCMCIA Data/Fax Modem
- Megahertz XJ2144 14.4/14.4kbps PCMCIA Gold Series Fax Modem with XJACK
- Microcom AX/9624c Modem
- Microcom DeskPorte FAST Modem
- Microcom MicroPorte 4232bis Portable Modem
- Motorola Codex 3220 Plus

- Motorola Codex 3261 Fast
- Motorola FasTalk 32bx Modem
- Motorola Montana 28.8 Modem/FAX Card
- Motorola UDS FasTalk II Modem
- Motorola UDS V.3229 Modem
- MultiTech 932 Modem
- MultiTech 1432 Modem
- MultiTech 1432Mu Modem
- MultiTech 2834 Series Intelligent Data/Fax Modem
- Practical Peripherals 9600SA Modem
- Practical Peripherals FX PS/2 Internal Modem
- Practical Peripherals MiniTower PC288MT V.34 Modem
- Practical Peripherals PM14400FX PS/2 Internal Modem
- Practical Peripherals PM14400FX Internal Modem
- Practical Peripherals PM14400FX V.32bis Internal Modem
- Practical Peripherals PM1400FX PKT Modem
- Practical Peripherals PM9600FXMT Modem
- Practical Peripherals PM14400FXMT Modem
- Practical Peripherals PM9600MT II Modem
- Practical Peripherals FXSA Modem
- Racal-Datcom ALM3223 Modem
- Racal-Datcom ALM3226 V.32bis Modem
- Rolm 244 PC Telephone
- SupraFAX V.32bis Modem
- Telebit Trailblazer Modem
- US Robotics WorldPort 9600 Modem
- US Robotics WorldPort 14400 Modem
- ViVa 14.4/FAX Modem
- Zenith Data Systems 2000 Laptop Modem
- ZOOM EVFXV32 Modem
- ZOOM EVFXV32 Internal Modem
- ZOOM EVFPV32bis Modem
- ZOOM EVFPV32bis Internal Modem
- ZOOM VFX 28.8 External Modem
- ZyXEL U-1496 Series Universal Modem
- User-Defined Asynchronous Switched Connection Modem

Asynchronous Modems (Hayes AutoSync)

Personal Communications supports the following Hayes AutoSync-compatible modems.

- ARN DX-MC2 PCMCIA/Nota
- AT&T Paradyne PCMCIA Modem
- Apex Data Internal Modem for TP 350
- Apex Data Internal Modem for TP 700
- Apex Data PCMCIA Modem
- Com1 MC216 PCMCIA Modem
- Com1 MC217 AutoSync (CBF)
- CREATIX LC 144 VF High Speed Modem
- CREATIX LC 288 FC High Speed Modem
- Hayes OPTIMA 9600
- Hayes OPTIMA 14400
- Hayes OPTIMA 144 + FAX 144 Pocket Modem
- IBM 701 ThinkPad Internal Modem
- IBM 7852 010 V.34 Data/Fax Modem
- IBM 7852 013 V.34 Commercial Data/Fax Modem
- IBM PCMCIA Data/Fax Modem
- IBM PCMCIA High Speed Data/Fax Modem
- IBM PCMCIA 14.4 kbps Data/Fax Modem
- IBM PCMCIA 28.8/14.4 kbps Data/Fax Modem
- IBM PS/2 14.4 kbps Data/Fax Modem Adapter
- IBM ISA 28.8 kbps Data/Fax Internal Modem
- IBM Wireless Modem for Cellular/CDPD (Land line)
- IBM Wireless Modem for Cellular/CDPD (Cellular line)
- Megahertz XJ1144FM PCMCIA Data/Fax Modem
- Megahertz XJ2144 14.4/14.4 kbps PCMCIA Gold Series Fax Modem with XJACK
- Practical Peripherals PM14400FX PS/2 Internal Modem
- Practical Peripherals PM14400FX V.32 bis Internal Modem
- Practical Peripherals PM9600FXMT Modem
- Practical Peripherals PM14400FXMT Modem
- User-Defined AutoSync Switched Connection Modem

Synchronous Modems (SDLC)

Personal Communications only supports the bit-oriented (HDLC) toptocol for V.25 bis call control messages. Modems must support an ASCII-coded character set consisting of 7-bit characters with odd parity.

PCMCIA Communication Adapters

Personal Communications supports the following PCMCIA communication adapters.

- IBM 3270 Emulation Credit Card Adapter (PC/3270 only)
- IBM 5250 PCMCIA Adapter Card
- Refer to Async and AutoSync modem lists for PCMCIA modem adapters.
- PCMCIA LAN adapters supported by MPTS.

Installing PCMCIA Support

If your workstation uses PCMCIA cards, the software that enables these cards to work must be installed on your workstation. This software consists of two main layers, Socket Services and Card Services, and some device drivers that are associated with them.

Note:Card Services and Socket Services are provided by OS/2.

The device drivers required depend on the version of OS/2 and the type of workstation that you have.

For OS/2 Warp:

PCMCIA.SYS

Card Services

IBM2SS01.SYS

Socket Services¹

Sequence and Position of the Drivers

The sequence in which the PCMCIA device drivers are loaded is critical; normally, this will be taken care of by the program that installs them but, if you have a problem, you should ensure that the sequence is correct.

OS/2 Warp:

```
BASEDEV=PCMCIA.SYS /P
:
DEVICE=C:\OS2\BOOT\COM.SYS
```

1. For some IBM computers; similar drivers are provided for others.


```
      :  
BASEDEV=IBM2SS01.SYS /S0=2  
      :  
DEVICE=C:\IBMCOM\MACS\IBMTOKCS.OS2
```

Personal Communications Device Drivers

Some attachment types need a device driver; when you configure any of these attachments, Personal Communications installs the appropriate driver. The driver must be loaded after the PCMCIA device drivers, so the configuration program adds them (in DEVICE= statements) at the end of CONFIG.SYS:

```
PCSCOAX.SYS (DFT)  
PCSTDLC.SYS (Twinax)
```

Refer to the Communications Server Command Reference for a list of Access Feature device drivers.

Appendix B. Attachment Considerations

This appendix describes factors you should consider when configuring Personal Communications for the attachment types listed here.

COAX Attachment

This section describes factors you should consider when configuring Personal Communications with a coaxial attachment.

Avoiding Machine Check 207

Patch the microcode of the 3174 control unit. The following table shows the relationship between 3174 control unit microcode levels and patch IDs:

Microcode Level	Patch ID
S0503	PCA53D1
S0504	PCA53D2
A0503	PCA53D3
A0504	PCA53D4
B0200	PCA53D5
B0401	PCA53D6
B0402	PCA53D8
C0101	PCA53D7

In addition, if you have a 3174 with Configuration Support B or higher, you can set the following parameters:

- 3174 customization Q126 digit 2=1 to change the COAX timeout from 50 to 100 microseconds.
- 3174 customization Q125 digit 4=1 to set command chaining off.

Polling Feature

Certain ISA-bus workstations disable interrupt-level 2 (IRQ 9) and reserve it for their own use. IRQ 9, a redirected IRQ 2, is the only interrupt level that can be used by the IBM 3278/79 emulation adapter. Sometimes, when you try to use PC/3270 for coaxial attachment with this type machine, you cannot connect to a host system.

If this happens, add the **Poll=Y** parameter to the [CSDFT], [CNDFT], or [CUT] (*.WS) as follows:

- SNA/DFT attachment

```
[CSDFT]
Poll=Y      <-- add
```
- Non SNA/DFT attachment

```
[CNDFT]
Poll=Y      <-- add
```
- CUT attachment

```
[CUT]
Poll=Y      <-- add
```

Running PC/3270 on a PS/VP with a Coaxial Attachment

The PS/VP system unit uses IRQ 9 for AT applications that use video retrace; IRQ 9 conflicts with the IBM 3278/79 emulation adapter. To use the 3278/79 emulation adapter, remove a jumper (the function of which is "Video Interrupt (IRQ9) enable"), from the system board. The jumper varies according to the model of PS/VP, here are some examples:

```
PS/VP 6381 /Si 425SX and 433SX : Jumper J23
PS/VP 6381 /Si 433DX and 466DX2 : Jumper J14
```

Ask your IBM dealer for information about other models.

Also, you can use the PC/3270 Coax Polling feature described on page "Polling Feature" on page 101 .

Functions Not Available with CUT Attachment

When the workstation is configured by CUT attachment, the following functions cannot be used:

- File transfer
- API (DDE,EHLLAPI,SRPI) function
- Host graphic function
- Edit functions, except for copy and copy append
- Host print function

Controller Language for CUT Attachment

Only American English and Austrian/German are supported as the controller language. The controller language can be retrieved by controller customization question number 121.

PCMCIA Configuration for a DFT or CUT Attachment

If your workstation has an IBM 3270 Emulation Credit Card Adapter (3270 CCA) installed, Personal Communications uses it in the same way as the IBM 3278/79 Emulation or 3270 Connection Adapter, but configuration of the card and of the 3270 sessions is more complicated. When you use 3270 CCA with a

token-ring credit card adapter, you must change the interrupt level of the token-ring card through the IBM LAN Adapter and Protocol Support (LAPS) configuration. PCMCIA support must be loaded by the OS/2 Install Program before you use the IBM 3270 CCA adapter to connect.

LAN via IEEE 802.2 Attachment

Following is a description of preinstallation considerations for installing Personal Communications for use on a LAN. Refer to MPTS and LAN adapter documentation for detailed information on installing and configuring 802.2 support for the adapter.

Maximum I-Field (PIU) Size

This value is negotiated between your workstation and the host system, unless `XID=No` is defined on the PU. If this value is not negotiated, the Maximum I-Field Size must match the `MAXDATA` value defined on the host system.

Note: The adapter frame size (transmit buffer size) should be set to at least 36 bytes larger than the maximum I-field (PIU) size.

Receive Window Count

This value is negotiated between your workstation and the host system, unless `XID=No` is defined on the PU. If this value is not negotiated, the Receive Window Count must match the `MAXOUT` value defined on the host system.

Using a PCMCIA Token-Ring or Ethernet Card

The IBM Token-Ring and Ethernet credit card adapters are supported in the same way as full-size adapters.

LAN via NetWare for SAA Attachment

You can have 3270 sessions on an IPX/SPX network through a NetWare for SAA Gateway. For this attachment, you need a token-ring, an Ethernet, or a workstation network adapter.

NetWare Client for OS/2

Before you use a PC/3270 LAN via NetWare for SAA connection, install NetWare Client for OS/2 and add SPX Support for OS/2 sessions as optional protocols.

If your workstation is on a token-ring network with source-routing bridge, **ROUTE.SYS** must be specified in your **CONFIG.SYS**. **ROUTE.SYS** is supplied with NetWare Client for OS/2.

For more information, refer to the NetWare Client manual for OS/2.

The default value for the number of SPX sessions is 16. If you want to use more than 16 host sessions, edit NET.CFG and increase the number of SPX sessions.

You should also note the number of IPX sockets. The NetWare Requester requires at least three sockets per server connection, and Personal Communications requires two sockets per host session. The default value for the number of IPX sockets is 64. If you want to use several server connections and host sessions at the same time, you might need to increase the number of IPX sockets.

Example of NET.CFG

```
PROTOCOL STACK SPX
SESSIONS 32

PROTOCOL STACK IPX
SOCKETS 128
```

For more information, refer to the manuals or the online help for the NetWare Client for OS/2.

Using an Asterisk for the Server Name and Service Name

You can enter an asterisk (*) instead of the server name or the service name. However, if you do this and there are several servers on the network, you might access more than one server.

If you have a password-protected user name, you must enter the correct password in the password-entry window.

If there are several NetWare servers on your network and more than one has a definition for the same user name that you specify, the first Password window might be for another server instead of the server that you want to use.

In this case, when you select **Cancel**, the Password window for the next server appears. Repeat this action until you can enter your password for the correct server.

Restrictions

The following functions are not available with this connectivity.

- SDDL (self-defining dependent LUs)
- SNA session-level compression and decompression

TCP/IP Connection

This section provides information, considerations, and restrictions for Personal Communications TCP/IP connections.

Telnet3270 Attachment

Before Telnet3270 attachment is used, TCP/IP Version 2.0 for OS/2 Base Kit or later must be installed. For more information, refer to *IBM TCP/IP Version 2.0 for OS/2: Installation and Administration*.

At the Telnet3270 server in a host system to which you want to connect, IBM TCP/IP for VM or IBM TCP/IP for MVS must be running.

Restrictions

- The following functions are not available with this connectivity.
 - SDDL (self-defining dependent LUs)
 - SNA session-level compression and decompression
 - The maximum packet size must be less than 8000 bytes for file transfer (SBCS only).

Host-Addressable Printing

Host-addressable printing is supported with the Telnet3270 attachment, using the TN3287 or TN3270E protocols. You need to attach through a Telnet3270 server, which supports these protocols.

Screen Size

The following four screen sizes are supported:

24 x 80
32 x 80
43 x 80
27 x 132

Telnet5250 Attachment

Before Telnet5250 attachment is used, TCP/IP Version 2.0 for OS/2 Base Kit or later must be installed. For more information, refer to the *IBM TCP/IP Version 2.0 for OS/2: Installation and Administration*.

Session Type

Telnet5250 supports the display session only.

SDLC Attachment

This section describes factors you should consider when configuring Personal Communications with an SDLC attachment.

Line Speed

For the SDLC attachment, the line speed will vary depending on the carrier speed the modem supports.

V.25 bis Autodial

Personal Communications only supports the bit-oriented (HDLC) protocol for V.25 bis call control messages. Modems must support an ASCII-coded character set consisting of 7-bit characters with odd parity.

Personal Communications supports V.25 bis operation with Multiprotocol(MPA) interface compatible adapters such as the:

- IBM Multiprotocol Communications Adapter (73G7099)
- IBM Multiprotocol Adapter/A (645114 or later)
- IBM Async/SDLC Communications Adapter (ASCA) (42H4332)

Performance Considerations

If you use multiple sessions in a high-speed and high-load configuration with an SDLC attachment, the connection to the host might fail. In this case, set the host's timeout value to be greater than that of Personal Communications.

- To change the host timeout value, modify the following NCP parameters:

REPLYTO

The maximum duration in seconds that the host waits for a reply from the terminal. The default is 1 second.

RETRIES=(m,t,n)

The number of attempts to be made to recover from errors occurring during transmission over the link. Repetitive retries are called a retry sequence. The maximum number of retries is specified as *m*, which can be from 0 to 128. NCP pause (the time between the retry sequences) is specified as *t* and can be from 1 to 255 seconds. The maximum number of retry sequences is specified by *n* and can be from 1 to 127.

For example:

```
REPLYTO=1, RETRIES=(3,4,5)
(( 1(seconds) x 3(times) + 4(seconds)) x 5(times)
= 35 (seconds)
```


Note



In this example, the host will wait 35 seconds for the terminal to reply.

For more details, ask your system personnel.

- To change the timeout, modify the secondary inactivity timer through the configuration dialog or advanced configuration.

The value is in seconds and can be from 40 to 160. The default is 80.

Maximum I-Field (PIU) Size

This value is negotiated between your workstation and the host system, unless `XID=No` is defined on the PU. If this value is not negotiated, the Maximum I-Field Size must match the `MAXDATA` value defined on the host system.

Receive Window Count

This value is negotiated between your workstation and the host system, unless `XID=No` is defined on the PU. If this value is not negotiated, the Receive Window Count must match the `MAXOUT` value defined on the host system.

Preventing Conflicts with MPA Adapters

The multiprotocol adapters use system resources that, in some cases, cannot be shared. Therefore, you must make sure there are no conflicts with the following resources:

- DMA level
- I/O addresses (MPA0 uses `X'380' - X'38F'` and MPA1 uses `X'3A0' - X'3AF'`)
- IRQ level (ISA bus only)

The IBM Multiprotocol interface adapters use the following system resources:

- The MPA for ISA can be supported using mode 4 (IRQ3, IRQ4, and DMA channel 1) or mode A (IRQ4 and DMA channel 1). The ASCA can be supported using mode 4 (IRQ3 or IRQ5, IRQ4 or IRQ7, and DMA channel 1) or mode A (IRQ4 or IRQ7, and DMA channel 1). The interrupt level setting in the Personal Communications configuration dialog must match the values on the adapter card. Personal Communications supports the MPA0 or MPA1 communication ports. Some sound cards use an I/O address within the range `X'380' - X'38F'`. MPA1 should be used to avoid a conflict.

- The MPA/A for a microchannel-bus workstation uses IRQ3, IRQ4, and the DMA level is configurable. Both the MPA0 and MPA1 communication ports can be active at the same time and the interrupt is claimed as sharable.

Advantis (IIN) Attachment

Advantis (IIN) supports only a single adapter, and you cannot use other connections at the same time.

Sharing the Interrupt Level

At ASYNC attachment, interrupt levels 3 (IRQ3) and 4 (IRQ4) are used for hardware control. If this unit shares those interrupt levels with another unit, communication might fail.

Line Speed

Line speeds up to 38,400 bps are supported. The maximum usable line speed depends on the speed of the processor or communication port, however. If communication stops or becomes exceedingly slow, reduce the line speed.

Modem Configuration

Software flow control (XON, XOFF) must be disabled.

Hayes AutoSync Attachment

Performance Considerations Because the Hayes AutoSync attachment requires high speed between the serial port and the modem, you need a 486-class workstation with a 33 MHz CPU or better.

If your connection fails (for example, the communication is very slow or stops), try a lower line speed. The line speed must be set in the configuration dialog for Hayes AutoSync attachment or through Advanced configuration.

If the line disconnects or an error occurs during connection, reduce the line speed or the PIU size. This might happen because the performance of your workstation is too slow or the line is poor.

IBM Global Network Connection Attachment

Note



The IBM Global Network may have been replaced by the AT&T Business Internet Services in your country; if so, the following applies to that service in the same manner.

IBM Global Network Connection supports only a single communication port.

Sharing the Interrupt Level

At IBM Global Network Connection, interrupt levels 3 (IRQ3) and 4 (IRQ4) are used for hardware control. If this unit shares those interrupt levels with another unit, communication might fail.

Line Speed

At IBM Global Network Connection, up to 38,400 bps is supported as the line speed. However, the maximum usable line speed depends on the speed of the processor or communication port. If communication stops or becomes exceedingly slow, reduce the line speed.

Functions Not Available with the IBM Global Network Connection

You cannot use the following functions:

- Import/Export
- Host graphics
- Host print
- Server-Requester Programming Interface (SRPI)

Home3270 Attachment

Home3270 supports only a single adapter, and you cannot use other connections at the same time.

Line Speed

Line speeds up to 57,600 bps are supported. However, characters might be lost on high-speed lines, depending on the processor speed. If communication stops or becomes exceedingly slow, reduce the line speed.

Unsupported Character Sequences

The following character sequence is valid for the Home3270 attachment. However, it performs no function.

- ESC P 1 (Block cursor command)
- ESC P 0 (Underline cursor command)
- DLE DC2 (Printer start command)
- DLE DC4 (Printer end command)

Conditions for Communication Check 50x

Home3270 requires both Data Set Ready (DSR) and Carrier Detect (CD) to determine the state of the attachment with the host system. If DSR is not recognized, communication check 501 appears in the operator information area. When DSR is recognized, if CD is not recognized, communication check 504 appears in the operator information area.

When you select ROLMphone** with DCM in the Home3270 configuration, communication check 504 does not appear.

3270 Attachment via the AS/400 System

This section provides information, considerations, and restrictions for PC/3270 connections through an AS/400 system.

AS/400 System Setup

PC/3270 can connect to a host computer via one or more AS/400 systems by using the passthru function (usable with OS/400 Version 2.2.0 or later) supplied through an AS/400 system.

To use this function, set the following communication configuration descriptions in the AS/400 system to **on** (Vary On):

- Line description
- Controller description
- Printer description

Error Messages from the AS/400 System

When this system is connected to an S/390 host system via the AS/400 system, the following message might appear on the screen.

AS/400 CPI5xxx

The message might appear for the following reasons:

- Line error between the AS/400 system and the host system
- Communication configuration description error in the AS/400 system
- The communication configuration description in the AS/400 system is set off (Vary Off).

When this message appears, detailed error information is saved in the AS/400 system operator message queue. Refer to the error message that corresponds to the number displayed on the screen and then correct the cause of the error.

SNA Considerations

This section describes factors you should consider when configuring Personal Communications for use with SNA applications.

SDDLUI

PC/3270 supports the self-defining dependent logical units (SDDLUI) function of ACF/VTAM Version 3 Release 4.1 (MVS) or Version 3 Release 4 (VM). SDDLUI provides the ability to dynamically create dependent LUs on predefined PUs and to reconfigure dependent LUs without interruption to any other user on the network and without intervention by system programming or operations staff.

PC/3270 SDDLUI is supported for all connections except DFT (coaxial connection).

PC/3270 network stations support SDDLUI by:

- Accepting a format-1 Activate PU (ACTPU), which signals that VTAM requires a Network Management Vector Transport (NMVT) containing the Product Set ID (PSID) and LOCADDR of the LU.
- A PC/3270 network station will use LOCADDRs 02, 03, 04, and so on, in that sequence, by default. However, if you specify the LU addresses explicitly, it will use the addresses that you specify.
- Sending an unsolicited NMVT to VTAM when an LU switches on.

PSID Definitions

PC/3270 defines the default PSID for each LU type. Generally, the PSID contains such things as the machine type and the model number. The following table describes the machine type and model number definitions for each LU type supported by PC/3270.

Machine Type	Model Number	LU Type	Screen/Buffer Size
3270	002	Display Model 2 screen	24 rows by 80 columns
3270	003	Display Model 3 screen	32 rows by 80 columns
3270	004	Display Model 4 screen	43 rows by 80 columns
3270	005	Display Model 5 screen	27 rows by 132 columns
3270	DS2*	Printer 3270 data stream	24 rows by 80 columns
3270	DS3*	Printer 3270 data stream	32 rows by 80 columns

Machine Type	Model Number	LU Type	Screen/Buffer Size
3270	DS4*	Printer 3270 data stream	43 rows by 80 columns
3270	DS5*	Printer 3270 data stream	27 rows by 132 columns
3270	00A	Display	48 rows by 80 columns
3270	00B	Display	62 rows by 160 columns
3270	00C	Display	24 rows by 132 columns
<p>* PC/3270 assumes that 3270 data stream is the default printer-session type. If you use the SNA Character String (SCS) data stream, you must use a different designation for the PSID, such as 3270SCS. You must define this yourself, as shown in the next example.</p>			

Assigning User-Defined PSIDs

You can replace the default PSID values with your own definitions or define new PSIDs, by preparing a PSID definition file or by changing the Windows workstation profile. The PSIDs you use must be defined to VTAM.

Add a statement such as the following one to the [LU] definition in the workstation profile. This example supersedes the default PSID with LUA0001.
 PSID = LUA0001

Twinaxial Attachment (APPC)

This section describes considerations for twinaxial attachments (APPC).

PCMCIA Adapter

The PC400 communication driver for the twinaxial attachment corresponds to the PCMCIA adapter. You do not have to use the driver supported with PCMCIA adapter. (PCMCIA support must be loaded by the OS/2 Install program.)

Twinaxial Attachment (Console)

Use the twinaxial attachment only when your workstation is used as an AS/400 console. Do not attempt to use this feature when your workstation is being used as a stand-alone unit.

5250 Data Stream

The extended 5250 data stream for using the extended user interface, the Enhanced Non-programmable Terminal User Interface (ENPTUI), cannot be transferred from the host system.

Hotspots

Because Personal Communications treats all fields as unprotected fields, none of the 3-dimensional hotspot buttons appear. To make these buttons visible, add the following lines in your workstation profile:

```
[3DHotSpot]  
ShowOnUPField=Y
```

Restrictions

- You cannot use the **Setup API** functions of the File menu.
- When you use twinaxial attachment (Console), you can only use **Copy** of the Edit functions.
- You cannot use the file transfer function.
- You cannot set the session type to **Printer**.
- You cannot use multiple console sessions.
- The screen size is always 24 x 80, even if you specify 27 x 132.
- APIs are not supported.
- The PC Organizer cannot be used.
- You cannot use the mouse to move the cursor position.

Asynchronous Console

Use an asynchronous console only when a workstation is used as an AS/400 console. Do not use it in the usual operation. It is not a problem that OIA message 504 appears at IPL.

Restrictions

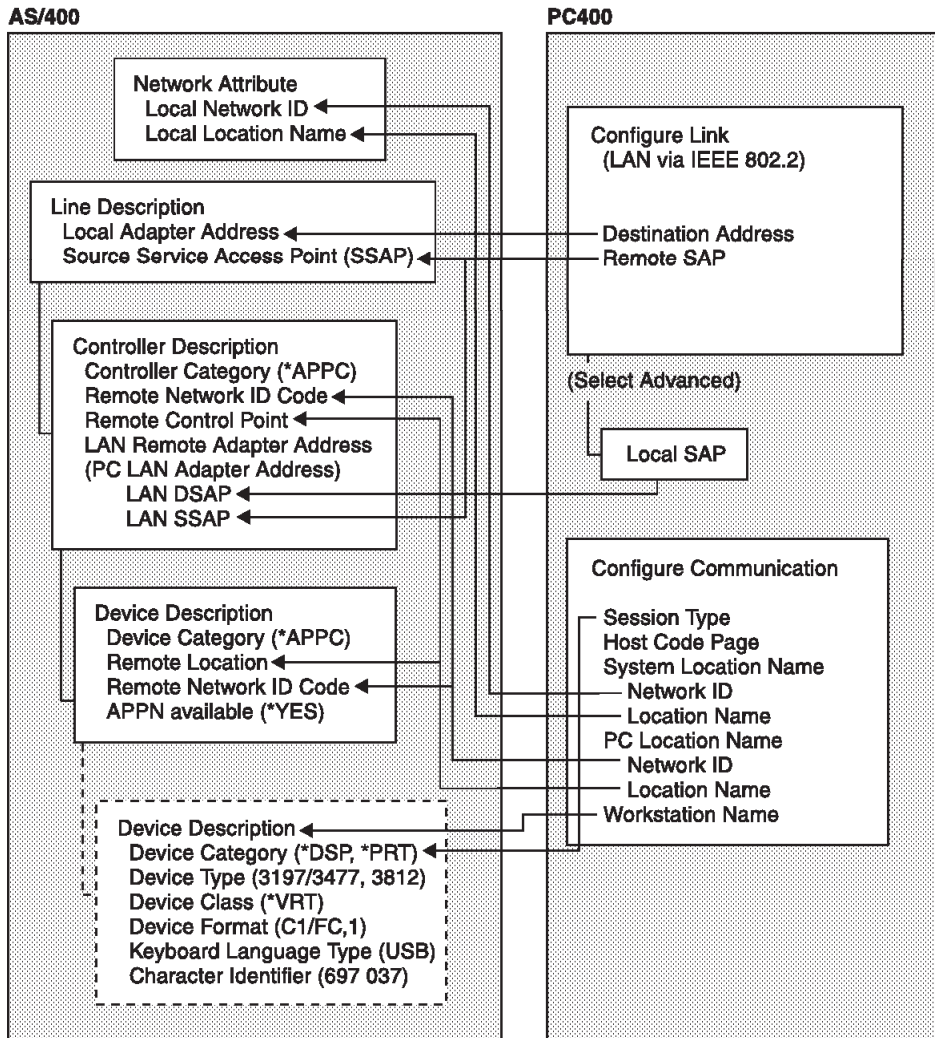
An asynchronous console has the following restrictions:

- Multiple console sessions cannot be used.
- APIs are not supported.
- The session type cannot be set to the **Printer**.
- The file transfer function is not supported.
- The PC Organizer cannot be used.

Appendix C. AS/400 Configuration Examples

To connect PC400 to an AS/400 system, you need to specify configuration information in the workstation profile that accurately corresponds to the information specified in the AS/400 system (referred to as the *device description*).

For example, the LAN attachment via IEEE 802.2 in the following figure shows how the configuration information specified in the PC400 workstation profile corresponds to the configuration information in the AS/400 system.



AS/400 Device Description

To configure 5250 display or printer sessions, the following values must be set in the AS/400 device description:

AS/400 Device Description	Display Session		Printer Session
	24 x 80	27 x 132	
Device category	*DSP	*DSP	*PRT
Device class	*VRT	*VRT	*VRT
Device type	3197	3477	3812

AS/400 Device Description	Display Session		Printer Session
	24 x 80	27 x 132	
Device model	C1	FC	1
Keyboard language type	USB(+)	USB(+)	-
Character identify code page selection	697 037(+)	697 037(+)	- (+) For SBCS, depends on the host code

5250 Sessions through One Link

If you want all your 5250 sessions to connect through one link to an AS/400 system, use the same **PC Location Name** and the same **Link Parameters** for all the sessions.

For example, you can configure two display sessions and one printer session connected to an AS/400 system using *APPN.PC5250* as the **Location Name**.

```

Session A : Session Type      : Display
(Display)  : System Location Name : APPN.S7801234
           : PC Location Name    : APPN.PC5250
           : Workstation ID      : (not specified)

Session B : Session Type      : Display
(Display)  : System Location Name : APPN.S7801234
           : PC Location Name    : APPN.PC5250
           : Workstation ID      : (not specified)

Session C : Session Type      : Printer
(Printer)  : System Location Name : APPN.S7801234
           : PC Location Name    : APPN.PC5250
           : Workstation ID      : PCLOCALP1

```

In this example, the AS/400 network attributes are:

```

Local network ID : APPN
Local location   : S7801234

```

Tip



Enter **DSPNETA** from a 5250 session to display AS/400 network attributes.

AS/400 System Mode Description

PC400 initially uses mode description **QPCSUPP** on the AS/400 system. If the PC Support/400 program or Client Access/400 is installed on the AS/400 system, QPCSUPP need not be created. If mode description QPCSUPP does not exist on the AS/400 system, create the mode description:

1. Enter the following command on the command line of the main menu of the AS/400 system:

CRTMODD

The Creating Mode Description panel appears.

Creating Mode Description (CRTMODD)

Type the selected items, and push the Enter key.

Mode Description.....		Name	
Maximum Session.....	8		1-512
Maximum number of interaction....	8		1-512
Number of Local Control Sessions.	4		0-512
Number of Pre-joined Sessions....	0		0-512
Inbound Pacing Value.....	7		0-63
Outbound Pacing Value.....	7		0-63
Maximum Length of Request Unit...	*CALC		241-16384, *CALC
Text Description	*BLANK		

F3=Exit

F4=Prompt

F5=Reshow

F10=Add parameter

F12= Cancel

End

F13=How to use this panel

F24=More key

2. Type the necessary values in each field, according to the following table.

Field Name	Input Value
Mode description	QPCSUPP
Maximum session	64
Maximum number of interactions	64
Number of local control sessions	0
Number of pre-joined sessions	0
Inbound pacing value	7
Outbound pacing value	7
Maximum length of request unit	*CALC
Text description	This field is optional

3. After you type all the values, press the Enter key.

This completes the creation of the mode description QPCSUPP.

AS/400 Device Description for Twinaxial Attachments (APPC) Example

If you want to use a twinaxial (TDLC) attachment, the AS/400 system requires that you specify a device description. When the automatic device configuration indicator (**QAUTOCFG**) is set to **ON** in the AS/400 system, the device description is created automatically. When the indicator is set to **OFF**, create the device description, as follows:

- 1. Enter the following command on the command line of the AS/400 system main menu:

CRTDEVDSP

The Creating Device Description(Display) panel appears.

Creating Device Description(Display) (CRTDEVDSP)

Type the selected item, and push Enter key.

Device Description... _____

Device Class..... _____

Device Type..... _____

Device Format..... _____

Name

*LCL, *RMT, *VRT, *SNPT

3101, 3151, 3161, 3162...

0, 1, 2, 4, 11, 12, 23...

F3=Exit

F4=Prompt

F5=Reshow

F10=Add parameter

F12= Cancel

F13=How to use this panel

F24=More key

End

- 2. Type the values in each field, according to the following table.

Field Name	Input Value
Device description	This is an optional field
Device class	*LCL
Device type	5150
Device format	2

- 3. After you type all values, press the Enter key.
The following screen appears:

Creating Device Description(Display) (CRTDEV DSP)

Type the selected item, and push Enter key.

Device Description.....>TWXP0A1	Name
Device Class.....>*LCL	*LCL, *RMT, *VRT, *SNPT
Device Type.....>5150	3101, 3151, 3161, 3162...
Device Format.....>2	0, 1, 2, 4, 11, 12, 23...
Port Number.....	0-17
Switch Setting.....	0, 1, 2, 4, 5, 6
Online when IPL.....>*YES	*YES, *NO
Controller to be attached...	Name
Keyboard Word Type.....>*SYSVAL	*SYSVAL,AGB,AGI,BLI...
Text Description.....>*BLANK	

F3=Exit F4=Prompt F5=Reshow F10=Add parameter F12= Cancel
F13=How to use this panel F24=More key

4. Type the values for each field, according to the following table.

Field Name	Input Value
Port number	Number of the port to be attached
Switch setting	Device address
Controller to be attached	Description name of the controller to be attached
Keyboard word type	USB(1) (1) Depends on the host code page selection.

5. After you enter all the values, press the Enter key.

This completes the creation of the device description for the twinaxial attachment.

AS/400 Device Description for Asynchronous Attachments Example

If you want to use an asynchronous dial attachment, the AS/400 system requires that you specify configuration parameters for the controller/line/devices to be used.

The following sample is a typical configuration on the AS/400 system for an asynchronous dialed connection through an ASCII Workstation Controller.

1. Enter the following command on the command line of the AS/400 system main menu:

```
WRKCFGSTS *CTL CTL03
```


where CTL03 is the name of your controller.

The Work with Configuration Status panel appears.

```
Work with Configuration Status

Position to . . . . . Starting characters

Type options, press Enter
  1=Vary on 2=Vary off 5=Work with job 8=Work with description
  9=Display mode status ...

Opt  Description      Status      -----Job-----
8_   CTL03             ACTIVE
_    ADLCTST           VARY ON PENDING
_    ASYNC             VARY ON PENDING
_    ASYNCD            VARY ON PENDING
_    EZASYNC           VARY ON PENDING
_    ASYNCP0           VARY ON PENDING
_    ASYNRTR           ACTIVE

Parameters or command
===>

F3=Exit F4=Prompt F12=Cancel F23=More options F24=More keys

BOTTOM
```

2. Enter 8 in the Opt field to work with the controller description for CTL03. The Work with Controller Descriptions panel appears.

```
Work with Controller Descriptions

Position to . . . . . Starting characters

Type options, press Enter
  2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
  8=Work with status 9=Retrieve source 12=Print device addresses

Opt  Controller  Type  Text
2_   CTL03       6141  CREATED BY AUTO-CONFIGURATION

Parameters or command
===>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

BOTTOM
```

3. Enter 2 in the Opt field to change the controller description for CTL03. The Change Controller Description panel appears.

Change Ct1 Desc (local WS) (CHGCTLLWS)

Controller Description : CTL03
Option : *BASIC
Category of controller : *LWS

Controller type : 6141
Controller model : 1
Resource name : CTL03
TDLC line : QTDL429000
Online at IPL : *YES
Auto-configuration controller . . : *YES
Text : CREATED BY AUTO-CONFIGURATION
Device wait timer : 10

Press Enter to continue.
====>

BOTTOM

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

4. Type the values in each field, according to the following table.

Field Name	Input Value
Controller description	CTL03
Resource name	CTL03
Online at IPL	*YES
Device wait timer	10
Auto-configuration controller	*YES
Text description	This field is optional

The Work with Controller Descriptions panel appears.

Work with Controller Descriptions

Position to Starting characters

Type options, press Enter
2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
8=Work with status 9=Retrieve source 12=Print device addresses

Opt	Controller	Type	Text
8_	CTL03	6141	Created by auto-configuration

Parameters or command
===>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

BOTTOM

5. Enter 8 in the Opt field to work with the configuration status.
The Work with Configuration Status panel appears.

Work with Configuration Status

Position to Starting characters

Type options, press Enter
1=Vary on 2=Vary off 5=Work with job 8=Work with description
9=Display mode status ...

Opt	Description	Status	-----Job-----
—	CTL03	ACTIVE	
—	ADLCTST	VARY ON	PENDING
—	ASYNCPERTH	VARY ON	PENDING
—	ASYNCD	VARY ON	PENDING
—	EZASYNC	VARY ON	PENDING
—	ASYNCP0	VARY ON	PENDING
8_	ASYNRTR	ACTIVE	

Parameters or command
===>

F3=Exit F4=Prompt F12=Cancel F23=More options F24=More keys

BOTTOM

6. Enter 8 in the Opt field next to ASYNRTR to work with the display device description.
The Work with Device Descriptions panel appears.

Work with Device Descriptions

Position to Starting characters
 Type options, press Enter
 2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
 8=Work with status 9=Retrieve source

Opt	Controller	Type	Text
2_	ASYNRTR	5150	FOR PC400

Parameters or command
 ==>
 F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
 F14=Work with status

BOTTOM

7. Enter 2 in the Opt field to change the device description.
 The Change Device Description panel appears.

Change Device Desc (Display) (CHGDEVDSP)

Type choices, press Enter.

Device description	> ASYNRTR	Name
Port number	4	0-17, *SAME
Switch setting	0	0-6, *SAME
Online at IPL	*YES	*SAME, *YES, *NO
Keyboard language type	USI	*SAME, *SYSVAL, *NONE, AGB...
Keyboard language type	JKB	*SAME, *SYSVAL, *NONE, AGB...
Character identifier:		
Graphic character set	*KBDTYPE	1-32767, *KBDTYPE, *SYSVAL...
Code page		1-32767
Allow blinking cursor	*YES	*SAME, *YES, *NO
Print device	*SYSVAL	Name, *SAME, *SYSVAL
Output queue	*DEV	Name, *SAME, *DEV
Library		Name, *LIBL, *CURLIB
Printer file	QSYSPRT	Name, *SAME
Library	*LIBL	Name, *LIBL, *CURLIB

Press Enter to continue.
 ==>
 F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
 F13=How to use this display F24=More keys

More...

This completes the creation of the controller and display device descriptions for an asynchronous dial attachment.

AS/400 Device Description for Hayes AutoSync Attachments Example

If you want to use a Hayes AutoSync attachment, the AS/400 system requires that you specify configuration parameters for the controller/line/devices to be used.

The following sample is a typical configuration on the AS/400 system for an AutoSync connection either through an ASCII Workstation Controller (configured for a synchronous switched connection type) or the Electronic Customer Support (ECS) line.

- 1. Enter the following command on the command line of the AS/400 system main menu:

```
WRKCFGSTS *CTL CTL03
```

where CTL03 is the name of your controller.

The Work with Configuration Status panel appears.

Work with Configuration Status

Position to Starting characters

Type options, press Enter

1=Vary on 2=Vary off 5=Work with job 8=Work with description

9=Display mode status ...

Opt	Description	Status	-----Job-----
8 _	AUTOHAYES	CONNECT PENDING	
—	AUTONAGA	VARIED OFF	
—	AUTOSYNC	VARIED OFF	
—	AUTOSYNC1	CONNECT PENDING	

BOTTOM

Parameters or command

===>

F3=Exit F4=Prompt F12=Cancel F23=More options F24=More keys

- 2. Enter 8 in the Opt field next to AUTOHAYES to work with the line description.

The Work with Line Descriptions panel appears.

Work with Line Descriptions

Position to Starting characters

Type options, press Enter

2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
8=Work with status 9=Retrieve source

Opt	Controller	Type	Text
2_	AUTOHAYES	*SDLC	Hayes Autosync Line for PC400

BOTTOM

Parameters or command

====>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

3. Enter 2 in the Opt field to display the line description.
The Change Line Description panel appears.

Change Line Desc (SDLC) (CHGLINSDLC)

Type choices, press Enter.

Line description	> AUTOHAYES	Name
Resource names	LIN051	Name, *SAME
+ for more values		
Online at IPL	*YES	*SAME, *YES, *NO
Vary on wait	*YES	*NOWAIT, 15-180 (1 second)
NRZI Data encoding	*YES	*SAME, *YES, *NO
Maximum controllers	1	1-254, *SAME
Clocking	*MODEM	*SAME, *MODEM, *LOOP
Line speed	9600	*SAME, 600, 1200, 2400...
Modem type supported	*NORMAL	*SAME, *NORMAL, *V54...
Modem data rate select	*FULL	*SAME, *FULL, *HALF
Switched connection type	*BOTH	*SAME, *BOTH, *ANS, *DIAL
Autoanswer	*YES	*SAME, *YES, *NO
Autodial	*NO	*SAME, *YES, *NO
Dial command type	*SAME	*SAME, *NONE, *V25BIS
Calling number	*NONE	

More...

====>

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

4. Type the required values and press Enter.


```

Change Line Desc (SDLC) (CHGLINSDLC)

Type choices, press Enter.

Station address . . . . . > AUTOSYNC      01-FE, *SAME
Connect poll retry . . . . . 7             0-64, *SAME
Maximum frame size . . . . . 521          *SAME, 265, 521, 1033, 2057
Error threshold level . . . . . *HALF      *SAME, *OFF, *MIN, *MED, *MAX
Duplex . . . . . *HALF                    *SAME, *HALF, *FULL
Modulus . . . . . 8                       *SAME, 8, 128
Maximum outstanding frames . . . . . *BASIC 1-28, *SAME
Inactivity timer . . . . . *SDLC          *NOMAX, 150-4200 (0.1 sec)
Poll response delay . . . . . *SAME       0-2048 (0.0001 seconds)
Nonproductive receive timer . . . . . 320  160-4200 (0.1 seconds)
Idle timer . . . . . 30                   5-300 (0.1 seconds)
Connect poll timer . . . . . 30           2-300 (0.1 seconds)
Poll cycle pause . . . . . 0             0-2048 (0.0001 seconds)
Frame retry . . . . . 7                  0-64, *SAME
Data Set Ready drop timer . . . . . 6     *SAME, 3-60 (seconds)
Autoanswer type . . . . . *DTR           *SAME, *DTR, *CDSTL

                                     More...

===>
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

```

Type the required values and press Enter.

```

Change Line Desc (SDLC) (CHGLINSDLC)

Type choices, press Enter.

Clear to Send timer . . . . . 25          *SAME, 10-60 (seconds)
Remote answer timer . . . . . 60          *SAME, 30, 35, 40 (seconds)...
Link speed . . . . . 9600                 *SAME, *INTERFACE, *MIN...
Cost/connect time . . . . . 128           0-255, *SAME, *CNN
Cost/byte . . . . . 128                  0-255, *SAME, *CNN
Security for line . . . . . *NONSECURE    *SAME, *NONSECURE...
Propagation delay . . . . . *TELEPHONE    *SAME, *MIN, *LAN...
User-defined 1 . . . . . 128              0-255, *SAME
User-defined 2 . . . . . 128              0-255, *SAME
User-defined 3 . . . . . 128              0-255, *SAME
Recovery limits:
  Count limit . . . . . 2                 0-99, *SAME, *SYSVAL
  Time interval . . . . . 5               0-120 (minutes)
Text 'description' . . . . . 'Hayes AutoSync Line for PC400

                                     Bottom

Press Enter to continue.

===>
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

```

Type the required values and press Enter.

The Work with Line Descriptions panel appears.

Work with Line Descriptions

SYSTEM: TOK38SPB

Position to Starting characters

Type options, press Enter
2=Change 3=Copy 4=Delete 5=Display 6=Print 7=Rename
8=Work with status 9=Retrieve source

Opt	Controller	Type	Text
—	AUTOHAYES	*SDLC	Hayes Autosync Line for PC400

Parameters or command

BOTTOM

====>

F3=Exit F4=Prompt F5=Refresh F6=Create F9=Retrieve F12=Cancel
F14=Work with status

This completes the creation of the line description for a Hayes AutoSync attachment.

Appendix D. Default Key Function Assignments

This appendix lists the functions assigned, by default, to each key on your keyboard.

For more information about each function, refer to the **Keyboard** choice on the Help menu.

Default Key Functions for PC/3270

Table 4 shows the default key functions for PC/3270. The column for the Enhanced keyboard applies to both the 101-key, 102-key, and 104-key keyboards, as well as the Space-Saving keyboard.

Table 4. Default Key Functions for a 3270 Layout

Function of Key	Enhanced Keyboard	Host-Connected Keyboard
APL	Ctrl+F8	Ctrl+F8
Attention	Esc	Attn
Alternate Cursor	Alt+F11	AltCr
Backspace	← (Backspace)	←
Back Tab	Shift+→	←
Back Tab Word	Alt+←	Alt+←
Break	Break	Ctrl+Space(pad)
Change Format Toggle	Alt+F3	Alt+F3
Change Screen	Ctrl+PageUp	ChgSc
Clear	Pause	Clear
Color Blue	Ctrl+Shift+F5	Alt+F17
Color Field Inherit	Ctrl+Shift+F8	Alt+F20
Color Green	Ctrl+Shift+F3	Alt+F15
Color Pink	Ctrl+Shift+F2	Alt+F14
Color Red	Ctrl+Shift+F1	Alt+F13
Color Turquoise	Ctrl+Shift+F6	Alt+F18
Color White	Ctrl+Shift+F7	Alt+F19
Color Yellow	Ctrl+Shift+F4	Alt+F16
Cursor Blink	Ctrl+F10	CrBnk
Cursor Down	↓ or 2(pad)	↓

Table 4. Default Key Functions for a 3270 Layout (continued)

Function of Key	Enhanced Keyboard	Host-Connected Keyboard
Cursor Left	← or 4(pad)	←
Cursor Right	→ or 6(pad)	→
Cursor Select	Ctrl+F9	CrSel
Cursor Up	↑ or 8(pad)	↑
Delete Character	Delete or .(pad)	Delete
Delete Word	Ctrl+Delete or Ctrl+.(pad)	DelWd
Document Mode Toggle	Alt+F1	Alt+F1
Dup	Shift+Insert ²	Dup
Edit Copy	Ctrl+Insert	Ctrl+Insert
Edit Cut	Shift+Delete	Shift+Delete
Edit Paste	Shift+PageDown or Ctrl+Shift+Insert	Shift+Insert
Edit Undo	Alt+← (Backspace)	Alt+←
End Field	Pad End	Not assigned
Enter	Enter	Enter
Enter/Control	Right Ctrl	Enter
Erase EOF	End ²	ErEOF
Erase Field	Shift+End ²	Not assigned
Erase Input	Alt+End ²	ErInp
Fast Cursor Down	Alt+↓ or Alt+2(pad)	Alt+↓
Fast Cursor Up	Alt+↑ or Alt+8(pad)	Alt+↑
Field Mark	Shift+Home ²	FldMk
Graphic Cursor	Alt+F12	Alt+F24
Highlighting Field Inherit	Alt+3(pad)	Alt+F12
Highlighting Reverse	Alt+*(pad)	Ctrl+F9
Highlighting Underscore	Alt+6(pad)	Ctrl+F11
Home	Home or 7(pad)	Alt+Rule
Insert	Insert or 0(pad)	Insert
Jump Next	Alt+PageUp	Jump
New Line	↵ (Enter)	↵
Mark Down	Shift+↓	Shift+↓
Mark Left	Shift+←	Shift+←
Mark Right	Shift+→	Shift+→

Table 4. Default Key Functions for a 3270 Layout (continued)

Function of Key	Enhanced Keyboard	Host-Connected Keyboard
Mark Up	Shift+↑	Shift+↑
Move Mark Down	Ctrl+↓ or Ctrl+2(pad)	Ctrl+↓
Move Mark Left	Ctrl+← or Ctrl+4(pad)	Ctrl+←
Move Mark Right	Ctrl+→ or Ctrl+6(pad)	Ctrl+→
Move Mark Up	Ctrl+↑ or Ctrl+8(pad)	Ctrl+↑
PA1	Alt+Insert ²	PA1
PA2	Alt+Home ²	PA2
PA3	Shift+PageUp ²	PA3
Pause	Ctrl+F7	Pause
PF1 to PF12	F1 to F12	F1 to F12
PF13 to PF24	Shift+F1 to F12	F13 to F24
Play	Ctrl+F6	Play
Program Symbol A	Ctrl+Shift+(pad)1	Ctrl+Shift+(pad)1
Program Symbol B	Ctrl+Shift+(pad)2	Ctrl+Shift+(pad)2
Program Symbol C	Ctrl+Shift+(pad)3	Ctrl+Shift+(pad)3
Program Symbol D	Ctrl+Shift+(pad)4	Ctrl+Shift+(pad)4
Program Symbol E	Ctrl+Shift+(pad)5	Ctrl+Shift+(pad)5
Program Symbol F	Ctrl+Shift+(pad)6	Ctrl+Shift+(pad)6
PS Field Inherit	Ctrl+Shift+(pad)0	Ctrl+Shift+(pad)0
Print (Local Copy)	Not assigned	Not assigned
Quit (Device Cancel)	Alt+Left Ctrl	Alt+Left Ctrl
Record	Ctrl+F5	Record
Reset/Control	Left Ctrl	Left Ctrl
Response Time Monitor	Ctrl+F11	Ctrl+F19
Rule	Ctrl+Home	Rule
Sys Request	Alt+PrintScreen	SysRq
Tab Field	→ or Shift+→ (pad)	→ or → (pad)
Tab Word	Alt+→	Alt+→
Test	Ctrl+PageDown	Test
Transparency Field Inherit	Ctrl+Shift+8(pad)	Ctrl+Shift+9(pad)
Transparency Opaque	Ctrl+Shift+/(pad)	Ctrl+Shift+*(pad)
Word Wrap Toggle	Alt+F2	Alt+F2

Table 4. Default Key Functions for a 3270 Layout (continued)

Function of Key	Enhanced Keyboard	Host-Connected Keyboard
¹	Includes the 101-key and 102-key keyboard. The Space Saving keyboard is like the Enhanced keyboard with the keypad omitted.	
²	Indicates the key on the main keyboard.	
(pad)	Indicates a key on the numeric keypad.	
Note: The Enhanced keyboard has some duplicated keys. The functions of the duplicated keys are the same except when you specify a single key. For example, <i>Del</i> means any Delete key, whereas <i>Pad Del</i> specifies only the Delete key on the numeric keypad.		

Default Key Functions for PC400

Table 5 shows the default key functions for PC400. The column for the Enhanced keyboard applies to both the 101-key, 102-key, and 104-key keyboards, as well as the Space-Saving keyboard.

Table 5. Default Key Functions for PC400

Function of Key	Enhanced Keyboard	122 Keyboard
Alternate Cursor	Ctrl+F11	AltCr
Attention	Esc	Attn
Backspace	← (Backspace)	←
Backtab	Shift+→	←
Backtab Word	Alt+←	Alt+←
Begin Bold*	Ctrl+B	Ctrl+B
Begin of line*	Ctrl+4(pad)	Ctrl+4(pad)
Begin Underscore*	Ctrl+U	Ctrl+U
Bottom of Page*	Ctrl+2(pad)	Ctrl+2(pad)
Carrier Return	Ctrl+Enter or Ctrl+- (pad) or Ctrl++ (pad)	Ctrl+- (pad) or Ctrl+→ (pad)
Center Text*	Ctrl+C	Ctrl+C
Clear	Pause	Clear
Cursor Blink	Ctrl+F10	CrBnk
Cursor Down	↓ or 2(pad)	↓
Cursor Left	← or 4(pad)	←
Cursor Right	→ or 6(pad)	→

Table 5. Default Key Functions for PC400 (continued)

Function of Key	Enhanced Keyboard	122 Keyboard
Cursor Up	↑ or 8(pad)	↑
Delete Character	Delete or .(pad)	Delete
Delete Word	Ctrl+Delete or Ctrl+.(pad)	DelWd
Display Text Code	Alt+Insert	Alt+Insert
Dup	Shift+Insert	PA1
Edit Copy	Ctrl+Insert	Ctrl+Insert
Edit Cut	Shift+Delete	Shift+Delete
Edit Paste	Shift+PageDown or Ctrl+Shift+Insert	Shift+Insert
Edit Undo	Alt+← (Backspace)	Alt+←
End Bold/Underscore*	Ctrl+J	Ctrl+J
End of line*	Ctrl+6(pad)	Ctrl+6(pad)
End of page*	Ctrl+P	Ctrl+P
Enter/Control	Enter/Ctrl	Enter
Erase EOF	End or 1(pad)	ErEOF
Erase Input	Alt+End	ErInp
Fast Cursor Down	Alt+V or Alt+2(pad)	Alt+V
Fast Cursor Up	Alt+↑ or Alt+8(pad)	Alt+↑
Field Exit	Enter(pad) or ↵ (Enter)	Enter(pad) or ↵
Field Mark	Shift+Home	PA2
Field Minus (-)	-(pad)	Alt+-(pad)
Field Plus (+)	+ (pad)	Alt++ (pad)
Half Index Down*	Ctrl+H	Ctrl+H
Half Index Up*	Ctrl+Y	Ctrl+Y
Help	Alt+F1	Alt+F1
Home	Home or 7(pad)	Alt+Rule
Host Print	Ctrl+Pause	Alt+F13
Insert	Insert or 0 (pad)	Insert
Insert Symbol*	Ctrl+A	Ctrl+A
Jump Next	Alt+PageUp	Jump
Mark Down	Shift+↓	Shift+↓
Mark Left	Shift+←	Shift+←
Mark Right	Shift+→	Shift+→

Table 5. Default Key Functions for PC400 (continued)

Function of Key	Enhanced Keyboard	122 Keyboard
Mark Up	Shift+↑	Shift+↑
Move Mark Down	Ctrl+↓	Ctrl+↓
Move Mark Left	Ctrl+←	Ctrl+←
Move Mark Right	Ctrl+→	Ctrl+→
Move Mark Up	Ctrl+↑	Ctrl+↑
New Line	Shift+↵ (Enter)	Shift+↵
Next Column*	Ctrl+D	Ctrl+D
Next Stop*	Ctrl+N	Ctrl+N
Pause	Ctrl+F7	Pause
PF1 to PF12	F1 to F12	F1 to F12
PF13 to PF24	Shift+F1 to F12	F13 to F24
Play	Ctrl+F6	Play
Quit	Alt+Left Ctrl	Alt+Left Ctrl
Record	Ctrl+F5	Record
Required Backspace	Ctrl+← (Backspace)	Ctrl+←
Required Space*	Ctrl+Space	Ctrl+Space
Required Tab*	Ctrl+→	Ctrl+→
Reset/Control	Left Ctrl	Left Ctrl
Roll Down	9(pad) or PageUp	9(pad)
Roll Up	3(pad) or PageDown	3(pad)
Rule	Ctrl+Home	Rule
Stop Code*	Ctrl+S	Ctrl+S
System Request	Shift+Esc	Alt+PrintScreen
SysRq		
Tab Field	→	→ or → (pad)
Tab Word	Alt+→	Alt+→
Test Request	Alt+Pause	Alt+Copy
Top of Page*	Ctrl+8(pad)	Ctrl+8(pad)
Word Underscore*	Ctrl+W	Ctrl+W
<p>(pad) indicates a key on the numeric keypad.</p> <p>* indicates a Text Assist Key (SBCS only).</p>		

Default Key Functions for the Combined Package

Table 6 shows the default key functions for the combined package. The column for the Enhanced keyboard applies to both the 101-key, 102-key, and 104-key keyboards, as well as the Space-Saving keyboard.

When you use Personal Communications from the combined package, the PC400 key assignments are added to the PC/3270 default key function assignments for Personal Communications.

Table 6. Default Key Functions for the Combined Package

Function of Key	Enhanced Keyboard	Host-Connected Keyboard
Change Screen	Not assigned	ChgSc
Character Advance	Shift+BackSpace	Not assigned
Help	Not assigned	Ctrl+F1
Host Print	Not assigned	Ctrl+F13
PA3	Not assigned	PA3
Roll Down	PageUp	Not assigned
Roll Up	PageDown	Not assigned

You can change the default key assignments to the following default function tables, by selecting **Keyboard Setup** from the Assist menu:

KEYMAP_3270 (for PC/3270)
KEYMAP_5250 (for PC400)
KEYMAP_CONV (for the combined package)

The default function table setting is stored in your PCSWIN.INI file:

```
[KEYBOARD]  
CuaKeyboard=n
```

where n indicates the emulation types installed:

- 3 for 3270 keyboard layout
- 5 for 5250 keyboard layout
- c for combined keyboard layout

Appendix E. Access Feature Configuration Profiles

The following sections contain more information:

- “Data Link Control (DLC) Profiles”
- “SNA Profiles” on page 140
- “X.25 Profiles” on page 145
- “SNA Phone Connect Profiles” on page 156

Data Link Control (DLC) Profiles

This section describes the data link control (DLC) profiles that you can configure. The following subsections contain more information:

- “Introduction to DLC Profiles”
- “Configuring for DLC” on page 138
- “Profiles” on page 138

Introduction to DLC Profiles

The data link control (DLC) profiles establish interfaces between the DLC adapter in your workstation and another system or workstation through a logical link. The DLC provides the protocols necessary for reliable delivery of basic transmission units (BTUs) between a pair of nodes in the SNA network. You must configure the appropriate DLC profiles for a workstation to access an SNA network.

The data link control connection types are:

- Token-ring or other LAN types
- Ethernet (ETHERAND) network
- PC Network
- Synchronous data link control (SDLC)
- X.25 using X.25 Coprocessor adapter
- X.25
- Integrated services digital network DLC (IDLC)
- Twinaxial
- GDLC for adapter-provided DLC

Refer to the online *Communications Server for OS/2 Network Administration and Subsystem Management Guide* for additional background information on data link controls.

Configuring for DLC

To select a DLC profile, follow these steps:

- On the Configuration Definitions window, select:
 - **Additional definitions**
 - One of the connection types listed above from the Workstation Connection Type list
 - One of the items in the Feature or Application list
 - **Configure**
- On the Profile List window, select the appropriate DLC profile.

The DLC profiles are also available by selecting **Configure any profile or feature...** from the Options menu in the Configuration Definitions window.

Profiles

Following are discussions of the types of DLC profiles. While completing a profile, use the online help for a description of the parameters.

DLC - Token-Ring or Other LAN Types Profile

Define a DLC Token-Ring or other LAN type profile for each Token-Ring or other LAN type adapter in your workstation that you use to run an SNA feature or application.

DLC - Ethernet (ETHERAND) Network Profile

Define a DLC Ethernet network profile for each Ethernet network adapter in your workstation that you use to run an SNA feature or application.

DLC - PC Network Profile

Define a DLC PC Network profile for each PC Network adapter in your workstation that you use to run an SNA feature or application.

DLC - SDLC Profile

Define a synchronous data link control (SDLC) DLC profile. The SDLC DLC profile establishes the interface between the SDLC adapter in your workstation and another system or workstation in an SNA environment.

DLC - X.25 Profile

Define a DLC X.25 profile to run SNA applications over an X.25 packet-switching data network (PSDN). Both SNA and non-SNA applications can share an X.25 adapter.

The X.25 API supports up to eight X.25 adapters. However, the number of X.25 adapters is limited by the available slots in your workstation. For each X.25 adapter you intend to use for SNA communications, you must define an X.25 DLC profile.

When completing this profile, make sure the Link name parameter value matches the link name defined in the X.25 link profile.

If you want to initiate a connection to one or more remote data terminal equipment devices (DTEs), you must create remote SNA entries in the X.25 directory. See “X.25 Directory Entries Profile” on page 148 for more information about the X.25 directory.

If you want to receive incoming calls from remote DTEs, check that the IBM-supported X.25 routing table is configured to your requirements. See “X.25 Routing Table Profile” on page 150 for additional information about the X.25 routing table.

DLC - IDLC Profile

Define a DLC IDLC profile to connect your workstation by IDLC (ISDN data link control) to an integrated services digital network (ISDN). IDLC is IBM's implementation of the CCITT standard Link Access Protocol-Extended (LAPE).

Refer to the online *Network Administration and Subsystem Management Guide* for an introduction to ISDN.

DLC - Twinaxial Profile

Define a DLC Twinaxial profile to enable your workstation to communicate with an AS/400 computer. Twinaxial data link control (DLC) is a communication function that allows personal computers, attached to an AS/400 computer or to the workstation controller with a twinaxial cable, to use advanced program-to-program communications (APPC).

DLC - GDLC for Adapter-Provided DLC Profile

Define a general DLC (GDLC) for adapter-provided DLC profile to provide a bridge between the SNA subsystem and a vendor-supplied protocol adapter. Most configuration parameters have been supplied by the vendor adapter configuration program. You can configure whether this adapter receives incoming calls.

To complete a general DLC configuration, you also need to configure:

- OEM or IBM intelligent adapter
- SNA connections profile
- SNA Phone Connect - Port Connection Manager profile

If you are configuring for an OEM or IBM intelligent adapter, the values you specify in the configuration fields might be different from those displayed on the panels and described in the online help. Use the information shipped with the adapter to configure correctly.

SNA Profiles

This section describes the SNA profiles that you can configure. The following subsections contain more information:

- “Introduction to SNA Profiles”
- “Configuring for SNA”
- “Profiles” on page 141

Introduction to SNA Profiles

The SNA subsystem can act as both an SNA type 2.0 node and an SNA type 2.1 node. This support lets you write programs to communicate with many other IBM SNA products.

When communication starts, it establishes local logical unit (LU) and logical link definitions that are stored in a configuration. The systems management application programming interface (API) provides functions that control configuration definition and adapter and link activation.

The connection types for SNA profiles are:

- Token-ring or other LAN types
- Ethernet (ETHERAND) network
- PC Network
- Twinaxial
- Synchronous data link control (SDLC)
- X.25 using X.25 Coprocessor adapter
- X.25
- Integrated services digital network DLC (IDLC)
- GDLC for adapter-provided DLC

Refer to online *Network Administration and Subsystem Guide* for additional background information.

Configuring for SNA

To select an SNA profile, follow these steps:

- On the Configuration Definitions window, select:
 - **Additional definitions**
 - One of the connection types listed in section “Connection Types and Related Features or Applications” on page 33 from the **Workstation Connection Type** list
 - APPC APIs or CPI Communications in the **Feature or Application** list
 - **Configure**
- On the Profile List window, select the appropriate SNA profile.

If a quick configuration path is available, it is presented. To access the advanced configuration path from the quick configuration window, select the **Advanced...** push button.

The SNA profiles are also available by selecting **Configure any profile or feature...** from the Options menu in the Configuration Definitions window.

Profiles

Following are discussions of the types of SNA profiles. While completing the profile, use the online help for a description of the parameters.

SNA Local Node Characteristics Profile

The Systems Network Architecture (SNA) local node characteristics profile contains the parameters needed to identify your workstation to the SNA network. A host that is performing network management needs the network ID and the control point (CP) name, also known as the local node name, so that when the workstation sends alerts to the host, the host recognizes the application running on the workstation.

For the local node characteristics profile, there are options for the local node alias name, data compression, and activating the Attach Manager. You access the local node characteristics options by selecting the **Options...** push button on the Local Node Characteristics window.

SNA Connections Profile

The SNA Connections profile defines the connections from a workstation to one or more SNA nodes. You can define connections to the following types of nodes:

Network node

An adjacent node using the Advanced Peer-to-Peer Networking (APPN) features and configured as a network node. The connection between the nodes supports control point-to-control point (CP-CP) sessions.

Peer node

An adjacent node configured as either an end node or an LEN node. The connection between the nodes does not support CP-CP sessions.

Host An adjacent node that is a System/370 or Enterprise System/9000 (ES/9000)-based host containing an SSCP (for example, a VTAM host). The connection between the nodes can optionally support CP-CP sessions.

SNA Dependent LU Server Definitions Profile

The SNA Dependent LU Server Definition defines the connection between a workstation and a dependent LU server. The dependent LU server handles communications between dependent LUs through an APPN network to a dedicated host.

This profile lets you define:

- Connection between the workstation where the dependent LU resides and the server
- Name of the primary and backup dependent LU server
- Physical unit name of the dedicated host
- Node ID or CPNAME of the server
- Whether a connection is automatically established to the dependent LU server when Personal Communications is activated on the workstation where the dependent LU resides

SNA Features Profile

The SNA features profile defines the following features:

- Local LUs
- Partner LUs
- Modes
- Transaction program definitions
- Transaction program defaults
- Transaction program security
- Conversation security
- LU-to-LU security
- CPI Communications side information

Before configuring the SNA features profile, you should define any data link control (DLC) profiles and the local node characteristics profile.

SNA Network Definitions: Before configuring your SNA network, you should be familiar with SNA networking terms and concepts and have your SNA network (nodes, logical units, and transaction programs) planned. Refer to the online *Reference* for background information on SNA networking terms and concepts.

The SNA subsystem also provides the systems management programming capabilities to configure a workstation to run advanced program-to-program communications (APPC) applications and use Advanced Peer-to-Peer Networking (APPN) capabilities. The systems management configuration verbs enable application programs to create and modify the SNA resources dynamically.

Local LUs Feature: The Local LU definition lets you configure both independent and dependent LUs for the node configured for the workstation.

Instead of defining individual local LUs, you can use the control point (CP) LU configured for the node.

Partner LUs Feature: A partner LU definition is a listing in your workstation's directory that contains the name and alias of an LU with which you communicate.

It is not always necessary to predefine partner LUs before communication. You can use implicit partner LUs. However, you must define all partner LUs that are referred to by an alias by the transaction programs on the local node.

If you are using the APPN networking features, you can define the partner LU definition without defining the partner LU location. Otherwise, you must define the partner LU when you are creating the connection to the node that owns the partner LU.

Modes Feature: A mode describes the class of service and transmission characteristics for communication sessions between LUs. You can establish several mode definitions, each describing a different set of session characteristics. After you create a mode definition, you can assign a unique mode name to a specific set of session characteristics. You can use the mode name to set up session characteristics for all workstations that require them.

Some reasons you might have to define your own mode are:

- Your partner supports only single sessions.
- Your transaction program (TP) is running on a dependent LU.
- The supplied receive pacing window is inappropriate and adaptive pacing is not used.
- Your transaction program uses a different mode name than what is supplied and the implicit mode capability is not used.

Instead of defining individual modes, you can use the IBM-supplied modes for the LU sessions. You need to define a mode only if you need a specific mode name defined or if you need to modify the mode characteristics. However, three of the IBM-supplied modes (SNASVCMG, CPSVCMG, and CPSVRMGR) cannot be changed at any time.

Transaction Program Definitions Feature: A transaction program (TP) is a set of instructions that uses APPC or CPI-C communication functions. By using these functions, your applications can communicate with other applications on the network.

When you define a local transaction program (stored on your workstation), you are providing the advanced program-to-program communications (APPC) portion of your node with the information that is necessary to start the processing for your transaction program. For example, you can determine where on the disk your transaction program is located and then determine whether it is necessary to assign a security level to it when it is started from a remote location.

You can configure transaction programs to start in any of the following ways:

Default

Defaults to the program type that the system detects from the executable file. For example, if the TP is a WIN-OS/2 program, it will run in a full-screen WIN-OS/2 session.

Full screen

Uses the program type the system detects from the executable file and runs it in a full-screen session. For example, if the transaction program is a WIN-OS/2 program, it will run in a full-screen WIN-OS/2 session.

Window

Uses the program type the system detects from the executable file and runs it in a window. For example, if the transaction program is a WIN-OS/2 program, it will run in a windowed WIN-OS/2 session on your OS/2 desktop.

Presentation Manager

If the program was written to use Presentation Manager functions, the program starts in an OS/2 Presentation Manager window.

Background

The program starts in an OS/2 background process.

Transaction Program Defaults Feature: You can specify three default properties for undefined transaction programs:

- The directory containing the executable program
- The transaction program presentation type
- The transaction program operation type

Transaction Program Security Feature: Transaction program security information includes user IDs and passwords for all individuals who have access to all protected programs. In addition to this, transaction program security information lets you know which transaction programs require passwords and which ones do not.

You can set whether conversation security is defined. By default, conversation security is not required for any transaction program. If necessary, set the security that is required for a transaction program.

After specifying that the transaction program security is required, you must define the conversation security. Use the conversation security feature in the SNA Features List window to set the conversation security.

Conversation Security Feature: When an incoming allocation request arrives at this node and it contains a user ID and password, the APPC attach

manager searches for a matching user ID and password combination within the node security profiles. Using the Conversation Security window, you can either explicitly define these user IDs and passwords or specify that the User Profile Management (UPM) feature is used to verify security.

When defining these conversation security requirements, you should select to either define the user IDs and passwords or use the UPM feature. You cannot choose to use both.

Refer to *Communications Server Quick Beginnings* for more information on using the UPM features.

LU-to-LU Security Feature: LU-to-LU security information includes passwords for all individuals who have access to protected LUs. When you create a security definition, each set of LUs is identified using a local LU alias and a partner LU.

CPI Communications Side Information Feature: You can specify the initialization information required by the CPI Communications subsystem to establish a conversation with a partner program.

SNA LUA APIs Profile

The LUA APIs extend the capabilities of Personal Communications by providing an API that supports communication between workstations and host applications.

The LUA APIs profile defines the parameters that are needed to establish SNA LU 0, LU 1, LU 2, and LU 3 communication sessions between a workstation and a host application.

The LUA requires one of the following target host systems:

- S/390 architecture host
- AS/400

Refer to *32-bit Conventional LUA Programming Reference* for more information about the LUA API.

X.25 Profiles

This section describes the X.25 profiles that you can configure. The following subsections contain more information:

- “Introduction to X.25 Profiles” on page 146
- “Configuring X.25” on page 146
- “Reconfiguring X.25 Support” on page 146
- “Profiles” on page 147

Introduction to X.25 Profiles

Before configuring the X.25 feature, you should have a basic understanding of X.25 concepts and how the X.25 feature is supported. Refer to the online *Network Administration and Subsystem Management Guide* for more information.

You should also understand how your OS/2 workstations use X.25 applications to communicate with other workstations and computers. If your organization has its own programmers who develop X.25 applications, you need to work with them to plan for the applications and to configure X.25 on the OS/2 workstations. Refer to *32-Bit X.25 Programming Reference* for more information about writing X.25 applications.

Configuring X.25

To select an X.25 profile, follow these steps:

1. On the Configuration Definitions window, select:
 - **Additional definitions**
 - **X.25 or X.25 Using X.25 Coprocessor Adapter** from the Workstation Connection Type list
 - One of the items in the Feature or Application list
 - **Configure**
2. On the Profile List window, select the appropriate X.25 profile.

The X.25 profiles are also available by selecting **Configure any profile or feature...** from the Options pull-down menu in the Configuration Definitions window.

Reconfiguring X.25 Support

Once configured, X.25 support is customized for a particular network connection. You do not need to reconfigure unless you do one or more of the following things:

- Move to another X.25 link
- Connect to a different network
- Add more X.25 adapters to your workstation
- Move X.25 adapters to different slots

Note



After Personal Communications has been installed on a workstation that uses X.25 support, use the ARTIC command to install ICAAIM.COM. If you are using an ISA machine, you will also need an ICAPARM.PRM file that adheres to the format outlined in your adapter documentation.

Profiles

The required (✓) and optional (O) profiles for X.25 and X.25 Using X.25 Coprocessor Adapter are listed in the tables that follow. While completing the profile, use the online help for a description of the parameters.

X.25 Profiles (Without X.25 Coprocessor Adapter)

Profile	Feature or Application			
	APPC APIs	CPI Com.	LUA APIs	X.25 APIs
SNA Phone Connect - Port Connection Mgr.	✓	✓	✓	✓
SNA Phone Connect - Connection Mgr.	✓	✓	✓	✓
X.25 links	✓	✓	✓	✓
X.25 directory entries	✓	✓	✓	O
X.25 routing table	✓	✓	✓	O
DLC - X.25	✓	✓	✓	
SNA local node char.	✓	✓	✓	
SNA connections	O	O	✓	
SNA features	O	O	✓	
SNA dependent LU server	O		✓	
SNA LUA APIs			✓	

For more information about X.25 and SNA Phone Connect support, see “X.25 Network Access Using SNA Phone Connect” on page 160.

X.25 Using X.25 Coprocessor Adapter Profiles

Profile	Feature or Application			
	APPC APIs	CPI Com.	LUA APIs	X.25 APIs
X.25 links	✓	✓	✓	✓
X.25 directory entries	✓	✓	✓	O
X.25 routing table	✓	✓	✓	O
DLC - X.25	✓	✓	✓	
SNA local node char	✓	✓	✓	
SNA connections	O	O	✓	
SNA dependent LU server	O		✓	
SNA features	O	O		
SNA LUA APIs			✓	

X.25 Links Profile

The X.25 links profile defines the characteristics of the X.25 network you are attached to. This profile specifies both link connection information and network-related information. Link connection information specifies characteristics of the link itself, while network-related information specifies characteristics of the network the link is connected to. This information must be specified before you can use the link definition. The values you specify must match your X.25 network subscription.

Default values are provided for the X.25 links profile. These defaults should be sufficient for most configurations. When completing this profile, make sure the *Link name* parameter value matches the *Link name* defined in the DLC - X.25 profile.

Creating or Changing Virtual Circuits for a Selected Link: Permanent virtual circuits (PVCs) are configured for a chosen link by selecting the **PVCs...** push button on the X.25 Links window.

Switched virtual circuits (SVCs) are configured by specifying the desired number of virtual circuits and the lowest logical channel number on the Virtual Circuit Ranges window (accessed from the X.25 Link Parameters window).

X.25 Directory Entries Profile

The X.25 directory is a table that associates user-provided directory entry names with the X.25 network address for your local data terminal equipment (DTE) and the remote DTEs that you communicate with. You can use these

names (rather than actual addresses) with the X.25 support in applications that establish connections with remote DTEs.

This feature lets an application be independent of configuration. For example, the application would not have to explicitly specify the link name, remote DTE address, or remote DTE address extension, but instead could refer to the directory name.

The types of directory entries that you can configure are:

- SNA permanent virtual circuit (PVC) directory entry
You associate a name with a remote DTE that you communicate with using SNA applications or SNA APIs on a PVC.
- Non-SNA PVC directory entry
You associate a name with a remote DTE that you communicate with using the X.25 API.
- SNA switched virtual circuit (SVC) directory entry
You associate a name with a remote DTE you communicate with using applications or SNA APIs on an SVC.
- Non-SNA SVC directory entry
You associate a name with a remote DTE that you communicate with using the X.25 API on an SVC.

The use of a directory is optional for X.25 API applications but is required for SNA applications that use X.25 support.

The types of directory entries are:

Local Assigns a link name to your local DTE. Because the workstation can be connected to multiple X.25 networks, you can specify a different network address (and address extension) for each of up to eight different network connections in each local directory entry.

The Local Directory Entry window associates a directory entry name with a local X.25 link name. The local directory entry allows a name to be assigned to local data terminal equipment (DTE).

Using directory entries, X.25 application programs can make and receive calls without specifying the details of X.25 network addresses and links.

Remote

Associates a link name with a remote DTE that you communicate with using a PVC or SVC. There are two types of remote entries:

SNA Create this type of entry if you want to use any of the SNA applications or SNA APIs when communicating with a remote DTE.

Non-SNA

Create this type of entry only if you are only going to use the X.25 API to communicate with a remote DTE.

Virtual circuit type

Indicates whether the virtual circuit is switched (SVC) or permanent (PVC).

X.25 Routing Table Profile

X.25 can support up to 40 applications concurrently. When it receives an incoming call packet from the network, it must determine which application to route the call to. X.25 uses the routing table to make this decision.

The QLLC protocol is provided when running SNA applications with X.25. In addition, IBM has defined the Enhanced Logical Link Control protocol (ELLC). All IBM products that support ELLC also support QLLC. The routing table is configured by IBM with two ELLC entries (SNAELC80 and SNAELC84) so that the X.25 DLC can receive incoming calls from SNA DTEs requesting a connection for ELLC operation and handle them appropriately. The table also includes two QLLC entries (SNAQLC80 and SNAQLC84).

It is recommended that if you want to only run SNA applications, you do not change the routing table. If you plan to use applications that use the X.25 API and need to receive incoming calls from the network, you need to create your own routing table entries.

Restoring an IBM-Supplied X.25 Routing Table: If you delete one of the IBM-supplied default routing table entries, you can either create another configuration file or create the table entry again using the values indicated below.

SNAELC80 - SNA ELLC (1980)

Routing Table Entry Name: SNAELC80 Type: SNA Call User
Data: C6 Priority Sequence: 1 Link Name: All links Called
Address and Extension: * Calling Address and Extension: *

SNAELC84 - SNA ELLC (1984)

Routing Table Entry Name: SNAELC84 Type: SNA Call User
Data: CE Priority Sequence: 2 Link Name: All links Called
Address and Extension: * Calling Address and Extension: *

SNAQLC80 - SNA QLLC (1980)

Routing Table Entry Name: SNAQLC80 Type: SNA Call User
Data: C3 Priority Sequence: 3 Link Name: All links Called
Address and Extension: * Calling Address and Extension: *

SNAQLC84 - SNA QLLC (1984)

Routing Table Entry Name: SNAQLC84 Type: SNA Call User

Data: CB Priority Sequence: 4 Link Name: All links Called
Address and Extension: * Calling Address and Extension: *

Configuration Hints and Tips for X.25 Links Profile

Following are some points to remember when configuring the X.25 Links profile.

Autoconnect Disconnect Delay Timeout:



It is recommended that you specify a 55-second autoconnect disconnect delay timeout on the Modem Parameters window if you specified the Transpac VX32 modem while defining the X.25 link.

Additional Parameters:



On the X.25 Link Parameters window, you can specify the appropriate parameter values for integrated services digital network (ISDN) using this field. It is available only when you specified ISDN as the adapter type.

On the B-channel, you can configure a permanent connection or incoming or outgoing call directory entries for each ISDN X.25 link. On the D-channel, configuring an incoming call directory entry is only necessary if the notification class is conditional or unconditional.

If you want your X.25 ISDN connections to always be initiated remotely, you need to configure an incoming call directory entry. If you want to always initiate a connection to the ISDN network, you need to configure an outgoing call directory. If you want to do both, you need to configure an incoming call directory entry and an outgoing call directory for each X.25 link.

For both incoming and outgoing call directories, the X.25 subsystem passes the directory name to the connection manager when it attempts an outgoing call or when it requests that the connection manager calls. The connection manager then uses the information in the directory when planning an outgoing call or screening incoming calls.

Link Name:



If you are using X.25 DLC, the **Link name** field must match the link name defined in the X.25 DLC profile.

Local CCITT (ITU-T) Compliance:



On the X.25 Link Parameters window, packet sizes and PVCs are dependent on this choice. If you change from 1984 to 1980 or from 1988 to 1980 (Xpander card only), you can create an error condition if you have configured packet sizes larger than 1024 bytes.

Operation Mode:



You specify your modems operation mode on the Modem Parameters window. When defining your X.25 link parameters for the modem, you should select *DTE* when connecting your workstation to a network. Partner mode lets you connect your workstation to another X.25 DTE directly, for example, through a modem eliminator or a pair of modems and a connecting line, without an intervening network.

When in Partner mode, your workstation acts like a data circuit-terminating equipment (DCE) device. This allows you to make a high speed (up to 1.5 Mbps) point-to-point connection with another X.25 DTE, for example, a 37xx communication controller running the Network Control Program Packet Switching Interface (NPSI).

When you connect two workstations back-to-back (using two modems or one modem eliminator), one must be configured as a DTE and the other as a partner (DCE). All other link parameters configured for the two workstations must be the same.

Virtual Circuit Ranges:



When you are defining your X.25 link parameters, configure at least one PVC or SVC in order to use an X.25 link. Select **Virtual circuit ranges** from the list of **Additional parameters**. This information can

be found on the form that the network provider returned to you when access to the network was requested. This information must be specified by you before the link profile can be used.

VCI = Virtual Circuit Identifier

LPC = Lowest PVC

HPC = Highest PVC

LIC = Lowest Incoming-only SVC

HIC = Highest Incoming-only SVC

LTC = Lowest Two-way SVC

HTC = Highest Two-way SVC

LOC = Lowest Outgoing-only SVC

HOC = Highest Outgoing-only SVC

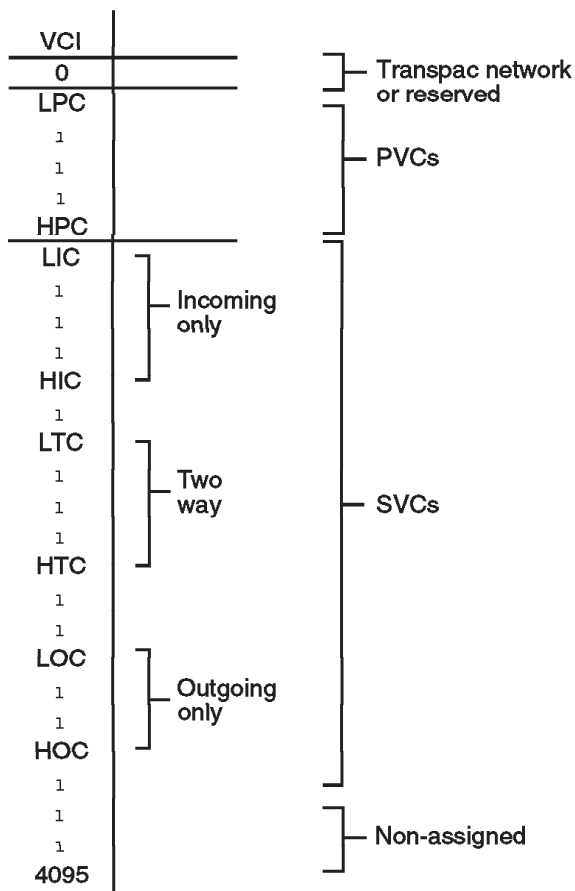


Figure 2. Virtual Circuit Range Restrictions

Virtual Circuit Range Restrictions

Figure 2 shows the relationship between the virtual circuit ranges for permanent virtual circuits (PVCs) and switched virtual circuits (SVCs). SVCs include incoming-only, two-way, and outgoing-only SVCs. The following restrictions apply:

- Virtual circuit 0 can be used only when the user is attached to the Transpac network and has subscribed to the logical channel zero option. Otherwise, virtual circuit 0 is reserved exclusively for the transmission of restart, diagnostic, and registration packets.
- Virtual circuits from lowest PVC (LPC) through highest PVC (HPC) is the range allocated for PVCs. LPC can range from 1 through 4095 (or from 0 through 4095 for Transpac).
- By convention, DCEs assign the lowest available logical channel number to incoming virtual circuits, while DTEs assign the highest available logical channel number to outgoing virtual circuits.
- Virtual circuits from lowest incoming-only SVC (LIC) through highest incoming-only SVC (HIC) is the range assigned to incoming-only virtual circuits.
- Virtual circuits from lowest two-way SVC (LTC) through highest two-way (HTC) is the range used for either incoming or outgoing virtual circuits.
- Virtual circuits from lowest outgoing-only SVC (LOC) through highest outgoing-only SVC (HOC) is the range assigned to outgoing-only virtual circuits.
- All virtual circuits below LPC, between HPC and LIC, between HIC and LTC, between HTC and LOC, and between HOC and 4095, if any, are non-assigned virtual circuits.
- PVCs are always active. To avoid frequent rearrangement of virtual circuits, not all virtual circuits within the range allocated for PVCs are necessarily assigned.
- In the absence of PVCs, virtual circuit 1 (0 for Transpac) is available for LIC. In the absence of PVCs and incoming-only SVCs, virtual circuit 1 (0 for Transpac) is available for LTC. In the absence of PVCs, incoming-only SVCs, and two-way SVCs, virtual circuit 1 (0 for Transpac) is available for LOC.
- The actual value for a PVC or SVC can be from 1 through 4095 (or from 0 through 4095 for Transpac).
- For 1980 and 1984 CCITT compliance, the maximum combined number of PVCs and SVCs (incoming, two-way, and outgoing) that can be configured for a link is 128. For 1988 CCITT compliance, the maximum combined number of PVCs and SVCs (incoming, two-way, and outgoing) that can be configured for a link on the Xpander adapter is 4095.
- For 1980 and 1984 CCITT compliance, a maximum of 64 PVCs can be configured for a link. For 1988 CCITT compliance, a maximum of 4095 PVCs can be configured for a link on the Xpander adapter.
- In a peer-to-peer environment with a modem eliminator, a DCE with an incoming-only SVC and a DTE with an outgoing-only SVC

is not supported. In this environment, a DCE and a DTE with a two-way SVC is supported, a DCE and a DTE with an outgoing-only SVC is supported, and a DCE and a DTE with an incoming-only SVC is supported. When the DCE and the DTE are both configured with outgoing-only SVCs, the link should be activated from the DTE. When the DCE and the DTE are both configured with incoming-only SVCs, the link should be activated from the DCE.

X.32 Signal Handling:



You can specify X.32 signaling in the XID Identity and Signature window for your synchronous and autosynchronous modems after you define your modem parameters. You must do this if your network requires X.32 signaling procedures for identification and security.

Configuration Hints and Tips - X.25 Directory Entries Profile

Following are some points to remember when configuring the X.25 Directory Entries Profile.

Local Address:



Some networks require that the call request packet not contain a calling address field. No entry should be made in this item for those networks.

X.25 User Facilities:



If you are defining an SVC directory entry, you can define the X.25 optional facilities supported by your network provider on the Optional User Facility Parameters window.

The most common of X.25 optional facilities are closed user group and network user ID. Closed user group provides a form of security for X.25 networks where many different companies share the same public

network. Network user ID enables the transmitting DTE to provide billing, security, or management information on a per call basis to the DCE.

A hexadecimal entry field is supplied for entry of any optional facilities.

Configuration Hints and Tips for X.25 Routing Table Profile

Following is a point to remember when configuring the X.25 Routing Table Profile.

Call User Data:



The *Call user data* parameter is used in the Routing Table Entry window. For non-SNA entries, you must type the call user data in the entry field. For SNA entries, choose from the supplied values.

SNA Phone Connect Profiles

This chapter describes the SNA Phone Connect profiles that you can configure. The following sections contain more information:

- “Introduction”
- “Asynchronous Switched Connectivities” on page 157
- “Asynchronous Leased Line Connectivities” on page 157
- “Synchronous Switched Connectivities” on page 158
- “Synchronous Leased Line Connectivities” on page 159
- “AutoSync Connectivities” on page 160
- “X.25 Network Access Using SNA Phone Connect” on page 160
- “Configuring SNA Phone Connect” on page 162
- “Profiles” on page 162
- “Configuration Hints and Tips for SNA Phone Connect” on page 162

Introduction

SNA Phone Connect takes advantage of wide area network (WAN) connectivity over switched and nonswitched lines. Automatic dialing capabilities are supported for asynchronous (SNA over Async), synchronous, and auto-synchronous communications for modems.

SNA Phone Connect uses automatic switched call management: outgoing calls are placed only when the need for a link is detected; incoming calls are automatically answered; and unused links are automatically disconnected.

Connections using SNA Phone Connect can be made over standard analog public switched telephone networks, digital networks, or integrated services digital network (ISDN) at speeds up to 64 Kbps.

SNA Phone Connect provides a status window that displays status when a call is initiated and then disappears when the call is connected.

The SNA Phone Connect connection types are:

- Synchronous data link control (SDLC)
- X.25
- Integrated services digital network DLC (IDLC)
- GDLC for adapter-provided DLC

Applications written to the following APIs can also use the auto-dial capabilities:

- APPC
- CPI-C
- LUA

Asynchronous Switched Connectivities

You can use switched (dial-up) asynchronous connections using SNA Phone Connect with the serial communication port (COM Port) in your workstation. You can use up to 16 serial communication ports at the same time. You can also use adapters configured as serial ports, such as the IBM PS/2 MultiProtocol Adapter/A, the IBM PS/2 Dual Asynchronous Adapter/A, or internal modems. The maximum speed supported for asynchronous communication through a modem is 115.2 kbps.

You can use the SDLC protocol for asynchronous switched connections.

Using SNA Phone Connect support for switched asynchronous, the following connections are possible:

- Connections to an AS/400 for 5250 emulation, LU 6.2 applications, or 3270 emulation using pass-through to an S/390 host
- Connections to the Advantis** network for 5250 emulation and LU 6.2 applications
- Connections to another system such as Personal Communications V4.2 or Communications Server running features or applications such as gateway or APPC

Asynchronous Leased Line Connectivities

You can use leased line (nonswitched) asynchronous connections using SNA Phone Connect with the serial communication port (COM Port) in your workstation. You can use up to 16 serial communication ports at the same

time. You can also use adapters configured as serial ports, such as the IBM PS/2 MultiProtocol Adapter/A or the IBM PS/2 Dual Asynchronous Adapter/A.

You can use the SDLC protocol for asynchronous leased line connectivities.

If you are using a leased line through a public switched telephone network (PSTN), you can use any modem that supports the type of leased line you have (2-wire or 4-wire). Refer to your modem documentation to configure your modem for an asynchronous leased line connection.

You can also use a null-modem cable or a modem eliminator to connect two workstations using asynchronous leased line connection using SNA Phone Connect.

Synchronous Switched Connectivities

Synchronous switched (dial-up) connections using SNA Phone Connect are supported with the following hardware options:

- IBM Multiprotocol Communications Adapter (73G7099)
- IBM PS/2 MultiProtocol Adapter/A (MPA)
- IBM Wide Area Connector (WAC) for Micro Channel and AT/ISA/EISA bus workstations

Note



You need the IBM WAC MAC Version 2.0; Version 1.0 does not support auto-dial capabilities.

The following 16 physical interfaces on the IBM WAC adapter are supported for switched connections using SNA Phone Connect:

- RS232D/V.24 interface for data transfer rates up to 19.2 Kbps
- V.35 interface for data transfer rates up to 64 Kbps

You can use up to 16 ports or adapters, including both ports on the IBM WAC adapter. You can only use one MPA in your workstation for synchronous switched connections using SNA Phone Connect.

You can use both the SDLC and X.25 protocols for synchronous switched connections; however, the X.25 protocol can only use the IBM WAC adapter.

If you are using SNA Phone Connect support synchronous connections with the IBM MPA, make sure you have the latest adapter level.

Using the SNA Phone Connect support for switched synchronous, the following connections are possible:

- Connections to an Advantis network for 3270 emulation
- Connections to an S/390 host system
- Connections to an AS/400 host for 5250 emulation, LU 6.2 applications, or 3270 emulation using pass-through to an S/390 host
- Connections to another system such as Personal Communications V4.2 or Communications Server running features or applications such as gateway or APPC
- Connections to a public or private X.25 network

Synchronous Leased Line Connectivities

Leased line support for synchronous connections through the IBM MultiProtocol Adapter is supported as an SDLC connection type.

You can use leased line (nonswitched) synchronous connections using SNA Phone Connect with the IBM Wide Area Connector (WAC) adapter. You also need the IBM WAC Version 2.0 medium access control (MAC) software. You can use any of the four different physical interfaces that the IBM WAC adapter supports:

- RS232D/V.24 interface for data transfer rates up to 19.2 Kbps
- RS422/449 interface for data transfer rates up to 1.544 Mbps
- V.35 interface for data transfer rates up to 2.048 Mbps
- X.21 interface for data transfer rates up to 2.048 Mbps

You can use up to 16 ports or adapters, including both ports on the IBM WAC adapter.

You can use both the SDLC and X.25 protocols for synchronous leased line connections using the IBM WAC adapter.

If you are using a leased line through a public switched telephone network (PSTN), you can use any modem that supports the type of leased line you have (2-wire or 4-wire). Refer to your modem documentation to configure your modem for a synchronous leased line connection.

You can also use a null-modem cable to connect two workstations using the IBM Wide Area Connector (WAC) adapters. Refer to the IBM WAC adapter documentation and the TECHREF.FIL file on the IBM WAC adapter software diskette for information on using a null-modem or a "crossover cable". You

will also need to change some of the configuration parameters for the IBM WAC MAC. Refer to the configuration parameter online helps for more information.

AutoSync Connectivities

Use AutoSync connections using SNA Phone Connect to connect to synchronous modems using a Hayes AutoSync compatible modem and the serial communication port (COM Port) in your workstation. In the past, you needed a synchronous communication adapter and a synchronous modem to connect to another synchronous modem. The AutoSync capability in SNA Phone Connect enables you to connect to a synchronous modem using a standard serial communication port (COM Port) in your workstation and a Hayes AutoSync compatible modem.

You can use both the SDLC and X.25 protocols for AutoSync connectivities.

Using the SNA Phone Connect support for switched AutoSync, the following connections are possible:

- Connections to an Advantis network for 3270 emulation
- Connections to an AS/400 host for 5250 emulation and LU 6.2 applications
- Connections to an S/390 host system
- Connections to another system such as Personal Communications V4.2 or Communications Server running features or applications such as gateway or APPC
- Connections to a public or private X.25 network

X.25 Network Access Using SNA Phone Connect

Use SNA Phone Connect to access an X.25 network or data communication equipment (DCE) over either switched or leased lines. You can use the IBM Wide Area Connector (WAC) adapter for both Micro Channel and AT/ISA bus workstations and a synchronous modem. You can also use the standard serial communication port and a Hayes AutoSync modem. The X.25 subsystem also provides X.32 XID protocols, which are required by some public packet switched data networks (PSDNs).

All SNA functions and applications that use X.25 in existing configurations are enabled for accessing the X.25 network using the SNA Phone Connect. All non-SNA X.25 applications that currently use the X.25 API provided are also enabled for accessing the X.25 network using the SNA Phone Connect feature.

X.25 Using a COM Port with AutoSync

You can use the standard serial communication port (COM Port) to access an X.25 network or data communication equipment (DCE) if you have a Hayes AutoSync compatible modem. In the past, you needed a synchronous communication adapter and a synchronous modem to connect to an X.25

network. The AutoSync capability in SNA Phone Connect enables you to connect to a synchronous modem using a standard serial communication port (COM Port) in your workstation and a Hayes AutoSync compatible modem.

Note



Only switched connections are supported using AutoSync modems.

X.25 Using the IBM WAC Adapter

You can use the IBM WAC adapter in either the Micro Channel or the ISA/EISA/AT bus workstations and a synchronous modem to connect to an X.25 network. Both switched or dial-up and leased lines are supported. The device driver for the IBM WAC adapter is on the CD-ROM in the \DRIVERS\IBMWAC subdirectory.

Switched Connections Using SNA Phone Connect: Switched connections using SNA Phone Connect to access the X.25 network are supported using either the RS232D/V.24 interface (for speeds up to 19.2 Kbps) or the V.35 interface (for speeds up to 2.048 Mbps).

Use any synchronous modem that supports V.25 bis call setup protocols with the RS232D/V.24 interface. You can use any CSU, DSU, or other such device that supports V.25 bis call setup protocols with the V.35 interface.

Note



Only the bit-oriented protocol for V.25 bis call control messages is supported. Asynchronous or character-oriented V.25 bis protocols are not supported.

Leased Line Connections Using SNA Phone Connect: Use any of the four physical interfaces supported by the IBM WAC adapter for leased line access to an X.25 network. Leased line connections are also referred to as permanent connections or nailed-up connections.

You can use any modem, CSU, DSU, or other such device that is compatible with the physical interface of your IBM WAC adapter.

Configuring SNA Phone Connect

To configure SNA Phone Connect, select a profile from the list displayed on the Profile List window after you select the connection type.

Profiles

Following are discussions of the types of SNA Phone Connect profiles. While completing a profile, use the online help for a description of the parameters.

SNA Phone Connect - Connection Manager Profile

The connection manager uses and manages all port connection managers defined at the workstation. The connection manager profile is like setting up a telephone book. You create outgoing call directory entries for other systems that your workstation will call. You create incoming call directory entries to receive and accept incoming calls from other systems. This profile is not required if you are using nonswitched (or permanent) connections.

SNA Phone Connect - Port Connection Manager Profile

The port connection manager controls communication hardware ports and the modems that are attached to the communication hardware through the medium access control (MACs) devices. The port connection manager initializes the communication hardware ports and the modems. For example, it instructs the hardware port and the modem to initiate an outgoing call. The port connection manager profile defines the type of modem connection, port name, and port characteristics.

Your workstation can use the following connections supported by SNA Phone Connect:

- Asynchronous switched connections
- Asynchronous leased line connections
- Synchronous switched connections
- Synchronous leased line connections
- AutoSync connections
- ISDN connections
- X.25 connections

Configuration Hints and Tips for SNA Phone Connect

Following are some points to remember when configuring SNA Phone Connect.

Type of Subfield to Create

Tip



The types of subfields available for configuration depend on the network switch type installed at your location.

When you are in circuit mode, the **Bearer capability** (for ISDN), **Modem/Line Characteristics** (for X.21, V.24, and V.35 connections), and **Called party number** subfields are required for an outgoing call directory entry. Although you can save a directory entry without defining these subfields, you will not be able to connect successfully without them. When you are in packet mode, the **Called party number** is not required.

You can specify multiple **Called party number** subfields. The connection manager serially tries them in order to connect to the remote computer. That is, if the first number cannot be reached for any reason, the connection manager tries the second number. It tries all of the numbers you have configured one time until it makes a connection. If it does not make a connection in the first series of tries, it does not try anymore.

Coexistence with other COM port applications

Tip



If you are using the serial communication (COM) port for asynchronous or autosynchronous SNA Phone connections, Personal Communications claims sole ownership of the port when it starts. If other applications try to access the port while Personal Communications is started, these applications might fail or an active connection might be lost. To avoid these problems, stop Personal Communications before you start any other application that uses the same COM ports.

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on recycled paper containing 10%
recovered post-consumer fiber.

GC31-8795-00



Spine information:



Personal Communications
Version 4.3 for OS/2

Personal Communications Quick Beginnings