Personal Communications for Windows, Version 5.5

IBM

Quick Beginnings

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> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under "Appendix. Notices" on page 93.

Contents

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 the online help whenever you need additional information. See "Where to Find More Information" on page vi for information about online help, the Personal Communications library, and related publications. Refer to the IBM® Glossary of Computing Terms at the following URL for definitions of technical terms used throughout this book:

http://www.networking.ibm.com/nsg/nsgmain.htm

This book is for users of:

- *IBM Personal Communications for Windows, Version 5.5*
- *IBM Personal Communications AS/400 for Windows, Version 5.5*

See "What's in the Packages" for information regarding what is in each package.

The screens 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.

In this book, *Windows*® refers to Windows 95, Windows 98, Windows NT, Windows Me, and Windows 2000. When information is applicable only to a specific operating system, this will be indicated in the text.

What's in the Packages

Personal Communications Version 5.5 provides two basic CD-ROM package options. The packages are:

1. A CD-ROM (Version 5.5) containing *IBM Personal Communications for Windows, Version 5.5*, which provides 5250, 3270, and VT emulation and connections to z/OS, z/VM, AS/400®, S/390®, ASCII, and System/36™ or System/38™ (S/3X) host systems.
2. A CD-ROM (Version 5.5) containing *IBM Personal Communications AS/400 for Windows, Version 5.5* which provides 5250 and VT emulation and connections to remote systems.

The information in this book applies to both packages.

In addition to the products previously mentioned, both CD-ROMs contain the following:

- Adobe Acrobat reader to enable you to read softcopy books (.PDF) available on the CD-ROM
- Book files in .PDF format, which allow you to view the books shipped with the products

Notes:

1. For each of the two basic packaging options, there are also separate CD-ROMs, depending on:

National Languages
There is a multiple-language version that supports up to nineteen languages at the same time. There are also single language versions for

- Traditional Chinese
- Simplified Chinese
- Korean

Security Levels
Personal Communications is shipped at the 168-bit encryption level.
2. There is a separate CD-ROM containing the DB2 Connect® product.

Where to Find More Information

The following sections discuss getting help when you are installing, configuring, or using Personal Communications.

Online Help

The 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. You can use Personal Communications online help just as you use the online help for Windows.

Use help to obtain information about:
- 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

The *Quick Beginnings* book is also available online, in HTML form. You can access the book from the **Help** menu in the Session Manager.

Personal Communications Library

The Personal Communications library includes the following publications:
- *IBM Personal Communications for Windows, Version 5.5 CD-ROM Guide to Installation*, GC31-8079-06
- *IBM Personal Communications AS/400 for Windows, Version 5.5 CD-ROM Guide to Installation*, GC31-8080-06
- *IBM Personal Communications for Windows, Version 5.5 Quick Beginnings*, GC31-8679-02
- *IBM Personal Communications for Windows, Version 5.5 Access Feature*, SC31-8684-02
- *IBM Personal Communications for Windows, Version 5.5 5250 Emulator User's Reference*, SC31-8837-00
- *IBM Personal Communications for Windows, Version 5.5 3270 Emulator User's Reference*, SC31-8838-00
- *IBM Personal Communications for Windows, Version 5.5 VT Emulator User's Reference*, SC31-8839-00
- *IBM Personal Communications for Windows, Version 5.5 Administrator's Guide and Reference*, SC31-8840-00

- *IBM Personal Communications for Windows, Version 5.5 Emulator Programming*, SC31-8478-05
- *IBM Personal Communications for Windows, Version 5.5 Client/Server Communications Programming*, SC31-8479-05
- *IBM Personal Communications for Windows, Version 5.5 System Management Programming*, SC31-8480-05
- *IBM Personal Communications for Windows, Version 5.5 CM Mouse Support User's Guide and Reference*
- *IBM Personal Communications for Windows, Version 5.5 Host Access Class Library*, SC31-8685-02
- *IBM Personal Communications for Windows, Version 5.5 Configuration File Reference*, SC31-8655-04

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

Quick Beginnings
> The HTML form of *Quick Beginnings* contains the same information as the PDF version.

Host Access Class Library for Java
> 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*

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

- For the client   *NetWare Client for Windows*
- For NetWare for SAA®   *NetWare for SAA*

Contacting IBM

This section lists ways you can reach IBM in case you encounter a problem or concern with Personal Communications. Depending on the nature of your problem or concern, we ask that you be prepared to provide the following information to allow us to serve you better.
- 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 SNA Node Configuration file
  - 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 at the Personal Communications support Web page 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.

For information about the tools available to help with problem analysis, refer to the individual VT, 3270, and 5250 emulators user's references for IBM Personal Communications Version 5.5. These references also provide detailed, specific emulator information about printing, file and data transfer, node operations, and other topics.

Support Options

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

- Access the Personal Communications Web page at the following URL:

 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.

Part 1. Introduction

Chapter 1. Welcome to Personal Communications

Personal Communications brings the power of personal networking to your workstation by exploiting networking capabilities to provide a variety of connectivity options supporting local area network (LAN) and wide area network (WAN) environments. Whether it is for host terminal emulation, client/server applications, or connectivity, Personal Communications offers a robust set of communication, networking, and administrative features.

Personal Communications is a full-function emulator. In addition to host terminal emulation, it provides these useful features:
- File transfer
- Dynamic configuration
- An easy-to-use graphical interface
- APIs for SNA-based client applications
- An API allowing TCP/IP-based applications to communicate over an SNA-based network

A variety of SNA-based client application programming interfaces (APIs) are supported by Personal Communications. You can create applications that use the peer-to-peer client APIs, which are based on LU 6.2 and provided by Personal Communications. These APIs let you simultaneously access and process information on peer workstations.

Personal Communications supports Advanced-Peer-to-Peer Networking (APPN) as an end node, and uses the advanced network features: high-performance routing (HPR) and dependent LU requester (DLUR).

AnyNet® SNA over TCP/IP is a feature of Personal Communications which allows emulator and client/server SNA applications to communicate over a TCP/IP network.

What's New in IBM Personal Communications for Windows, Version 5.5

Personal Communications Version 5.5 is based on the popular Personal Communications Version 5.0. If you are familiar with Personal Communications Version 5.0, you might want to review some of the new functions and enhancements.

The following sections briefly describe the major new Personal Communications functions.

Programming Enhancements

Windows 2000 Certification
Personal Communications 5.5 holds Microsoft Windows 2000 certification.

Session Manager
The Personal Communications 5.5 Session Manager provides a convenient graphical interface for starting, creating, and managing workstation profiles and batch files.

Installation/Configuration Enhancements

Use of Windows Installer

One specific installation enhancement is that the user can specify the default location of configuration files. Refer to the *Personal Communications Version 5.5 CD-ROM Guide to Installation* for more information about this feature and other installation enhancements.

Corrective Service Distributions and Authorized Program Analysis Reports

Authorized users may use the WebUpdate tool in the **Administrative and PD Aids** menu to check for Personal Communications Corrective Service Distributions (CSDs) and Authorized Program Analysis Reports (APARs) via the Internet.

Tivoli® Support

Personal Communications Version 5.5 is Tivoli-Ready certified. It is integrated with Tivoli Enterprise™ as a Desktop application, and provides a Plus module for its application management. The Plus module, called IBMPCOMM Plus, includes event management, software distribution, and administrative tasks. Support for problem determination is new. The Plus module includes tasks for remote operation of the Integrated Trace facility.

Other Enhancements

Defining the session view from a batch file

When starting a session from a batch file, you can define the view to be used with that session.

Convert Macro to XML

A macro may now be converted to XML, in addition to VBScript.

Telnet 3270E printer association

The Telnet 3270E standard lets you specify an association between a display and a printer session. When a host is configured for printer association, the host specifies which printer is associated with which terminal. Thus, you do not need to know what LU, port number, and other parameters are needed for the printer session.

Win32 Cut, Copy, and Paste Hotkeys

For 3270 and 5250 sessions, Personal Communications includes two .KMP keyboard map files that map the standard Win32 hotkeys for Cut, Copy, and Paste to Ctrl+X, Ctrl+C and Ctrl+V, respectively. The user may utilize the new keyboard map files, or may add these new key values to an existing map file. The key values for the following 3270 functions have been changed: Page Up, Page Down, Enter, and New Line. The key values for the following 5250 functions have also been changed: Enter and New Line.

For 3270 sessions, the new map file is pcswinkb3.kmp. For 5250 sessions, the new map file is pcswinkb5.kmp.

Windows 2000 Power Management

Personal Communications complies with Windows 2000 Power Management requirements for handling sleep events (stand by and hibernate). This support minimizes session interruptions due to network disconnections caused by sleep on Windows 2000 and subsequent versions.

1390/1399 Code Page Support

Personal Communications supports 1390 and 1399 code pages in Windows

NT® and 2000; this allows Japanese character processing. Refer to the *Administrator's Guide and Reference* for more information about 1390/1399 code page support.

Hindi Support
Personal Communications supports 1137 Hindi code page use for Windows NT and 2000.

Edit Wrap Pasted Text
Personal Communications allows the pasting of copied text across fields and lines without breaking in the middle of a word, or ending a line with an invalid word. Cut/Copy and Trim options have also been added to the **Edit** menu.

Express Logon Feature
The Express Logon Feature allows a Personal Communications TN3270E user to logon to a host application without sending the user ID and password. A macro can be created or modified to utilize this feature.

Smart Card Support
Personal Communications supports Smart Cards and other cryptographic devices, which allows you to store a certificate in a dedicated security device.

Scaling
Personal Communications uses BestFit to map the screen size (display resolution) to the printed page size (printer resolution).

Higher DPI Printer Support
Personal Communications allows more scaling options so that graphic print jobs can be printed at the correct size on printers at 600 DPI and above.

Capture View
This function allows you to automatically add all open sessions (with the current session IDs) to a view and add that view to a batch file. You can add up to 26 sessions in one view; you can save as many as 8 views in a batch file.

Personal Communications Program Icons

When you have installed Personal Communications, the main functions that you can use are displayed as icons. Icons are grouped in subfolders of the IBM Personal Communications program folder.

A brief explanation of each function follows:

Start or Configure Sessions
Use this icon to bring up the Session Manager. This dialog allows you to start or configure sessions. During configuration, you can specify the session type, screen size, LU number, graphics support, the type of communication link and its parameters, as well as other information. You can save all this information in a workstation profile. After saving, you can start the session by just clicking the session icon. Authorized users can also create new batch files from this dialog.

SNA Node Configuration
>Use this icon to configure an SNA node and associated resources or to change advanced configuration parameters. Although most emulator sessions can be configured without the use of this utility, you will need to create an SNA node configuration to enable client/server and peer communication. This can also be run from an active session by selecting **Actions → Launch → SNA Node Configuration**.

IBM Software Registration
>Use this icon if you want to be notified of any program updates provided by IBM.

Administrative and Problem Determination (PD) Aids

Display SNA Sense Data
>Use this icon to display SNA sense data and associated explanations. Sense data is SNA error information located in internal SNA flows, error logs, error messages, and traces. Some Personal Communications error messages include sense data.

Information Bundler
>Use this icon to gather system files and specific trace and log files, as well as registry information, such as the software installed or running on a machine. This can also be run from an active session by selecting **Actions → Launch → Information Bundler**

Internet Service
>Use this icon to send system and diagnostic data collected by the Information Bundler to an FTP server. This can also be run from an active session by selecting **Actions → Launch → Internet Service**.

Log Viewer
>Use this icon to view, merge, and sort the Personal Communications message and trace logs. Personal Communications logs errors and informational messages during initialization and operation. This can also be run from an active session by selecting **Actions → Launch → Log Viewer**.

Migration Utility
>Use this icon to migrate your user-class and system-class files and desktop icons to Personal Communications Version 5.5.

Product Update Tool
Use this icon to access WebUpdate and check for Authorized Program
Analysis Reports (APARs) and Corrective Service Distributions (CSDs).

SNA Node Configuration Verification
Use this icon to verify that the ASCII editing changes that you have
manually made to the SNA node configuration data are valid.

SNA Node Operations
Use this icon to perform SNA node operations, such as starting or stopping
resources or displaying resource information. This can also be run from an
active session by selecting **Actions → Launch → SNA Node Operations**.

Trace Facility
Use this icon to turn trace functions on and off and to capture
communication-protocol information that passes between your workstation
and other host systems. You can use traces to resolve communication
problems. This can also be run from an active session by selecting **Actions
→ Launch → Trace Facility**.

Product Information

The Personal Communications documentation is available on the installation
CD-ROM. You can copy any of these PDF or HTML files to your workstation, for
viewing at your convenience.

Readme-Please!
The Readme file includes recent updates to the documentation or other
information that might be of special interest.

Manuals

Quick Beginnings
This book describes how to install, configure, and start Personal
Communications.

Emulator User's Reference
This set of books contains specific 3270, 5250, and VT emulator
information for users of Personal Communications.

Administrator's Reference
This book contains advanced configuration, national language
support, SNA and AnyNet information, and PDT information for
administrators of Personal Communications.

Emulator Programming
This book provides necessary programming information for you to
use the IBM Personal Communications Emulator High-Level
Language Application Program Interface (EHLLAPI), Dynamic

Data Exchange (DDE), Personal Communications API (PCSAPI), and Server-Requester Programming Interface (SRPI).

Client/Server Communications Programming
This book describes support for the APPC and LUA application programming interfaces (APIs).

System Management Programming
This book describes how to use the Node Operations Facility (NOF) application programming interface (API).

CM Mouse User's Guide and Reference
This book describes how to use the CM Mouse interface.

Configuration File Reference
This book describes how to edit and verify configuration data using an ASCII editor.

Host Access Class Library
This book provides a core set of classes that allow the development of platform-independent applications that can access host information at the data stream level.

In addition to the printed books, the following online publications are included:

Host Access Class Library for Java
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.

Utilities

The APING and AFTP utilities are available in U.S. English only.

> **Note**
>
> THESE PROGRAMS ARE PROVIDED ON AN AS-IS BASIS WITHOUT ANY WARRANTY OF ANY KIND, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE EXPRESSLY DISCLAIMED.

AS/400 Connection Configuration
Use this icon if you want to define connections to each AS/400 host that will use the data transfer function.

Certificate Management
Use this icon to enable Secure Sockets Layer (SSL) communication between your communication server and client. Refer to *IBM Personal Communications Version 5.5 Administrator's Guide and 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 *IBM Personal Communications Version 5.5 Administrator's Reference* for details on how to use this utility.

Check Connection APING

Use this sample CPI-C program to verify network connections. You can use APING to establish network connections, diagnose problems, and take simple performance measurements. APING exchanges data packets with a partner computer and measures how long the data transfer takes.

CM Mouse

Use this icon to 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 making any changes to those host programs.

Note: CM Mouse is a sample application that has been provided for use as a utility. It is only available in English and only runs on SBCS systems.

This utility can only be installed using the Custom Installation option. Refer to the *CD-ROM Guide to Installation* for more information.

CM Mouse Configuration

Use this icon to configure the CM Mouse Scripting utility.

Convert Macro

Use this icon to convert an existing Personal Communications macro to an XML or VBScript file.

Data Transfer (AS/400 only)

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

Database Access

Use this icon to start the Database Access utility that lets you retrieve data from a database, such as an SQL server, Microsoft Excel, Lotus® 1-2-3®, or

dBASE database (that complies with Microsoft ODBC standards, Level 1). You can then pass the retrieved data directly to Excel, Lotus 1-2-3, and other applications.

DOS EHLLAPI

Use this icon to enable or disable DOS-based EHLLAPI programs that communicate with the 32-bit Personal Communications emulator.

Menu-Bar Customization

Use this icon to customize the menu bar in the session window.

Multiple Sessions

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

Transfer File AFTP

Use this program to provide a fast and efficient transfer of text and binary files.

User Preferences

Use this icon if you want to set up or change the user preferences, such as changing the user interface language.

ZipPrint (3270 only)

Use this icon to start the ZipPrint program, which allows you to print host system files or screens, PROFS® or OfficeVision® notes, calendars, and documents, CMS files, and XEDIT workspaces. When started, ZipPrint adds an item to the menu bar of the session window.

Personal Communications Sessions

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

Display session

Use your workstation as a display terminal connected to the host system.

Printer session

Use your workstation printer as a host system printer.

Client/server session
> Establish connections that allow peer communications using CPI-C and APPC (LU 6.2).

Personal Communications Connections

Personal Communications supports a variety of connections to the following host systems. Following are the icons you will encounter when you begin to configure an emulator session:

S/390

AS/400

ASCII

S/3X

System/390® Emulator Connections

Table 1. System/390 Emulator Connection Icons

Interface	Attachment
LAN	LAN via IEEE 802.2
	3270 via NWSAA or Communications Server for Windows NT
	Telnet3270
	3270 via AS/400 (passthru)
	APPC 3270 via LAN
	Microsoft SNA client over FMI
	Microsoft SNA client (using the LUA interface)
	Microsoft SNA client (using the APPC interface)
	Dependent LU Requester (DLUR)
	3174 Peer Communications
	VT-over-Telnet (TCP/IP)
COAX	SNA Distributed Function Terminal
	Non-SNA Distributed Function Terminal

Table 1. System/390 Emulator Connection Icons (continued)

Interface	Attachment

COM port
 	
	SNA-over-Async
	IBM Global Network® (not in Japan)
	Home3270
	IBM Global Network - SNA-over-Async
	Dependent LU Requester (DLUR) via
	    SNA-over-Async
	    Hayes AutoSync
	Hayes AutoSync
	APPC 3270 via:
	    SNA-over-Async
	    Hayes AutoSync
	VT over Async
	Telnet 3270
	VT over Telnet (TCP/IP)
	X.25 Hayes AutoSync
	X.25 DLUR via Hayes AutoSync
	X.25 APPC 3270 via Hayes AutoSync

5250 	3270 via AS/400 Dependent LU Requester (DLUR)
SDLC 	Synchronous Data Link Control 3270 via AS/400 (passthru) APPC 3270 via SDLC Dependent LU Requester (DLUR)
SNA/IP 	LU 0, 1, 2, 3 APPC 3270 LU 0,1,2,3 via DLUR
IBM ISA/MCA WAC 	Synchronous Data Link Control 3270 via AS/400 (passthru) APPC 3270 via SDLC Dependent LU Requester (DLUR) X.25 Qualified Logical Link Control X.25 3270 via AS/400 APPC 3270 via X.25 X.25 DLUR
API Client 	NetWare for SAA client Communications Server client Communications Server
IBM-EEDLC 	LU (0, 1, 2, 3) via DLUR APPC 3270
OEM 	LU (0, 1, 2, 3) 3270 via AS/400 (passthru) APPC 3270 Dependent LU Requester (DLUR)

AS/400 Emulator Connections

Table 2. AS/400 Emulator Connection Icons

Interface	Attachment
LAN	LAN via IEEE 802.2 Telnet5250 over TCP/IP Telnet5250 over IPX/SPX VT over Telnet
5250	Twinaxial Data Link Control (APPC) Twinaxial Data Link Control (Console)
COM port	SNA-over-Async Hayes AutoSync SNA-over-Async (Console) VT over Async VT over Telnet Telnet 5250 X.25 Hayes AutoSync
SDLC	Synchronous Data Link Control
SNA/IP	5250
IBM ISA/MCA WAC	Synchronous Data Link Control (WAC) X.25 Qualified Logical Link Control
IBM-EEDLC	5250
OEM	APPC 5250

ASCII Emulator Connections (SBCS only)

Table 3. ASCII Emulator Connection Icons

Interface	Attachment
LAN	VT over Telnet (TCP/IP)
COM port	VT over Async VT over Telnet (TCP/IP)

S/3X Emulator Connections

Table 4. S/3X Emulator Connection Icons

Interface	Attachment
5250	Twinaxial Data Link Control (Console)

Client/Server (Peer) Connections

Personal Communications provides APPN® end node support for workstations, allowing them to communicate more flexibly with other systems in the network.

When your workstation is defined as an APPN end node, an APPN network node server provides the following directory and routing services for your workstation:
- Intermediate session routing
- Directory services
- Topology and route selection services

Using Personal Communications, you can establish client/server connections to a variety of computers and to workstations running OS/2®, Windows 95, Windows 98, Windows NT, Windows Me, or Windows 2000. Another option is to connect the computers to a workstation running Communications Server. Available SNA client/server connection types are:
- LAN via IEEE 802.2
- Synchronous Data Link Control
- SNA-over-Async
- AnyNet SNA over TCP/IP
- Hayes AutoSync
- IBM Global Network – SNA over Async
- Twinaxial Data Link Control (APPC)
- X.25
- OEM Deep adapter
- WAC
- Enterprise Extender

APPN Networking

Advanced Peer-to-Peer Networking® (APPN) is the underlying networking protocol that routes APPC traffic through intermediate nodes in the network. For instance, when Program A uses APPC to talk to Program B, APPN finds the node where Program B is located and directs the APPC traffic through the network.

APPN includes several features that help reduce the amount of configuration required to set up and maintain a network. These features automate many tasks that are time consuming, complicated, and error prone. For example, if you're installing a new workstation that uses APPN, you don't have to set up configuration information for every workstation you want to communicate with. You simply provide the name of the computer and the address of the intermediate node that handles your traffic. APPN takes care of the rest of the information needed to route APPC traffic to and from your workstation.

If you connect to an APPN network, you simplify your own configuration and make it easier for other computers in the network to find you.

Refer to the information about SNA Client/Server concepts in the *3270 Emulator User's Reference* or *IBM Personal Communications Version 5.5 5250 Emulator User's Reference* for more information.

APPC

Advanced program-to-program communication (APPC), also known as LU 6.2, is software that enables high-speed communications between programs on different computers, from portables and workstations to midrange and host computers. APPC software is available for many different operating systems, either as part of the operating system or as a separate software package.

APPC is a communications protocol that enables programs on different computers to "talk to" each other. APPC provides the interface between the programs and the networking hardware and software and defines the rules that programs use to exchange information.

APPC serves as an interface between application programs and the network. When the communications application on your workstation passes information to the APPC software, APPC takes the information and sends it on to a network interface, such as a Token-Ring adapter card. The information travels across the network to another computer, where the APPC software receives the information from the network interface. APPC puts the information back into its original format and passes it to the corresponding communications application.

Refer to *3270 Emulator User's Reference* or *5250 Emulator User's Reference* for more information.

APPN Network

By participating in an APPN network, Personal Communications workstations can also take advantage of two additional functions:
- High-performance routing
- Dependent LU requester

High-Performance Routing (HPR):   Personal Communications supports high-performance routing (HPR) over token-ring and Ethernet connections, which increases data routing performance and reliability. HPR supports the rapid transport protocol to provide nondisruptive rerouting around network outages, efficient selective retransmission, and end-to-end data integrity and congestion control.

Dependent LU Requester (DLUR):   DLUR allows dependent LUs (LU 0, 1, 2, 3, and dependent LU 6.2) to benefit from an APPN network. It supports dynamic and multiple paths through the network and eliminates the need for dependent LUs (or their gateway) to be adjacent to the VTAM® host.

A DLUR is an APPN end node or network node that owns dependent LUs, but requests that a dependent LU server (DLUS) provide the system services control point (SSCP) for those dependent LUs. A DLUS controls conversion from a subarea environment to an APPN environment, allowing you to maintain central management of remote dependent LUs while benefiting from an APPN network.

Personal Communications uses the support in VTAM V4R2 for dependent LUs through APPN networks and combined subarea and APPN networks. The dependent LU server function (in VTAM) provides dependent secondarylogical unit (SLU) support by establishing an LU 6.2 session between a dependent LU requester node (DLUR), and a dependent LU server node (DLUS).

Refer to the information about SNA Client/Server concepts in the *3270 Emulator User's Reference* or *5250 Emulator User's Reference* for more information.

AnyNet

AnyNet allows any application to communicate over any networking protocol and to extend the reach of applications over multiple networks. Using AnyNet function, you can reduce the number of installed network protocols and reduce operational complexity without modifying your existing applications or hardware. Personal Communications includes AnyNet SNA over TCP/IP support, which allows SNA emulator and client/server applications to communicate over a TCP/IP network.

Refer to the information about AnyNet SNA over TCP/IP in the *3270 Emulator User's Reference* or *5250 Emulator User's Reference* for more basic information about AnyNet.

Note: This function is not available for Windows 2000.

Refer to the *Administrator's Guide and Reference* for examples of how to set up AnyNet connections.

Enterprise Extender (HPR over IP)

Enterprise Extender allows you to extend the reach of SNA applications and data to include IP networks and IP-attached clients with similar levels of reliability, scalability, and control as SNA users. Enterprise Extender integration uses standard IP technology and does not require new hardware or software in the IP backbone.

Enterprise Extender is a simple set of extensions to the existing HPR technology, and provides the following:
- Non-disruptive backup from desktop to host
- SNA transport over native IP network
- End-to-end failure protection
- End-to-end data prioritization
- Scalable and cost-effective connectivity

ActiveX/OLE 2.0 Support

Personal Communications Version 5.5 sessions can now be included as part of a compound document. A compound document is a document that appears to be a single unit, but which is in fact made up of information from more than one program. For example, a compound document could include data that allows Personal Communications to execute within the context of the spreadsheet program.

When included as part of another program, Personal Communications is known as an embedded or linked object and the program is known as a container. Personal Communications supports ActiveX/OLE 2.0–compliant containers such as Lotus Notes®, Lotus WordPro, and Microsoft Word. For most containers you can embed an object by using a menu sequence (for example, in Microsoft Word, use **Insert**, then **Object**), or by dragging and dropping a workstation profile into the document.

As an embedded object, Personal Communications can change its appearance to be part of the container program, providing the container program allows this change

to occur. Or, Personal Communications can be started so that it runs in its own separate window utilizing its own profile and screen displays.

There is a variety of ways that Personal Communications can be activated as an embedded object. For example, Personal Communications can be shown as an icon within another program, and be activated by double-clicking. Another way Personal Communications can be activated is through a script; Visual Basic or LotusScript are examples of scripting languages supported by Personal Communications, but any ActiveX/OLE automation scripting language can be used.

The use of scripts allows Personal Communications to be activated as a part of an automation request. For example, a script can be written to automatically start Personal Communications every time the container object is started, or a script can be used to automatically put data on host entry screens.

The Personal Communications session ends when the container is closed or when you close the Personal Communications window. If Personal Communications was actuated as a linked object, it must be closed separately.

Object-Oriented API

Personal Communications provides a new language-independent object-oriented API. There are seven objects that can be used in conjunction with Visual Basic, Lotus Script, or any ActiveX/OLE automation scripting language to produce compound documents where Personal Communications is an embedded object within another program.

If you are interested in writing an application that includes Personal Communications as an object within your ActiveX/OLE 2.0 compliant program, refer to the *IBM Personal Communications Host Access Class Library* (HACL) programming manual. This manual describes the objects that Personal Communications provides and describes what you need to do to access the Personal Communications data. Information is provided for programmers using Visual Basic scripts, Lotus scripts, and the C++ programming language. Samples of Visual Basic and Lotus scripts are provided on the Personal Communications CD-ROM.

Chapter 2. Planning to Install Personal Communications

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

The following sections describe and list support for monitors, adapters, and keyboards.

For detailed instructions on installing Personal Communications, refer to the *Personal Communications Version 5.5 CD-ROM Guide to Installation*.

Workstation Hardware

Personal Communications supports workstations with the following hardware:

Table 5. Workstation Hardware Support

System units	The recommended system unit has an Intel 80486 or faster microprocessor and access to a CD-ROM drive.
Display monitors	All VGA resolution or above display monitors supported by Windows.
Video adapters	All VGA resolution or above video adapters supported by Windows.
Keyboards	• Enhanced keyboard (101-key, 102-key, 104-key) (Only the 101-key for Japanese) • Space-saving keyboard • Microsoft Natural Keyboard • 5576-001/002/003/A01/B01/B05 (Japanese)
Printers	All printers supported by Windows when a PDT file is not used. For more details about printers supported in PDT mode, refer to the Personal Communications Version 5.5 user's reference for the specific host system.
Communication adapters	LAN, SDLC, coaxial, twinaxial, WAC, COM Port, OEM, and Multiprotocol communication adapters.
Modems	All asynchronous modems that use the Hayes AT® command set and are supported by Windows. Synchronous (SDLC) modems attached to a multiprotocol adapter (MPA), SDLC or WAC adapter.

Workstation Memory Requirements

For Personal Communications the amount of memory you need depends on several factors, including the operating system you are running on, the attachment type, number of sessions, and the use of programming interfaces such as Emulator High-Level Language Application Programming Interface (EHLLAPI) and Dynamic Data Exchange (DDE). Personal Communications for Windows 95 and Windows 98 will run on 16-MB workstations; a minimum of 32 MB of memory is recommended for Windows NT, Windows Me, and Windows 2000.

If you want to run Personal Communications and other applications
simultaneously, you might need to add more memory to your workstation.

Workstation Software

For SNA client attachment to a NetWare for SAA 2.0 (or later) gateway, or to a
Communications Server for Windows gateway, you need the API Client for
NetWare for SAA and IBM Communications Server for Windows NT (provided
with Personal Communications).

For attachment to the Microsoft SNA Server for Windows, you need the Microsoft
SNA Server Windows NT Client; for attachment to the Microsoft SNA Server for
Windows 95 and Windows 98, you need the Microsoft SNA Server Windows 95 or
Windows 98 Client.

Host Requirements

Refer to the *VT Emulator User's Reference*, *3270 Emulator User's Reference*, *5250
Emulator User's Reference*, and *Administrator's Guide and Reference* for
information about software and hardware requirements for host systems.

Application Data

Application Data is generally defined to be files that contain user preferences or
configuration information; an application may need some or all of these files to run
properly. Personal Communications uses multiple configuration files: *User Class*
files can be stored individually by user profile, while *System Class* files are stored
in a common location.

Table 6 lists the classifications of some of the most common Personal
Communications file extensions.

Table 6. Application Data File Types

User Class		System Class	
Extension	**File Type**	**Extension**	**File Type**
.ws	Workstation Profile	.acg	SNA Configuration
.bch	Multiple Sessions	.mlg	Default Message Log
.ini	Session Size and Location	.trc	Unformatted Trace
.pmp	Popup-Keypad Configuration	.tlg	Formatted Trace
.kmp	Keyboard Configuration		
.srl	File Transfer List		
.ndc	AS/400 Connection Configuration		
.upr	AS/400 User Profile		
.tto	AS/400 Data Transfer Request (Receive)		
.tfr	AS/400 Data Transfer Request (Send)		
.bar	Toolbar Setup		
.mac	Macro		

Table 6. Application Data File Types (continued)

User Class		System Class	
.mmp	Mouse Setup		
.xlt	Translation Table		
.xld	DBCS Translation Table		
.cert	Certificate		
.sth	Password Stash		
.adu	Automatic Dial Utility		
.kdb	Certificate Management Database		
.der	Binary DER		

Application Data Locations

The location for Application Data is specified during installation of Personal Communications. The following tables list the default Application Data locations, based on operating system.

If the [UserProfile]\Application Data location was selected at installation, the following profile paths are used:

Operating System	User Class Directory (Current User)	System Class Directory
Windows 95/98/Me	C:\Windows\Application Data\ IBM\Personal Communications	C:\Windows\All Users\ Application Data\IBM\Personal Communications
Windows 95/98/Me (user profiles enabled)	C:\Windows\Profiles\ %USERNAME%\Application Data\IBM\Personal Communications	C:\Windows\All Users\ Application Data\IBM\Personal Communications
Windows NT 4.0	C:\Winnt\Profiles\ %USERNAME%\Application Data\IBM\Personal Communications	C:\Winnt\Profiles\All Users\ Application Data\IBM\Personal Communications
Windows 2000	C:\Documents and Settings\ %USERNAME%\Application Data\IBM\Personal Communications	C:\Documents and Settings\All Users\Application Data\IBM\ Personal Communications

If the All Users\Application Data location was selected at installation, the following profile paths are used:

Operating System	User Class Directory (Current User)	System Class Directory
Windows 95/98/Me	C:\Windows\All Users\Application Data\IBM\Personal Communications	C:\Windows\All Users\ Application Data\IBM\Personal Communications
Windows 95/98/Me (user profiles enabled)	C:\Windows\All Users\Application Data\IBM\Personal Communications	C:\Windows\All Users\ Application Data\IBM\Personal Communications

Operating System	User Class Directory (Current User)	System Class Directory
Windows NT 4.0	C:\Winnt\Profiles\All Users\ Application Data\IBM\Personal Communications	C:\Winnt\Profiles\All Users\ Application Data\IBM\Personal Communications
Windows 2000	C:\Documents and Settings\All Users\Application Data\IBM\ Personal Communications	C:\Documents and Settings\All Users\Application Data\IBM\ Personal Communications

> **Note:** In Windows 95, 98 and Me, you have the option of enabling user profiles. A user profile is an account, maintained by the operating system, that keeps track of a particular user's files and system configuration. When a user logs on to the system, Windows is loaded with the logged-on user's files and system configuration settings in place.
>
> In Windows NT, user profiles are always enabled.

If the classic Private directory location was selected at installation, the following profile paths are used:

Operating System	User Class Directory (Current User)[1,2]	System Class Directory
Windows 95/98/Me	D:\Program Files\IBM\Personal Communications\Private	D:\Program Files\IBM\Personal Communications\Private
Windows 95/98/Me (user profiles enabled)	D:\Program Files\IBM\Personal Communications\Private	D:\Program Files\IBM\Personal Communications\Private
Windows NT 4.0	D:\Program Files\IBM\Personal Communications\Private	D:\Program Files\IBM\Personal Communications\Private
Windows 2000	D:\ Program Files\IBM\Personal Communications\Private	D:\ Program Files\IBM\Personal Communications\Private
[1]If the User Preference Manager (UPM) was set to a directory other than the default directory, Personal Communications will utilize that directory to store the user–class files. System–class files are always stored in the Private directory. [2]For the classic Private directory locations, D:\Program Files\IBM\ Personal Communications is the drive where Personal Communications is installed.		

Installation and Limitations of Personal Communications on ChineseStar and RichWin

This section describes how to install Personal Communications on ChineseStar (CStar) and RichWin, and the limitations of running Personal Communications on CStar and RichWin.

Installing Personal Communications on ChineseStar and RichWin

Before installing Personal Communications, you must make sure that CStar or RichWin is installed and running on the English version of Windows 95, Windows 98, or Windows NT. Once CStar or RichWin is installed and running, install

Personal Communications by following the steps described in the *Personal Communications CD-ROM Guide to Installation*.

Limitations of Personal Communications on ChineseStar and RichWin

Running Personal Communications on CStar and RichWin has the following limitations:

- Personal Communications supports only the GBK code page.
- RichWin does not support 3270 APL functions.
- CStar and RichWin support single Input Method Editor (IME) only.

  For example, if you open IME in multiple windows, IME behavior is synchronized in those windows. This is a platform limitation and it applies to Personal Communications as well.

- Although CStar and RichWin provide many true type fonts, Personal Communications supports only fixed pitch fonts.

Part 2. Using Personal Communications

Chapter 3. Configuring Sessions

Personal Communications saves emulator configuration information to a workstation profile (.WS) and SNA information to a configuration file (.ACG). Depending on your Personal Communications configuration, you might have a workstation profile only or both a workstation profile and a configuration file. The workstation profile can be used later by other Personal Communications sessions, or to restart this session. The SNA configuration file (.ACG) is used to initialize the SNA node of Personal Communications.

You can have an icon created for each workstation profile.Then you can select the session icon to establish communication with the host system using the saved workstation profile.

Note: If you configure more than one workstation profile, we strongly recommend that you use the same SNA configuration file for all of them. If you do not use a common SNA configuration file, make sure that there are no conflicts of link names or PU names (for 3270 sessions) between the two configuration files. In addition, the local system information should be the same on the Configure Local System windows. Failure to do this might result in unpredictable or inconsistent behavior.

Configuring for AS/400

To connect to an AS/400 system, specific configuration information in the workstation profile must correspond to the information specified at the AS/400 system. Refer to the AS/400 configuration examples in the *5250 User's Reference* for more information about creating display, line, and controller descriptions on the AS/400 system.

If you want to configure multiple links, refer to the *Administrator's Guide and Reference*.

Creating a Configuration

To create a new session:

1. From the Start menu, click **Programs → IBM Personal Communications → Start or Configure Sessions**.
2. From the Session Manager dialog, click **New Session**.
3. The Customize Communication window appears.
4. Select the type of host from the **Type of Host** drop-down list box.
5. Select the Interface you will use from the **Interface** drop-down list box.
6. Select the attachment type you want to use from the **Attachment** drop-down list box.
7. Click **Session Parameters** (optional).

   The Session Parameters – 3270, 5250, ASCII, or S/3X – Host window appears (depending on the host you selected in step 4). Click **OK**.
8. Click **Link Parameters**.

   If you selected an SNA attachment, a wizard will provide prompts for configuring an SNA attachment. Enter the appropriate information for each page and click **Next** to continue. Click **Finish** when you are done.

Save the SNA configuration, as described on page 28.

If you selected an attachment type other than SNA, make your selections for the parameters in the window displayed. Click **Help** or press **F1** to display parameter details. Click **OK** when you are finished. You will not need to save an SNA configuration.

> **Note:** If your host is configured to support secure sockets layer (SSL), then click the tab for the **Advanced Security Setup** property page. Refer to the *Administrator's Guide and Reference* for details on configuring for this capability.

9. If you want a Telnet 3270 server to associate a printer with the specific terminal:

   a. Click the **Host Definition** tab.

   b. Using the **Associated Printer Session** drop-down box, select or enter the .WS file for the printer that is to be associated with the specific terminal.

   c. Select the **Start Associated Printer Minimized** check box, if preferred.

   d. Select the **Automatically close Associated Printer Session with this session** check box, if preferred.

10. Click **OK** on the Customize Communication window. The session is displayed automatically.

    Save the workstation profile as described in "Saving a Workstation Profile" on page 29.

> **Note:** If you have a user profile that was created by a previous version of Personal Communications, Auto-Logon, when connecting to an AS/400 host over an SNA connection, may not work. In this case, you must recreate. Select **Configure User Profile** in the **Session Parameters – 5250 Host** window.

Saving Configuration Information

This section describes how to save configuration information. SNA configuration information is stored in an *.ACG file, and emulator configuration information is stored in a workstation profile (*.WS).

Saving an SNA Configuration

The Save As window appears automatically after you create or change a configuration with an SNA attachment. To save this information in a configuration file:

1. Type the file name and then click **Save**. The default file type is .ACG and the default directory is the application data directory specified during installation.

   When you save an SNA configuration file, you are also makingit the default configuration for the SNA node.

   You are returned to the Customize Communication window.

2. Click **OK** until you return to the session window, and then save your workstation profile, as described in the next section, Saving a Workstation Profile.

> **Note:** You must Power User or Administrator privileges in order to modify or create an SNA .ACG configuration.

Saving a Workstation Profile

If you save your emulator configuration information, the session will have the same characteristics the next time you start it. If you have an icon added to the Personal Communications folder, you can restart the session with the saved configuration information by clicking this icon from the Start menu. You are automatically given the opportunity to save your session information when you close a session. However, if you want to save the information at any time, do as follows:

1. Select **Save** from the File menu in the session window.

   The Save WorkStation Profile As window appears.

2. Type a file name (.WS) and then click **OK**. The name you enter will become the icon title unless you enter a description.Note that you can choose the directory where this file is saved, but the default directory is the application data directory specified during installation.

3. An icon associated with the profile will appear in the Session Manager.

Changing Configuration Information

You can change all of the configuration parameters in the workstation profile and the SNA configuration.

Changing an SNA Configuration

You can change the basic configuration parameters of an SNA configuration for your session in the following three ways:

- Using the Emulator Configuration
- Using the SNA Node Configuration
- Editing the configuration file with an ASCII editor

Note: To change advanced configuration options or to specify a different default configuration, you need to use the SNA Node Configuration program. In fact, we recommend that you use the SNA Node Configuration program whenever possible. If you manually edit the configuration files, it is highly recommended that you use the SNA Node Configuration Verification utility, prior to making use of the file for the first time.

Using the Emulator Configuration

To change an SNA configuration:

1. Select **Configure** from the Communication menu, then click **Session Parameters**.

2. Change the parameters on this window as necessary and click **OK**.

3. Click **Link Parameters**.

   Your default configuration file should be opened automatically. If you want to change a different configuration, click **Existing** and choose the configuration file you want to change.

   A wizard is displayed to prompt you through the configuration.

4. Make your changes and then click **Next**.

   Now you can proceed through the Wizard and make additional changes, if necessary.

5. Click **Finish** when you are done.

6. If you want to replace the existing configuration, click **Yes** to overwrite it. If you want to create a new configuration that is based on the existing one, type a

new file name; however, you must use SNA Node Configuration to make a new configuration the default configuration.

7. Click **OK** until you return to the session window.

Using the SNA Node Configuration Program

The SNA Node Configuration program is a graphical user interface (GUI) for managing the content of the .ACG files. This program allows you to define individual SNA resources or change the definition of these resources.

Using an ASCII Editor to Change Your Configuration Files

You can create and modify a configuration file without going through the SNA Node configuration interface. You can use the ASCII editor of your choice. A verification tool is available to ensure that you have not made errors when editing your file.

Refer to the *Personal Communications Configuration File Reference* manual for information on how to edit your configuration data using an ASCII editor and how to verify your editing changes.

Changing a Workstation Profile

To change a workstation profile:

1. If your session window is not active, select the icon corresponding to the workstation profile to be changed.

   The session window appears.

2. Select **Configure** from the Communication menu.

   The subsequent steps are the same as for creating a new configuration, beginning with step 4 on page 27.

3. After you have made your changes, the following message appears:

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

   If you click **OK**, communication ends, but then you are reconnected using the new configuration information.

   To save the changes in your workstation profile, click **Save** from the File menu in the session window and then click **Yes** to replace the existing file. Otherwise, click **No** to save this information in a new configuration file.

   > **Tip**
   >
   > Unless you have unchecked **Save on Exit** in the Exit Options dialog by selecting **Preferences ➤ Exit** from the **Edit** menu, changes are saved in the workstation profile automatically whenever you exit a session.

Configuring Your Workstation for Thai, Hindi, Arabic, or Hebrew

Refer to the bidirectional language support section of the *Administrator's Guide and Reference* for additional information on printing and other configuration options.

Configuring for Thai

To configure for the Thai language:

1. Select **Configure** from the **Communication** menu.

2. Click on **Session Parameters**.
3. For each configuration, select **Host Code-Page** to be one of the following:
   * **838 Thai**
   * **037 Thai/US**

To enable Thai keyboard input:

1. Select **Preferences ➔ Keyboard** from the **Edit** menu.
2. Select **Keyboard Layout: Thai**.

Note: Thai features are enabled when running on Windows 95 and Windows 98 Thai only. The Thai settings specified here are the default settings.

Configuring for Hindi

Note: Hindi configuration is only supported on Windows NT and 2000 systems.

To configure for the Hindi language:

1. Select **Configure** from the **Communication** menu.
2. Click **Session Parameters**.
3. For each configuration, select **Host Code-Page** to be one of the following:
   * **1137 Hindi**
   * **/US**

To enable Hindi keyboard input:

1. Select **Preferences ➔ Keyboard** from the **Edit** menu.
2. Select **Keyboard Layout: India—Hindi**.

Refer to the *Administrator's Guide and Reference* for more information about Hindi support.

Configuring for Arabic or Hebrew

To set up an Arabic workstation, do the following:

1. Select **Configure** from the **Communication** pull-down menu.
2. Click **Session Parameters** to display the Customize Communication panel.
3. Select **420 Arabic Speaking** as the host code page.

   Note: For 5250 print sessions, selecting the 420 host code page prompts Personal Communications to load the PCSPDA.DAT file. This file ensures that the host-specified fonts will map properly to the **Typing Arabic** print font. Refer to the Bidirectional Language Support section of the *Administrator's Guide and Reference* for more information about DAT file options for Arabic sessions.

4. Click **OK** in the Session Parameters panel.
5. Click **OK** in the Customize Communication panel.
6. Select **Keyboard** from the **Edit ➔ Preferences** pull-down menu. Select **Arabic Speaking** as the keyboard layout.
7. Select **Font** from the **Edit ➔ Preferences ➔ Appearance** pull-down menu. Choose **ARB3270** at the Automatic Sizing list box or at the Fixed size font selection. This ensures that the active font for display is the Arabic font.
8. Select **API** from the **Edit ➔ Preferences** pull-down menu.
9. Check the **DDE/EHLLAPI** box and select **864** as the PC code page.

10. Select **Page Setup** from the **File** pull-down menu. Choose **Typing Arabic** as the font in order to be able to print Arabic files.

> **Note:** For Personal Communications for Windows 95 you can also select **ARB3270** for printers with drivers that allow bit-map fonts. For example, printing through **PDT** requires the IBM Arabic 864 font to be available on the printer.

For Arabic, to set up for Numeric Swapping or Symmetric Swapping:
1. Select **Preferences → Appearance → Display Setup** from the **Edit** menu.
2. Select **Swapping** from the list box at the left; the settings for numerics and symmetric characters are displayed. Changes are immediately reflected on the active session.

> **Note:** Numeric Swapping is a 3270-only feature. This function will not be selectable if the session is an AS/400 session.

To set up a Hebrew workstation, do the following:
1. Select **Configure** from the **Communication** pull-down menu; then click **Session Parameters** to display the Customize Communication panel.
2. Select **424 Hebrew (Bulletin Code)** or **803 Hebrew (Old Code)** as the host code page.
3. Click **OK** in the Session Parameters panel.
4. Click **OK** in the Customize Communication panel.
5. Select **Keyboard** from the **Edit → Preferences** pull-down menu. Select **Hebrew (Bulletin Code)** or **Hebrew (Old Code)** as the Keyboard layout.
6. Select **Transfer** from the **Edit → Preferences** pull-down menu.
7. From the General tab, select **862**, **916**, or **1255** from the **PC Code-Page** list.
8. Select **API** from the **Edit → Preferences** pull-down menu.
9. Check the **DDE/EHLLAPI** box, then select **862**, **916**, or **1255** as the **PC Code-Page**.
10. Select **Font** from the **Edit → Preferences → Appearance** pull-down menu.
11. Choose **HEB3270** in the **Automatic Sizing** list box or choose the appropriate size of face name at the **Fixed size** font selection.
12. Select **Page Setup** from the **File** pull-down menu.
13. In the **Text** tab, choose **(Courier Heb)** printer font.

File Transfer
For Arabic, when transferring files between the PC and the host, the available PC code pages are 864 (IBM PC Arabic) and 1256 (Microsoft Windows Arabic).

> **Note:** For code page 1256 only, you must set the parameter for the orientation of the host file. Set the parameter in the following manner:
> 1. Select **Preferences → Transfer** from the Edit menu.
> 2. Select the **General** tab.
> 3. For right-to-left host file orientation, check the **HostFileOrientation** box. For left-to-right host file orientation, clear the HostFileOrientation box.
> 4. When uploading (sending) an Arabic file to the host, check the **Lam-Alef Compression** box. When downloading (receiving) an Arabic file from the host, check the **Lam-Alef Expansion** box.

5. **Symmetric Swapping** is used to reset swappable characters. For example, in a right-to-left string, the ″(″ and ″)″ will be reversed.

6. The **Round Trip** option is used to disable the reversal of numerals if they are preceded by Arabic characters.

7. For Numerals Shape, select the appropriate shape: **Nominal**, **National**, or **Contextual**.

For Hebrew, when transferring files between the PC and the host, the available PC code pages are 862 (IBM PC Hebrew), 916 (Hebrew ISO-conforming), and 1255 (Microsoft Windows Hebrew).

Data Transfer for Arabic

When transferring SQL Data between the PC and AS/400, the available PC code pages are 864 (IBM Arabic) and 1256 (Microsoft Windows Arabic). To transfer data, do as follows:

1. Select **Preferences → Transfer** from the Edit menu.

2. Select the tab for the **Translation Tables** tab.

3. Select **User Defined**.

4. Select **Host Codepage: 420 Arabic Speaking**.

5. Select **PC Codepage: 864 or 1256**.

   If code page 1256 is selected, then you must then set the parameter for the orientation of the host file, as described for file transfer.

OIA Indicators for Arabic

In the host session, the bottom line of the screen is called the Operator Information Area (OIA). This line is always displayed from left-to-right. In the Arabic environment, the following symbols are used:

* Language Indicator
  – Isolated EIN

    ع

    Current language, Arabic
  – E : Current language, English
* Screen Direction
  – S> : Left-to-right screen direction
  – <S : Right-to-left screen direction
* Typing Direction
  – => : Left-to-right direction
  – <= : Right-to-left direction
  – ■> : Left-to-right Push direction (3270 Only)
  – <■ : Right-to-Left Push direction (3270 Only)
* Auto Field Reverse function active (3270 Only)
  – <->
* Auto Field Reverse for numbers (3270 Only)
  – N
* Auto Push active indicator (3270 Only)
  – P
* Arabic Character Shape Mode

– The character Alef-Madda

آ

indicates CSD mode
– Isolated GHEIN

غ

indicates Base/Isolated Shaping Mode
– Initial GHEIN

غ

indicates Initial Shaping Mode (3270 Only)
– Middle GHEIN

غ

indicates Middle Shaping Mode (3270 Only)
– Final GHEIN

غ

indicates Final Shaping Mode (3270 Only)

OIA Indicators for Hebrew

When you are working in host mode, the bottom line of the screen becomes an Operator Information Area (OIA). This line is always displayed from left to right. For work in the Hebrew environment, the following symbols are used:

- Language Indicator
  - H : Current language is Hebrew
  - E : Current language is English
- Screen Direction
  - S> : Left-to-right screen direction
  - <S : Right-to-left screen direction
- Typing Direction
  - => : Left-to-right direction
  - <= : Right-to-left direction
  - #>: Left-to-right Push direction (3270 Only)
  - <#: Right-to-Left Push direction (3270 Only)
- Auto Field Reverse function active - bidirectional arrow
  - <-->
- Auto Field Reverse for numbers
  - N
- Autopush active indicator
  - P

Configuring VT Emulation for Arabic or Hebrew

To set up an Arabic or Hebrew workstation for VT emulation, do the following:

1. Select **Configure** from the Communication pull-down menu.

2. Select **ASCII** for the host type.
3. Click the **Session Parameters** button.
4. Select the **National** Host Code-Page type.
5. Select the Host Code-Page.
   - If configuring for Arabic, choose **Arabic ASMO 708** for 8–bit code page or Arabic **ASMO 449** for 7–bit code page.
   - If configuring for Hebrew, choose **Hebrew ISO** or **Hebrew NRCS**.
6. Click the **Advanced** button.
7. Click the **BiDi Options** button.
8. Set bidirectional options from the **Advanced BiDi ASCII Host** dialog.
   - If configuring for Arabic, do the following:
     – Select the **Numeral Shape**.
     – Select the **BiDi Mode** to be either on or off.
   - If configuring for Hebrew, do the following:
     – Select the **Display Text Type**.
     – Select the **Cursor Direction** (for Visual Hebrew sessions only).
9. Close the open dialogs by clicking **OK** in each panel.
10. Select the font by going to the **Edit** pull-down menu and selecting **Preferences → Appearance → Font**.
11. Select **Face Name**.
    - If configuring for Hebrew, select **HEB3270**.
    - If configuring for Arabic, select **AVT3270**.

File Transfer

Automatic code page conversion occurs during file transfer. However, this is only valid for 8–bit code pages.

For Arabic workstations, the conversion is from Arabic ASMO 708 to 1256 when sending. The code page conversion is reversed when receiving.

For Hebrew workstations, the conversion is from Hebrew ISO to 1255 when sending. The code page conversion is reversed when receiving.

Copy/Paste

Automatic code page conversion occurs during copy and paste operations. For Arabic, the conversion is from the current host code page to 1256, and vice-versa. For Hebrew, the conversion is from the current host code page to 1255, and vice-versa.

Print Screen

To print a screen in an Arabic or Hebrew session, do the following:

1. Click **Page Setup** from the **File** menu.
2. For an Arabic session, select the **Typing Arabic VT** font. For a Hebrew session, select the **Courier Heb** font.

Arabic OIA Indicators for VT

In the Arabic environment, the following OIA symbols are used:

- Language Indicator
  – AIN (Arabic character): Current language is Arabic
  – E : Current language is English
- Screen Direction

- S> : Left-to-right screen direction
- <S : Right-to-left screen direction
- Column Heading
  - CH : Column heading is on

Hebrew OIA Indicators for VT
In the Hebrew environment, the following OIA symbols are used:
- Language Indicator
  - H : Current language is Hebrew
  - E : Current language is English
- Screen Direction
  - S> : Left-to-right screen direction
  - <S : Right-to-left screen direction
- Text type mode
  - I : Logical/Implicit text mode
  - V : Visual text mode
- Cursor Direction
  - => : Left-to-right direction
  - <= : Right-to-left direction

Changing Advanced BiDi Display Options
To set advanced ASCII bidirectional options for Hebrew sessions, do the following:
1. Select the appropriate Hebrew National host code page. Click the **Advanced** button in the Session Parameters-ASCII Host panel.
2. Click the **BiDi Options...** button in the Customize Communications-Advanced ASCII Host panel.
3. Select the Display Text Type, either **Logical** or **Visual**.
   - For Logical Hebrew sessions, choose the Smart Ordering option, either **Enable** or **Disable**. For Smart Ordering enabled, choose the Show Text Attributes option, either **Yes** or **No**.
   - For Visual Hebrew sessions, select the Cursor Direction, either **LTR** or **RTL**.

To set advanced ASCII bidirectional options for Arabic sessions, do the following:
1. Select the appropriate Arabic National host code page. Click the **Advanced** button in the Session Parameters-ASCII Host panel.
2. Click the **BiDi Options...** button in the Customize Communications-Advanced ASCII Host panel.
3. Select the Numeral Shape, either **Contextual**, **Nominal**, or **National**.
4. Select the BiDi Mode, either **On** or **Off**.
5. Choose the Smart Ordering option, either **Enable** or **Disable**. For Smart Ordering enabled, choose the Show Text Attributes option, either **Yes** or **No**.

Chapter 4. Starting and Stopping Emulator Sessions

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

If you saved your emulator configuration information, as described in "Saving Configuration Information" on page 28, it is stored in a workstation profile (*.WS), which should be displayed in the Session Manager.

Note: If you are a first-time user of Personal Communications, or there are no session icons in the Session Manager, refer to "Chapter 3. Configuring Sessions" on page 27 to create a configuration.

Session Manager

Personal Communications Version 5.5 uses the Session Manager dialog to provide easy access to workstation profiles and batch files. You can use the Session Manager to start a single or multiple sessions, and create a new session or batch file.

Note: The Session Manager dialog only displays workstation profiles and batch files that are located in the Application Data location that was specified during Personal Communications Version 5.5 installation. See "Application Data" on page 20 for more information about Application Data.

You can drag an icon from the Session Manager to the Windows Start menu or to the desktop. Select the session(s) and drag with the right mouse button. A contextual menu appears when the icons are dropped, which gives you the options for moving, copying, or creating a shortcut. If you drag an icon with the left mouse button held down, the icon is moved to that location. If you drag an icon while pressing the CTRL key and with the left mouse button held down, the icon is copied to that location. If you drag an icon while pressing the ALT key and with the left mouse button held down, a shortcut is created for the icon. You should always use the shortcut option—moving and copying will affect the location (and therefore the function) of the profile.

Session Manager Options

Various Session Manager options are available from the pull-down menus and the right-click menu. For example, you can customize the look of the displayed Session Manager information and import sessions or batch files into the Personal Communications Application Data directory.

Session Manager Menus
The following options are available from the Session Manager menus.

File

> **Change Directory**
>> You can run files that are stored in a directory other than the Personal Communications Application Data directory.

> **Import**
>> This option allows you to copy sessions or batch files to the Personal Communications Application Data directory. Afterwards, the imported files can be displayed in the Session Manager dialog.

View

> **Sessions**
>> This option shows all valid workstation profiles that have the standard .WS extension and are located in the Application Data directory.
>
> **Multiple Sessions**
>> This option shows all valid batch files that are have the standard .BCH extension and are located in the Application Data directory.
>
> **Large Icons**
>> This option shows large session icons in the Session Manager.
>
> **Small Icons**
>> This option shows small session icons in the Session Manager.
>
> **Details**
>> The following session detail information is displayed in the panel columns. The columns can be resized as needed.
>> - File Name
>> - File extension
>> - Type (session or batch file)
>> - Description (shows the information specified in the "Description=" field in the .WS file)
>> - The following session information is not shown for batch files.
>>   - Host Name (if SNA, this column shows the .ACG file name).
>>   - Host Type (shows the host type specified in the Customize Communication dialog during session configuration)
>>   - Interface (shows the interface specified in the Customize Communication dialog during session configuration)
>>   - Attachment (shows the attachment specified in the Customize Communication dialog during session configuration)
>>   - Session Type (printer or display)
>> - Modified (indicates the last modification date/time of the file)
>
> **All File Extensions**
>> This option shows all valid multiple sessions and workstation profiles that are located in the Application Data directory, regardless of extension.
>
> **Hidden**
>> This option shows files that have been previously hidden using the right-click menu option. If this option is selected, hidden sessions are shown with black-and-white icons; otherwise, they will not be displayed.
>
> **Refresh**
>> If you manually copy a session or batch file into the Application Data directory, you must refresh the Session Manager view in order to see the new files.

Right-Click Menu (Contextual)

The following options are available by right-clicking on one or more session.

Start Starts the selected sessions

Delete Deletes the selected sessions. You must have permission in the System Policy to delete any sessions from the Session Manager.

Hide/Unhide
You can hide or unhide sessions using this option. To view hidden sessions, you must select **View → Hidden**. Hidden sessions have black-and-white icons when displayed.

Modify
This option is only available when selecting one or more batch files—the batch files are brought up in edit mode. You must have permission in the System Policy to modify batch files from the Session Manager.

Starting Sessions

You can use the following methods to start sessions:
- Select an already-configured session icon from the Session Manager.
- Start from an existing session window.
- Specify a workstation profile name in the Run window.
- Enter the PCOMSTRT command in the Run window or MS-DOS Prompt.
- Select an icon that has been previously dragged from the Session Manager.
- Start multiple sessions with a batch file.

Note: Connection status messages are displayed on a status bar at the bottom of your session window during connection to the host.

Starting from the Start or Configure Sessions Icon
Select **Programs → IBM Personal Communications → Start or Configure Sessions** from the Start menu. Select the desired session from the Session Manager dialog and click the **Start** button.

Starting from an Existing Session Window
Use the following methods to start from an existing 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
1. Select **Open** from the File menu.
2. Specify the desired workstation profile and then select **OK**.

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

Starting Using a Command
To start a session:
1. Select **Run** or **Programs → MS-DOS Prompt** from the Start menu.
2. Enter the command:

```
PCOMSTRT /P=x:\AppData\my.WS
```

where *my.WS* is the workstation profile stored in the Application Data directory specified during installation. This is the only required parameter. For a complete description of parameters, refer to the *Administrator's Guide and Reference*.

Another method for invoking Personal Communications using a command is with the command for the PCSWS.EXE module; see step "PCSWS.EXE Options" on page 42.

Starting Multiple Sessions

If you installed the Multiple Sessions utility, 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.

Note: You must have permission in the System Policy in order to create a new batch file.

If you created an icon for your batch file, double-click the icon in the Session Manager or select the icon and click the **Start** button.

Creating a Batch File

To create a batch file:

1. From the Session Manager dialog, click **New Multiple Sessions**. You can also start a new batch file from the Windows **Start** menu, using the **Multiple Sessions** icon in the **Utilities** subfolder of the **IBM Personal Communications** folder.

   The Create/Modify Batch File panel appears.

2. There are four methods for including profiles or programs in a batch file:
   - Double-click the file names in the **File Name** list box.
   - Drag and drop the file names (using 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 batch files entries area.
   - You can also use the **Capture View** button to capture multiple session windows into a view.

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 is 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.

There is one exception—if you are using the Japanese version of Personal Communications, you must delete these instructions. One way to do this is to select **File → New** from the **Create/Modify Batch File** dialog before adding any files.

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

PCSWS.EXE Options

- To specify which view should be used during a session, add the command **/V=myview**, where myview is the name of the previously saved view:

  `C:\Pcomm\PCSWS.EXE C:\AppData\LAN1.WS` **/V=myview**

  If the specified view does not exist, the command is ignored. See "Managing Emulator Sessions" on page 70 for information on how to save a view.

- 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:\Pcomm\PCSWS.EXE C:\AppData\TCPIP1.WS` **/Q**

  where `C:\Pcomm\` is the directory where you have Personal Communications installed, and `C:\AppData\` is the Application Data directory.

- To start a session as an icon, not as a window, add the parameter **/I** to the command in the batch file:

  `C:\Pcomm\PCSWS.EXE C:\AppData\TWINAX.WS` **/I**

  where `C:\Pcomm\` is the directory where you have Personal Communications installed, and `C:\AppData\` is the Application Data directory.

- To start a *hidden* session, not as an icon or a window, add the parameter **/H** to the commandin the batch file:

  `C:\Pcomm\PCSWS.EXE C:\AppData\TWINAX.WS` **/H**

  where `C:\Pcomm\` is the directory where you have Personal Communications installed, and `C:\AppData\` is the Application Data directory.

- To start a session with a specific short session ID (session letter),insert the parameter **/S=m** after PCSWS.EXE in the batch file:

  `C:\Pcomm\PCSWS.EXE` **/S=m** `C:\AppData\LAN1.WS`

  where `C:\Pcomm\` is the directory where you have Personal Communications installed, *m* is the short session ID, and `C:\AppData\` is the Application Data directory.

  Notes:

  a. 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.

  b. Several parameters can be specified for controlling the particular characteristics for starting sessions; the switch values are designated by a single character.

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.

The following example is a batch file that runs six workstation profiles located in the Application Data directory, and then runs **MYAPP.EXE**.

```
C:\dir\PCSWS.EXE C:\dir\COAX1.WS /Q
C:\dir\PCSWS.EXE C:\AppData\COAX2.WS /I
C:\dir\PCSWS.EXE C:\AppData\SLAN1.WS
C:\dir\PCSWS.EXE C:\AppData\SLAN2.WS
C:\dir\PCSWS.EXE C:\AppData\AS4Y1.WS
C:\dir\PCSWS.EXE C:\AppData\VT220.WS
C:\APPL\MYAPP.EXE
```

where *C:\AppData* is the Application Data directory specified during installation and *dir* is the installation directory.

Saving Multiple Session Views

You can use the Create/Modify Batch File panel to capture up to multiple session views. Simply size and position up to 26 session windows and click the **Capture View** button. Name the view and click **Save View** in the View Setup panel. You can save up to eight views. You may also delete previously saved views from the drop-down list in the View Setup panel.

If a view is already being used when you click Capture View, that view is automatically used and you are not prompted to save a new view.

Starting a Batch File

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

- If you created an icon for your batch file, double-click the icon in the Session Manager or select the icon and click the **Start** button.
- Run the batch file from the Run command line:

  ```
  [drive]:\[path]\PCSBAT.EXE  [drive]:\[path]\xxxx.BCH /R
  ```

  Note: To run a batch file, specify the /R option.
- Start the **Multiple Sessions** Utility.
  1. Select **Open** from the **File** menu in the Create/Modify Batch File window.
  2. Select the desired batch file and then select **OK**.

     The contents of the batch file appears in the edit area.
  3. Select **Run** from the Run menu.

Editing an Existing Batch File

To edit an existing batch file, do one of the following:

1. Right-click on the icon in the Session Manager and choose **Modify**.

   You can also use the following procedure:
   a. Start the **Multiple Sessions** Utility from the Start menu. The Create/Modify Batch File window appears.
   b. Select **Open** from the File menu. The Open Batch File window appears.
   c. 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

2. Edit the batch file. Refer to step 2 on page 40 for more details.

   Refer to the online help for details about the menu bar Edit functions. Select **Index** from the **Help** menu and then click **Menu-Bar Commands** on the Batch-Program Window.
3. 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 43.
4. Exit the Create/Modify window.

Starting Multiple Sessions without a Batch File

To start multiple sessions without a batch file:
1. Start the Session Manager.
2. Select the icons for the sessions, then click the **Start** button. You can select icons using a drag selection box or holding down the Ctrl key while selecting icons with the mouse.
3. 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 click **OK**.

Automatically Starting Sessions

To start one or more sessions automatically, do as follows:
1. From the **Start** menu, select **Settings ➔ Taskbar**
2. Click the **Start Menu Programs** tab and then click **Add**.
3. Click **Browse** and then open the Application Data directory specified during installation.
4. Change the file type to `All Files`.
5. Double-click the session icon or the batch icon.
6. Click **Next** and then double-click the Startup folder.
7. Accept the icon name or type a new one.
8. Click **Finish** and then **OK** when you are done.

You can also drag an icon from the Session Manager to the Startup folder as a shortcut.

Stopping Sessions

To stop a session, click the **X** in the upper-right corner or 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 emulator sessions end, and the associated session windows are closed.

Sessions can also be stopped using a command:
1. Select **Run** or **Programs ➔ MS-DOS Prompt** from the Start menu.
2. Enter one of the following commands:

```
PCOMSTOP /S=x
PCOMSTOP /ALL
```

where *x* is the session letter of the particular session to be stopped; use `ALL` to stop all active sessions. There are other parameters; for a complete description, refer to the Personal Communications Version 5.5 user's reference manual for the specific host system.

Note: Stopping a TN3270E session will automatically close an associated printer session, if that option was selected when configuring the session. See "Telnet 3270E Printer Association" on page 47 for information on how to automatically close an associated printer session.

Chapter 5. Using Emulator Sessions

This chapter describes how to use the printing, editing, and data transfer functions in an emulator session. It also describes the choices on the Appearance, Actions, and Window menus in the emulator session windows.

Telnet 3270E Printer Association

The Telnet 3270E standard lets you specify an association between a display and a printer session. This is unique to telnet. and is not available in the SNA environment. When you configure a display session, Personal Communications lets you specify an associated printer session. This function requires that the host be configured, and is only implemented on CS/NT and CS/390 TN3270E servers.

The association starts at the telnet server. In the server's configuration, there is a one-to-one correspondence when defining associated printers. When LU names and relations are already defined by the server, the server will assign the printer LU for the client. Each printer LU is configured as associated with a particular display LU.

Advantages of this association are as follows:

- If sessions are associated, the person who configures the client workstation does not have to know any detail about the printer session because the associated pairs are defined at the telnet server.
- When you start the display session, the associated printer session is started automatically. If the printer session is configured to direct output to a printer that is near you, and if you ensure that your host applications print to that session, it is obviously convenient.

When configuring a session, if you want a TN3270E-capable server to associate a printer with the specific terminal:

1. Click the **Host Definition** tab.
2. Using the **Associated Printer Session** drop-down box, select or enter the .WS file for the printer that is to be associated with the specific terminal.
3. Select the **Start Associated Printer Minimized** check box, if preferred.
4. Select the **Automatically close Associated Printer Session with this session** check box, if preferred.

Stopping a TN3270E session will automatically close an associated printer session, if that option was selected when configuring the session.

Power Management

Personal Communications complies with Windows 2000 Power Management requirements for handling sleep events (stand by and hibernate). This support minimizes session interruptions due to network disconnections caused by sleep on Windows 2000 and subsequent versions.

Connected State
> When Personal Communications is in the connected state and Windows 2000 indicates that the user is available for interaction, Personal Communications prompts the user to grant permission to sleep.

Non-Connected State

When Personal Communications is not in the connected state, Windows 2000 may automatically sleep, without prompting the user for permission.

Critical Sleep

When Windows 2000 resumes after an emergency suspension, Personal Communications may display and log a warning message.

Refer to the *Administrator's Guide and Reference* for more information about Power Management.

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.

- With printer sessions, you can print files directly from a host system to a workstation printer. Refer to the online help for more information.

  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 Windows printer drivers. Refer to the online help for more information.

To print, the following methods apply:

- You can use Windows printer drivers that you configure through printer setup in the file menu of the session window.
- You can use printer definition tables (PDTs), which give greater control over the print data stream.
- For 5250 only: You can use Host Print Transform, where the host formats and builds the printer commands.

For more information about printing, refer to the *VT Emulator User's Reference*, the *3270 Emulator User's Reference*, the *5250 Emulator User's Reference*, and the *Administrator's Guide and Reference*.

Using the Windows Printer Driver

To set up your printer to use a Windows printer driver:

1. Select **Printer Setup** from the File menu of the session window.

   The Printer Setup window lists the supported printers.

2. Select the printer driver to be used from the **Printer** list box. **DEFAULT** will cause the use of the Windows default printer.

   Notes:

   a. The **DEFAULT** selection is shown when the .WS file specifies `printer=DEFAULT` in the [printers] stanza.

   b. When this selection is made, no message appears before the job is printed.

   c. When a printer has been selected for a session, the name of that printer is displayed in the status bar of the session window.

3. If desired, click on the check box to **Show this dialog before every print**.

4. Confirm that the **Use PDT file** check box is not selected and then select **OK**.

Personal Communications will now use the printer driver you selected, and the Printer Setup window is closed.

Using Printer Definition Table (PDT) Files

Printer Definition Table files define the transfer of characters and control codes to a printer, and the printer output format. If a PDT file is used, the Windows printer driver is not used, and Personal Communications generates print output based on printer control information defined in the PDT file.

Refer to the *Administrator's Guide and Reference* for more information about PDT files.

To use PDT files:
1. Select **Printer Setup** from the **File** menu of the session window.
   The Printer Setup window appears.
2. Select the port to be used from the **Printer** list box.
   Selected PDT files are available for the port selected here.
3. Select **Setup** and then specify the paper size of the selected printer driver.
4. Select the **Use PDT file** check box and then select **Select PDT**.
   The Select PDT file window appears.
5. To use an existing PDT file, select a PDT file to be used and then select **OK**.

Using Host Print Transform (5250 only)

When configuring a 5250 printer session, the HPT mode may be selected. To use Host Print Transform (HPT):
1. From the Session Parameters panel, click **Advanced**.
2. Select **HPT Yes**. You can then enter the following parameters:
   - Printer Module
   - Drawer 1, Drawer 2, and Envelope form names
   - Code Page 899, **Yes** or **No**
   - Customizing Object and Library (optional)

Image Print Transform
Personal Communications Version 5.5 allows use of Image Print Transform in 5250 print sessions, when using Host Print Transform. Refer to the most recent IBM AS/400 printing reference for more information on this feature.

Page Setup

Personal Communications allows you to set Page Setup parameters, such as the maximum number of lines per page, the maximum number of columns, and fonts. For detailed information and instructions on Page Setup, refer to the *VT Emulator User's Reference*, the *3270 Emulator User's Reference*, the *5250 Emulator User's Reference*, and the *Administrator's Guide and Reference*.

Scalable (Truetype) APL Font Support on Printers

Because special APL characters are not provided for printers, the APL fonts provided for displays are used when APL characters are printed. In some cases, APL characters are printed rather small. To print larger APL characters, you should install a scalable (Truetype) APL font as follows.
1. Open the Control Panel Folder.

- Click **Start** on the task bar.
- Move the pointer to Settings and click **Control Panel**.

2. Open the Fonts folder. (Double-click the **Fonts** icon.)
3. On the File menu, click **Install New Font**.
4. Click the drive and folder where Personal Communications is installed.
5. Double-click **AICAPL**.

ZipPrint (3270 Only)

Use ZipPrint to print PROFS or OfficeVision notes, calendars,OV documents, CMS files, XEDIT workspaces, and 3270 session screens.

Preparing to Use ZipPrint

Before you can use ZipPrint, DDE/EHLLAPI must be enabled for the sessions. To do this, select **API Settings** from the File menu and refer to the online help for detailed instructions. DDE/EHLLAPI is enabled by default.

Note: By default, PROFS-oriented functions of ZipPrint are U.S. English PROFS. You can customize ZipPrint for other languages. Start ZipPrint before you start any display sessions.

Starting ZipPrint

Start ZipPrint before you start any display sessions. The ZipPrint menu is added to the menu bar of the specified session window; then you can use it from the menu bar the same as with the other functions.

Start ZipPrint by selecting the **ZipPrint** icon in the Personal Communications program folder. This starts ZipPrint for Session A only.

You can also start ZipPrint by placing it as the first command in a Personal Communications batch file.

For more information about ZipPrint, including information about using ZipPrint for additional emulator sessions, search for ZipPrint in Help.

Using ZipPrint

Keep the following consideration in mind when using ZipPrint.

ZipPrint uses the Personal Communications File Transfer function to print VM/CMS notes and files. On slower communication lines such as SDLC, Async (IIN), or Home3270 attachment, or when using a large packet or block size, you might experience a file transfer timeout. If this happens, you should increase the *timeout delay* as follows:
1. Select **Preferences → Transfer** from the **Edit** menu of the session window.
2. Increase the timeout value to 150 seconds or longer.

When using ODPS (Japanese PROFS or other DBCS PROFS), ZipPrint uses the Hankaku (SBCS) font. So when using a ZENKAKU font, such as KANJI or HIRAGANA, the font setting should be changed as follows:
1. Click **Configure ZipPrint** from the ZipPrint menu in your session window.
2. Click **Setup font**.
3. Select a ZENKAKU font such as MINCHO and GOTHIC and then click **OK**.

IBM 5586-H02 Printer (Japanese Only)

Use IBM5585.PDT for PDT mode printing with the IBM 5586-H02 printer.

Editing

You can edit the contents of your session window using the Windows clipboard and the **Edit** menu.

Note: When using copy/cut functions, Personal Communications takes the entire contents from the session window and places it on the clipboard. To copy or cut only marked sections from the session window, you need to update the Cut/Copy options. To update the Cut/Copy options, do the following:

1. Select **Edit → Preferences → Edit**.
2. From the Edit Options window, select the **Cut/Copy** tab.
3. From the Cut/Copy page, select the **Only if a trim-rectangle is marked** check box.
4. Close the Edit Options window.

Undo Cancels the most recent Edit operation, except for Copy Link, and restores the contents of the session window and the clipboard accordingly.

Cut Copies the marked area into the clipboard and removes it from the display session window.

Copy Copies (or duplicates) the marked area into the clipboard without removing it from the display session window.

Copy Append

Copies the marked area into the clipboard without removing it from the display session window. If there is already data in the clipboard, Copy Append adds the new data to it.

Paste Overlays the current contents of the clipboard into the session window, starting at the current cursor position.

Paste Next

If not all data was pasted, Paste Next is enabled and the remaining clipboard data can be pasted.

Clear Removes the marked area of the session window. The clipboard contents are not altered.

Copy Link

Supports the DDE Copy Link function. To start a link between Personal Communications and another application program, mark an area of the session window, select **Copy Link**, and then select **Paste Link** in the other application program.

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

Unmark

Removes the clipping (or marking) rectangle. The session window and the clipboard contents are not altered.

Select All

Marks the entire session window.

Edit Options

Paste Options

You can control how text is pasted before and after protected fields, and how tabulated text appears after it is pasted. The following Paste functions are available.

Field Wrap
> Check this box if you want pasted data that falls onto a protected field to move to the next unprotected field. If you do not check this box, any data that falls onto an unprotected field is lost.

Line Wrap
> Check this box to allow pasting of copied text across lines.

Don't Split Words
> Check this box to avoid words being split across fields and lines. The text being pasted into fields is split on word boundaries, which breaks the text and starts the new word in the next field. If one word is being pasted into a field, but the field is not long enough to hold the word, then as much of the word as possible is put into the field, and the rest of the word is carried on to the next field.
>
> **Note:** If the Field Wrap or Line Wrap option is not enabled, the word break option is not available.

Paste to marked area
> Check this box to restrict pasting to a marked area, if it exists. If the marked area doesn't exist, pasting will take place at the current location.

Stop pasting when protected line encountered
> Check this box to have the pasted text stop when it comes to a protected line on the emulator screen. If you do not check this box, the paste continues.

Tab Character Processing

> **Advance to next tab stop**
> > You can choose to align tabulated text at specified tab stops. For example, if you choose Advance to next tab stop 4 column(s), your tabulated text is advanced to the column position that is the next multiple of 4.

> **Replace with n space(s)**
> > You can choose to replace tab stops with a certain number of spaces. For example, if you choose replace with 3 spaces, each tab stop in your original text becomes 3 spaces.
> >
> > The default setting is to replace each tab character with one space.

> **Paste data to fields**
> > You can choose to have tabulated text placed in subsequent unprotected fields. With this option, when a tab character is encountered, the following text data will be pasted into the next unprotected field of the emulator session.
> >
> > **Note:** This option is available only for 5250 sessions.

Cut/Copy Options

You can control the size of the copy area and how +/- signs behave with signed numeric fields (5250 only).

Only if a trim rectangle is marked
Select this box if you want to copy only the trim rectangle that has been marked on the session screen. The default is to copy the entire screen if no rectangle is marked.

Force Leading +/-
On a signed numeric field, the Force Leading +/- option will force the +/- sign to be at the beginning of the field rather than at the end.

Note: This option is available only for 5250 sessions.

Trim Options
You can control the behavior of the trim rectangle.

Trim Rectangle sizing handles
Check this box to add handles to the trim rectangle, allowing you to modify the size.

Trim Rectangle remains after edit function
This option keeps the trim rectangle active after completing the trim.

Editing by Linking to Windows Application Programs

Linking to 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/EHLLAPI is currently set to usable status:

1. Select **API Settings** from the File menu.
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
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 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 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** or **PasteSpecial** 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.

See the online help for more information about the CopyLink and PasteLink functions.

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 a 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.

Table 7. Table Data in Marked Area

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

Table 8. Data Copied to Spreadsheet

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

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 symbols, 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.

Restrictions with Home3270 Attachment

When you use the Home3270 attachment, the following edit functions are restricted:

Undo function

> You cannot perform the Undo function after using the Cut, Paste, PasteNext, or Clear functions because these functions modify display areas in the protocol converter.

Cut and Clear functions

> When an area to be cut or cleared contains a field attribute character or protected field, or each line in that area ends at the end of an unprotected field, the following things might occur:
>
> - Characters in an unprotected field outside the area to be cut or cleared might also be cleared.
> - An alarm might sound.
> - The cursor might not appear at the initial position.
>
> When you perform the Cut or Clear function, specify only the minimum area required (for example, some words or one field in one line), and then confirm that the frame exists in an unprotected field.

Paste and PasteNext functions

When the area to be pasted contains a field attribute character or protected field, or the end of the paste area on each line is at the end of an unprotected field, the following things might occur:

- The character to be pasted might not be written to the expected position.
- An alarm might sound.
- The cursor might not appear at the initial position.

When you use the paste function, paste the shortest character string possible (for example, a character string, but excluding CR/LF). Confirm that the area to be pasted is in an unprotected field.

DBCS IME Auto-Start Switch (DBCS only)

The session default is IME auto-start, which means when the cursor moves to DBCS field, the system selected IME is invoked automatically. In PCSWIN.INI, one switch flag is added into [DBCS] section to disable this function.

```
[DBCS]          IME_AUTO_START=N
```

The default is Yes. When N is specified in INI file, the IME would not be invoked automatically. User needs to invoke IME by pressing system keys.

DOS GAIJI Files (Japanese Only)

The GAIJI-editor J can only process GAIJI files that were created with the Windows 3.1 GAIJI editor. It cannot process DOS GAIJI files. The GAIJI-HENKAN-HOJO tool (GAIJICNV.EXE) can be used to convert DOS GAIJI files as follows:

1. Start GAIJICNV.EXE, which is located in the Personal Communications installation directory.

   A dialog box to specify source file and target file appears.
2. Specify the source path/file `C:\$SYS1Z24.FNT` and the target path/file `C:\USERFONT.FON`.
3. Start a conversion by clicking the **Conversion** button.
4. Run the Windows NT, Windows 95, or Windows 98 Gaiji-editor and capture the file that is created by step 3, which is `C:\USERFONT.FON`.

For each file, you only need to convert either the 24x24 font or the 16x16 font with GAIJICNV.EXE, not both.

Using the User Font Defined on AS/400 (Japanese Only)

You can capture the user-defined font (GAIJI) defined on AS/400 into Windows by using IBM Personal Communications Tools/400 (PCT/400), IBM Personal Communications, and the Gaiji editor of Windows.

The capturing is done as follows:

1. PCT/400

   - Copying user font (CPYUSRFNT) command

     This command is executed on AS/400. It copies the user-defined font image from DBCS font table to a file. Please refer to the PCT/400 documentation for details of the command.
2. Personal Communications

   - File transfer facility

This facility transfers the file member that is copied by the copying user font (CPYUSRFNT) command.

   – GAIJI-HENKAN-HOJO tool (GAIJICNV.EXE)

     This program is executed on Windows. It converts the file copied by the copying user font (CPYUSRFNT) command to a Windows 3.1 format GAIJI file so that it can be captured by the Gaiji editor of Windows.

3. Windows 95, Windows 98, Windows NT, Windows Me, and Windows 2000

   • GAIJI editor

   By using the facility to capture the Windows 3.1 format GAIJI file, the file converted by the GAIJI-HENKAN-HOJO tool (GAIJICNV.EXE) program is captured.

Example

1. Copy the user-defined font images from the DBCS font table to a file by using the copying user font (CPYUSRFNT) command.

```
a. ADDLIBLE QPCT          (Add QPCT library to the library list)
b. CPYUSRFNT              (Copying fonts, using default parameter)
```

   The physical file USRFNT is created in library QTEMP and user-defined fonts are copied to member USRFNT from the DBCS font table.

2. Download QTEMP/USRFNT(USRFNT) to the PC as file USRFNT.FNT by using the file transfer facility of Personal Communications.

3. Convert USRFNT.FNT by using the GAIJI-HENKAN-HOJO tool (GAIJICNV.EXE).

   • `C:\PROGRAM FILES\PERSONAL COMMUNICATIONS\GAIJICNV.EXE`

   (This command runs GAIJICNV.EXE.):

   • As the source file, specify the USRFNT.FNT file that you downloaded in step 2. Enter it as `c:\usrfnt.fnt`

   • As the target path/file, specify `c:\userfont.fon`)

   • Start the conversion by clicking the **Conversion** button.

4. Run the Windows GAIJI editor to capture the file that is created.

What Is Different from Windows 3.1

1. The GAIJI-HENKAN-HOJO tool (GAIJICNV.EXE) program is used to convert the USRFNT.FNT. Font Setup Utility (SETUFNTV.EXE), which is provided by PCT/400, is not used. Therefore, Font Setup Utility (SETFNTV.EXE) does not need to be downloaded from AS/400.

2. To capture the font into Windows, the GAIJI editor of Windows is used.

Transferring Files

Personal Communications 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.

> **Note:**
> PCT400 was withdrawn from marketing 3/98.

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

Send files to the host system

Send files using the **Send File to Host** from the **Actions** menu; or by clicking the **Send** button on the tool bar; or, when using 3270 sessions, the SEND command from the DOS prompt.

You can also send files by using an EHLLAPI or DDE application or a macro that invokes file transfer.

Receive files from the host system

Receive files using the **Receive File from Host** from the **Actions** menu; or by clicking the **Receive** button on the tool bar; or, when using 3270 sessions, the RECEIVE command from the DOS prompt.

You can also receive files by using an EHLLAPI or DDE application or a macro that invokes file transfer.

Data Transfer

For 5250 sessions, click **Preferences ▸ Transfer** from the **Edit** menu; then select **Data Transfer** on the property page with the **General** tab. This causes the invoking of data transfer functionality when one of the above actions is taken. If **Data Transfer** is not selected, normal file transfer is invoked.

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.

Note: It is not possible to define a file transfer template with the long file name naming convention.

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.

Select, create, and customize DBCS translation tables

Select DBCS translation tables to define which DBCS translation table is used during file transfer. (Japanese and Korean only.)

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 **Preferences ▸ Transfer** from the **Edit** menu.

Note: When you transfer a file on a Telnet5250 session, you cannot transfer a file that includes FFEF. The current version of the AS/400 Telnet program misinterprets FFEF in the file as an end-of-record marker.

ASCII Host Data Transfer

When you are transferring files between two computers, specific protocols must be followed. Files can be transferred only when your PC uses the same protocol as the host. Personal Communications supports the XMODEM and YMODEM public domain protocols.

For XMODEM, Personal Communications uses the XMODEM and XMODEM1K protocols. XMODEM is a block-oriented, error checking protocol that is a single file, half duplex protocol. XMODEM1K is the same as XMODEM, except that it uses larger 1024 byte (1K) packets.

The YMODEM protocol is similar to the XMODEM1K protocol in that it transfers data in 1K packets, but it also allows multiple files to be sent in one transfer.

The YMODEMG protocol transfers multiple files like YMODEM, but performs no error detection or error correction. It can be much faster than YMODEM, but requires an error-free data connection.

With Personal Communications, you can perform the following data transfer functions to or from ASCII hosts:

Send any type of files to the host system
Send files using the Transfer menu using XMODEM, YMODEM, XMODEM1K, or YMODEMG.

Receive files from the host system
Receive files using the Transfer menu and XMODEM, YMODEM, XMODEM1K, or YMODEMG.

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.

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, scroll down to **Transferring Data**.
3. Select choices from that list for detailed information.

Setting Up a Session Window's Appearance

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

Preferences → Appearance → Display Setup from the Edit menu
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.

Preferences → Appearance → Color Mapping from the Edit menu
Set the colors used in session windows.

Preferences → Appearance → Font from the Edit menu
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.

Preferences → Appearance → Window Setup
Change the appearance and title of the session window and change the session icon.

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.

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. The settings are stored in a .BAR file.

To customize your tool bar, select **Preferences → Tool Bar → Tool Bar Style** from the **Edit** 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.

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

Showing or Hiding the Menu Bar, Status Bar, and Tool Bar

You can show or hide the menu bar, status bar or tool bar.

If the menu bar is displayed, select **Show Status Bar** from the **View** menu or **Show Tool Bar** from the **View** menu; otherwise:

1. Click the upper 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 Status Bar** appears when the status bar is shown.
   - **Show Status Bar** appears when the status 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, status bar or tool bar, select **Hide Menu Bar**, **Hide Status Bar**, or **Hide Tool Bar**.
3. To show either the menu bar, status bar or tool bar, select **Show Menu Bar**, **Show Status Bar**, or **Show Tool Bar**.

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

Windows Setup

Note: If you set the **Maximized Style** (in the Windows Setup dialog) to **Without Title Bar**, then the **Minimize All Windows** option on the Windows taskbar will not have any effect. To minimize the window, press Alt-Space and select **Minimize**.

Getting Help

If you are 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.

Setting Up and Using the Assist Functions

Personal Communications provides auxiliary functions that let you operate the system more efficiently. You can use the following functions:

- **Keyboard/Macro/Script Function** from the **Actions** menu
- **Preferences ➔ Hotspots** from the **Edit** menu
- **Preferences ➔ Keyboard** from the **Edit** menu
- **Preferences ➔ Macro/Script** from the **Edit** menu
- **Preferences ➔ Mouse** from the **Edit** menu
- **Preferences ➔ Popup Keypad** from the **Edit** menu
- **Preferences ➔ Tab** from the **Edit** menu (for VT Emulation sessions only)
- **Preferences ➔ Web Browser** from the **Edit** menu

This section describes these auxiliary functions, and explains how to set up and use them.

Keyboard, Macro and Script Functions

A Keyboard/Macro/Script Function command lets you run scripts, macros or Personal Communications-supplied key functions without using the keyboard. Run the scripts, macros or key functions from the current cursor position in the session window.

Scripting Functions

You can write, execute, record and terminate VBScripts in the emulator environment. These scripts have access to the HACL automation API. The programming environment includes methods, class descriptions and properties. VBScript is a subset of the Visual Basic programming language.

Macro Functions

A macro is a sequence of key or mouse actions and host commands that you can perform with a single action, such as a keystroke. Before you can use a macro function, you need to define it. For more information, see "Macro/Script Setup and Use" on page 65.

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 to generate macros.

CM Mouse (Sample Application)

CM Mouse is a sample application included with Personal Communications that provides intelligent and programmable mouse support for 3270 and 5250 emulation sessions. It allows users of host applications to point-and-click to perform host functions. With its unique screen-recognition technology, CM Mouse hotspots change instantly to give context-sensitive functions to each host application window.

CM Mouse pop-up menus give you instant access to lists of options and functions simply by pointing and clicking. Pop-up menus can simplify the selection of commands and options, and can automate repetitive tasks.

For more information about CM Mouse, refer to the *CM Mouse Support User's Guide and Reference*.

Hotspot 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 function key number to perform the function.

Tip: Select **Show hotspots** to get three-dimensional (3D) hotspots; these only require a single click, and they stand out on your screen.

You can define the following actions for a hotspot:
- Click on a URL to connect to a World Wide Web site.
- 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.
- For VT, simulate two sets of function keys, PF1 through PF4 and F6 through F20.

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 function defined for each key on the keyboard, except some reserved keys.

You can define the following functions for the keys.
- Performing a key function
- Playing a macro
- Entering characters

Note: By default, the Enter function is assigned to the Ctrl key. To change this assignment or, if you are using a non-IBM compatible keyboard and the Enter key does not work properly, you need to customize your keyboard. For 3270 and 5250 sessions, you may use the new keyboard map files provided with Personal Communications 5.5 (see "Win32 Cut, Copy, and Paste Hotkeys" on page 64).

Keyboard File

When you specify a key, you can save the new keyboard layout in a file (.KMP). If you create two or more keyboard files, you can alternate between them as required.

To assign a function to a key on the keyboard:

1. Select **Preferences → Keyboard** from the **Edit** menu or click the map icon on the tool bar.
2. When the Keyboard Setup window appears, select **Customize**.
3. Assign the key functions, referring to the online help for detailed instructions.
4. Save your changes and exit the Customize Keyboard window.
5. Select **OK** after completing the setup.

You can reset either the entire keyboard or specific keys to defaults:

- To reset the entire keyboard, set the current keyboard to **IBM Default** in the Keyboard Setup window.
- To reset specific keys, select a key in the Customize Keyboard window and then select **Default** from the Current Actions for Selected Key box.

Note: There are seven keys that you cannot redefine and they are gray or dimmed in Keyboard Setup; these keys are: Alt, AltGr, Print Screen, Scroll Lock, CapsLock, NumLock, and Shift.

Customizing the VT Emulator Keyboard

If you are using a VT emulator session, you can represent ASCII control characters in the character strings that you define for your customized keyboard.

Use the # character to represent the CTRL key, following it by any character from the following list (only upper-case alphabetics are allowed):

```
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]ˆ_
```

Use ## to represent an actual #. For example, 123##45 represents 123#45.

If you follow # with any other character than those shown, you will get an error message:

```
PCSKBD160 - Unrecognized key-action: "character string
```

For example, the error for the string "#a is

```
PCSKBD160 - Unrecognized key-action: "#a
```

The set of control characters is as follows:

Character pair	Control	Notes
#@	Control-@	NULL
#A	Control-A	
through		
#Z	Control-Z	
#[	Control-[	ESC
#\	Control-\	
#]	Control-]	
#ˆ	Control-ˆ	
#_	Control-_	

Because the *.KMP file can be edited, there is a run time check to ensure that the character string is correct. If "### is processed, then # will be displayed, followed by a beep to signify that the entire character string was not played. If "123#a456 is processed, then 123 will be displayed, followed by a beep.

Win32 Cut, Copy, and Paste Hotkeys

Personal Communications 5.5 includes two .KMP keyboard map files that map the standard Win32 hotkeys for Cut, Copy, and Paste to Ctrl+X, Ctrl+C and Ctrl+V, respectively. The key values for the following functions have also been changed: Page Up (3270 only), Page Down (3270 only), Enter and New Line. The user can utilize the new keyboard map files, or can add these new key values to an existing map file.

For 3270 sessions, the default .KMP file is pcswinkb3.kmp. The remapping is given in the following table.

Table 9. New Keyboard Map Functions for a 3270 Layout

Function of Key	Key
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Page Up	PF7
Page Down	PF8
Enter	Enter
New Line	Right Ctrl

For 5250 sessions, the default .KMP file is pcswinkb5.kmp. The remapping is given in the following table.

Table 10. New Keyboard Map Functions for a 5250 Layout

Function of Key	Key
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V

Table 10. New Keyboard Map Functions for a 5250 Layout (continued)

Function of Key	Key
Enter	Enter
New Line	Right Ctrl

The PF7 and PF8 will remain mapped to Roll Up and Roll Down, respectively.

Macro/Script Setup and Use

A macro is a sequence of key or mouse actions and host commands that you can perform with a single action, such as a keystroke. You can edit an existing macro or create a new macro by selecting **Preferences → Macro/Script** from the **Edit** menu.

A script is a VBScript program that is a subset of the Visual Basic programming language. For information on VBScript, see the on-line help pages.

Using a Macro or Script

You can use a macro or script in various ways. Table 11 lists examples of how you can set up and then use macros and scripts.

Table 11. Macro Use Examples and Settings

If you want to...	Do this...
Automatically play a macro or script when your session starts.	Set an **Auto-Start Macro/Script**.
Play a macro or script while attached to a host application.	**Start Playing Macro/Script**.
Play a macro or script with the keyboard or macro function.	Use the **Keyboard/Macro/Script Function**.
Click on a hotspot to play a macro or script.	Set a **Hotspot**.
Assign a macro or script to a pop-up keypad button.	Customize the **Pop-Up Keypad** file.
Press the mouse button to play a macro.	Customize a **Mouse** file.
Press a key on the keyboard to play a macro or script.	Customize a **Keyboard** file.

Creating a Macro

You can create a macro manually or by recording some of your interactions with the host system, such as your logon procedure.

To create a macro manually:

1. **Preferences → Macro/Script** from the **Edit** menu.
2. When the Macro/Script Setup window appears, select **Customize**.
3. When the Customize Macro/Script window appears, select **File**, then **New**, then **Macro**, and edit the macro. You can type statements directly or select functions, characters, or even other macros, from the list of Key Actions in the **Select a Key-Action** subpanel.

   Refer to the online help for detailed information.
4. Click **File**, then **Save** to save the macro file.

Macro Statements

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

Key function
Use Personal Communications-supplied key functions

Macro Define a macro within another macro but you cannot create a macro in a permanent loop where the first macro is repeatedly called at the end of the macros.

Character
Use any characters in the **Character** list in the Customized Macro window.

Character string
Use character strings you can type from the keyboard. You must use a double quotation mark (") at the beginning of the character string.

Wait condition
Specify wait conditions to stop the process until the specified time has elapsed or the status satisfying the specified condition occurs.

Tokens
You can use tokens, such as goto and run, to add logic.

Macro Loop Considerations
If you use a GOTO and a label in a macro to create a loop, you may experience unpredictable behavior if that loop executes a large number (more than 1000) of iterations.

Creating a Script
You can create a script manually or by recording some of your interactions with the host system, such as your logon procedure. Scripts, however, allow a higher level of programming control unavailable with macros.

To create a script:
1. **Preferences → Macro/Script** from the **Edit** menu.
2. When the Macro/Script Setup window appears, select **Customize**.
3. When the Customize Macro/Script window appears, select **File**, then **New**, then **Script**, and edit the script. The **Select a Key-Action** subpanel, in gray, is not available for creating scripts.

   Refer to the online help for detailed information.
4. Click **File**, then **Save** to save the script file.

Setting Up a Macro or Script to Autostart
To set up a macro or script to autostart:
1. **Preferences → Macro/Script** from the **Edit** menu.

   The Macro/Script Setup window appears.
2. Set a macro or script to auto-start when your workstation starts.
3. Refer to the online help for detailed instructions and then select **OK** after completing your setup.

Recording Macros or Scripts
To start macro or script recording, **Start Recording Macro** from the **Actions** menu, type the macro or VBScript name, select the type of file required, and then select **OK**. If you are recording a Macro format file for Express Logon, select the **Enable** check box and enter the Express Logon Feature (ELF) Application ID.

Note: When recording a macro, the processing of a nondisplayable field is controlled by the setting of the parameter HideNonDisplayDataOnRecord=Y in the [Keyboard] stanza of the .WS file. The hidden fields are ignored during the recording session.

To end macro or script recording, select **Cancel Recording Macro** from the Actions menu. The recording operation is canceled, and the macro or script is not saved.

To pause macro or script recording, select **Pause Recording Macro** from the **Actions** menu. The recording operation stops. To restart recording, select **Resume Recording Macro**.

To end macro or script recording, select **Stop Recording Macro** from the **Actions** menu. Recording ends and the macro is saved in a specified file.

Playing Macros and Scripts

To start macro or script playing, select **Start Playing Macro/Script** from the **Actions** menu, select the macro or script, and then select **OK**. The selected macro starts to play.

To stop macro or script playing, select **Quit Playing Macro/Script** from the **Actions** menu. The macro or script stops playing.

Note: When playing a macro, the processing of a nondisplayable field is controlled by the setting of the parameter HideNonDisplayDataOnRecord=Y in the [Keyboard] stanza of the .WS file; setting this causes a pop-up window to display, requiring your input. When this appears, type in the requested information and press **Enter** to continue.

Express Logon Feature

The Express Logon Feature (ELF) allows a Personal Communications TN3270E user to logon to a host application without sending the User ID and password. This function is designed to be implemented only in certain circumstances by administrators of Personal Communications; please refer to the *Administrator's Guide and Reference* for detailed information on implementation.

Recording an Express Logon Macro

To record an ELF macro, do the following:

1. Select the **Macro** file format of recording.
2. Check the Express Logon for Macro **Enable** box.
3. Enter the Application ID for Express Logon.
4. Follow this sequence when the host prompts you to type the user ID:
   a. Type the user ID.
   b. Type the password into the non-display password field.
   c. Only after typing the password should you type any additional data needed for logon.

   As the keystrokes that were recorded during the logon are saved in the ELF macro file, Personal Communications will attempt to identify and replace the user ID and password that you enter with special placeholder strings, `)USR.ID(` and `)PSS.WD(`. This automatic recognition requires that the password be typed into the first non-display input field. The user ID is assumed to have been entered just prior to the password.

If you make an error when typing any logon data, you must record the macro again.

During later playback of the macro, the ELF Application ID (stored in the macro) and the secured connection will be used to repeat the logon without the need for user ID and password.

You can also manually configure a macro for ELF. Refer to the *Administrator's Guide and Reference* for more information.

Verifying an ELF Macro

You can visually inspect the macro recording of a host application logon to verify that the UserID and Password have been replaced by Express Logon Feature (ELF) tags. The procedure is as follows:

1. From the Action Bar, open the macro file containing the recorded keystrokes by selecting **Edit → Preferences → Macro/Script**.
2. Select the macro file you just recorded and then select **Customize**.
3. Verify that the UserID has been replaced with two tags: the ELF Application ID and the ELF UserID placeholder. The Application ID tag consists of three words, each separated by a blank character: `elf`, `applid`, and the identifier of the host application that will be logged onto. The UserID placeholder is `)USR.ID(`

   For example, `"myUserID` should have been replaced with `")USR.ID(`.
4. Verify that the Password has been replaced with the ELF Password placeholder tag `)PSS.WD(`.

   For example, `"myPassword` should have been replaced with `")PSS.WD(`.

Mouse Setup

The **Mouse Setup** command 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:
- Running the Personal Communications-supplied key functions
- Running the user-defined macros
- Placing a character at the current cursor location

Mouse File

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

To set up the mouseand assign functions to the mouse buttons:

1. Select **Preferences → Mouse** from the **Edit** menu.

   The current settings appear in the Mouse Setup window.
2. Set up the required items, referring to the online help for detailed instructions.

   If you want to create or edit a mouse file:

   a. Select **Customize**.
   b. When the Customize Mouse window appears, allocate functions to the right and left buttons of the mouse. These appear in **Current Action for Mouse Button**.
   c. Select the required functions from **List of Key Actions**.
   d. Save your changes and then select **OK**.
3. Select **OK**.

   The mouse setup is complete.

Pop-Up Keypad Setup

The pop-up keypad is a small window in which some buttons are arranged. To display the pop-up keypad, put the pointer anywhere in the session window and press the right mouse button.

You can allocate the following functions to these buttons:
- A standard key function provided by Personal Communications
- A user-specified macro
- A character entry

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

To view the description of a short-name key function or macro, click the right mouse button while pointing at one of the function or macro names.

Pop-Up Keypad File
You can specify the number of buttons displayed in the pop-up keypad, the functions allocated to those buttons, and colors of the buttons. You can save the specified pop-up keypad contents in a pop-up keypad file (also referred to as a *poppad* file).

A pop-up keypad file (*.PMP) contains the information for the number of buttons displayed in the pop-up keypad, the functions allocated to those buttons,and color information. You can define which pop-up keypad file is allocated to the pop-up keypad.

Using the Pop-Up Keypad
To use a pop-up keypad:
1. With the mouse pointer anywhere in the session window, click the right mouse button.
2. Select **Pad 1, Pad 2, Pad 3**, or **Pad 4**.
3. Click the required button in the pop-up keypad.

To set up the pop-up keypad:
1. Select **Preferences → Popup Keypad** from the **Edit** menu.
2. When the Popup Keypad Setup window appears, set the required items, referring to the online help for detailed instructions.

   If you want to edit the pop-up keypad file, select **Customize** and then make your changes.
3. Select **OK**. The pop-up keypad you selected is ready for use.

Tab Setup

For VT, Tab Setup allows you to define tab stops for your VT session.

Web Browser Setup

Web Browser Setup allows you to define a preferred web browser and to use it rather than the one that comes with your operating system.

Managing Emulator Sessions

Personal Communications provides the following functions, in addition to those provided by Windows, for those who work with several open session windows simultaneously. These functions allow you to manage your session windows easily and quickly. The Window menu has the following selections:

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 Session** from the Window menu to display the session window on the screen. Then, select **Jump**.

Hide Session
Use **Hide Session** to stop displaying a visible session window.

You cannot hide all sessions. At least one session is always shown.

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

Use the View menu 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.

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, scroll down to **Managing Workstation Windows**.

   Select choices from that list for detailed information.

1390/1399 Code Page Support

Personal Communications Version 5.5 supports 1390 and 1399 code pages; this allows Japanese character processing capability. For more information, refer to the information about Unicode support in the *IBM Personal Communications Version 5.5 Administrator's Guide and Reference*.

Checking for Corrective Service Distributions and Authorized Program Analysis Reports

IBM provides two forms of updates to the Personal Communications product: Corrective Service Distributions (CSDs) and Authorized Program Analysis Reports (APARs). CSDs are full product updates and APARs are single module product fixes. Users should not implement CSDs or APARs without administrative approval.

Users can use WebUpdate to check for CSDs and (APARs) for Personal Communications, using the Internet. You must be authorized in the System Policy—if you are not authorized, then a System Policy restriction panel will open.

To check for CSDs and APARs:

1. From the Windows **Start** menu, click **IBM Personal Communications➔ Administrative and PD Aids**.
2. Select **Product Update Tool**.
3. The configuration panel appears automatically if WebUpdate has not been run after the initial Personal Communications installation. Click **Connection Configuration** to select the following options:
   - Connection Method

     Specify your Internet connection method. If connecting through a modem, select the dialup connection name from the drop-down list.
   - Proxy Connection Settings

     During installation, Personal Communications automatically checks the Internet browser proxy settings and configures WebUpdate to use those settings. If no proxy settings are available, Personal Communications defaults the settings to blank (no settings). Select **Uses Proxy Connection** to add or change the proxy settings for WebUpdate. If you use an HTTP proxy server, you can enter the username and password.
4. Click **OK** to close the configuration panel.
5. Click **Check for CSDs** to access WebUpdate and check for available CSDs. If CSDs are available, you will be prompted to go to the registration Web pages for the CSDs. If you do not go to the registration Web page, then the date used for automatic checking is not updated in the registry. A pop-up panel will notify you if there are no CSDs available for the current version.
6. The APAR portion of the utility is intended primarily for Personal Communications administrators. Do not test, commit, or remove an APAR without administrative approval.

Chapter 6. Utilities

Personal Communications provides various utilities, including the following:

32-bit ODBC Administrator
>	Allows you to add, configure, or delete an ODBC data source.

Database Access
>	Allows read-only access to data in the selected database after you have configured a data source.

CM Mouse
>	Provides intelligent and programmable mouse support for 3270 and 5250 emulation sessions.

Menu-Bar Customization
>	Provides a means of changing the content of the menu-bar of the Personal Communications session window.

Multiple Sessions
>	Provides the capability to run multiple host sessions using a single icon.

ZipPrint
>	Allows you to print PROFS or OfficeVision notes, calendars, OV documents, CMS files, XEDIT workspaces, and 3270 session screens.

Convert Macro
>	Allows an existing Personal Communications Macro file to be converted to an XML or VBScript file.

PC Organizer
>	Runs Windows applications from a 5250 display session.

Data Transfer
>	Transfers data from the AS/400 system to your workstation, or from your workstation to the AS/400 system. (Record-level data transfer).

Text Assist (SBCS only)
>	Allows you to create or edit a document or short messages.

User Preferences
>	Allows setting up of certain advanced configuration parameters.

32-Bit ODBC Administrator

ODBC is a programming interface that enables applications to access data in database management systems that use Structured Query Language (SQL) as a data access standard.

Use the following steps to set up the Personal Communications ODBC data source:

1. Select the **32-bit ODBC Administrator** icon from the Windows Control Panel. The Data Sources window appears.
2. Select IBM DB2® ODBC Driver data source in the Data Sources (Drivers) list. Then click **Finish**.
3. Click **Add Database**. The Personal Communications Add Database SmartGuide appears to prompt you through the set up.
4. Select the **Manually Configure a Connection to a DB2 Database** radio button.

5. Specify the information to set up the data source, by clicking **Next**.

6. When you are finished specifying the information, click **Done**.

7. You will be prompted to test the connection. To test the connection, click **OK**.

Notes:

1. Personal Communications uses ODBC 32-bit drivers. Applications, such as Lotus 1-2-3 included in the Lotus SmartSuite® 96 package, require a 16-bit driver and will not work with Personal Communications. You should see your product vendor for a version that utilizes 32-bit ODBC drivers (Lotus 1-2-3 included in Lotus SmartSuite 97 for example).

2. To successfully test the DB2 connection, you must start the Personal Communications SNA subsystem with the appropriate configuration data. This configuration data must include the following:

   - Node definition
   - Device definition
   - Connection definition
   - Partner LU definition
   - Mode definition (IBMRDB must be created)
   - CPI-C Side Information

   You might also need to include a Local LU 6.2 definition.

   For more information on SNA Node operations, refer to *Administrator's Guide and Reference*.

Following is a sample .ACG file:

```
NODE=(
     ANYNET_SUPPORT=ANYNET_SUPPORTED
  CP_ALIAS=YOURALIAS
     DEFAULT_PREFERENCE=NATIVE
     DISCOVERY_SUPPORT=DISCOVERY_CLIENT
     FQ_CP_NAME=YOUR.CPNAME                    * <---- Modify w/ CP Name
     NODE_ID=05D00000
     NODE_TYPE=END_NODE
     REGISTER_WITH_CDS=1
     REGISTER_WITH_NN=1
)
PORT=(
     PORT_NAME=LAN0_04
     DLC_DATA=00000000000004
     DLC_NAME=LAN
     IMPLICIT_CP_CP_SESS_SUPPORT=1
     IMPLICIT_DEACT_TIMER=0
     IMPLICIT_DSPU_SERVICES=NONE
     IMPLICIT_HPR_SUPPORT=1
     IMPLICIT_LIMITED_RESOURCE=NO
     LINK_STATION_ROLE=NEGOTIABLE
     MAX_IFRM_RCVD=8
     MAX_RCV_BTU_SIZE=32767
     PORT_TYPE=SATF
     PORT_LAN_SPECIFIC_DATA=(
          ACK_DELAY=100
          ACK_TIMEOUT=3000
          ADAPTER_NUMBER=0
          BUSY_STATE_TIMEOUT=60
          IDLE_STATE_TIMEOUT=30
          LOCAL_SAP=04
          MAX_RETRY=10
          OUTSTANDING_TRANSMITS=16
```

```
                POLL_TIMEOUT=3000
                POOL_SIZE=16
                REJECT_RESPONSE_TIMEOUT=30
                TEST_RETRY_INTERVAL=8
                TEST_RETRY_LIMIT=5
                XID_RETRY_INTERVAL=8
                XID_RETRY_LIMIT=5
        )
)
LINK_STATION=(
        LS_NAME=LINKMVS
        ACTIVATE_AT_STARTUP=1
        ADJACENT_NODE_TYPE=APPN_NODE
        AUTO_ACTIVATE_SUPPORT=0
        CP_CP_SESS_SUPPORT=1
        DEFAULT_NN_SERVER=0
        DEST_ADDRESS=40000000000000      * <---- Modify w/ Dest
        DISABLE_REMOTE_ACT=0
        DSPU_SERVICES=NONE
        ETHERNET_FORMAT=0
        HPR_SUPPORT=0
        LIMITED_RESOURCE=NO
        LINK_DEACT_TIMER=0
        LINK_STATION_ROLE=USE_ADAPTER_DEFAULTS
        MAX_IFRM_RCVD=0
        MAX_SEND_BTU_SIZE=32767
        NODE_ID=05D00000
        PORT_NAME=LAN0_04
        SOLICIT_SSCP_SESSION=0
        TARGET_PACING_COUNT=1
        TG_NUMBER=0
        USE_DEFAULT_TG_CHARS=1
)
DLUR_DEFAULTS=(
        DEFAULT_PU_NAME=YOURALIAS     * <---- Modify w/ your name
        DLUS_RETRY_LIMIT=3
        DLUS_RETRY_TIMEOUT=5
)
LOCAL_LU=(
        LU_NAME=LUNAME                * <---- Modify w/ LU Name
        LU_ALIAS=LUALIAS              * <---- Modify w/ LU Alias
        LU_SESSION_LIMIT=0
        NAU_ADDRESS=0
        ROUTE_TO_CLIENT=0
        DEFAULT_POOL=0
)
.
.
.
PARTNER_LU=(
        FQ_PLU_NAME=PARTNER.LUNAME        * <---- Modify w/ Partner Info
        CONV_SECURITY_VERIFICATION=1
        MAX_MC_LL_SEND_SIZE=32767
        PARALLEL_SESSION_SUPPORT=1
        PARTNER_LU_ALIAS=RBNAME           * <---- Modify w/ Location/RDBNAME
        PREFERENCE=USE_DEFAULT_PREFERENCE
)
CPIC_SIDE_INFO=(
        SYM_DEST_NAME=DB2CPIC             * <----- Needed for ODBC configuration
        CONVERSATION_SECURITY_TYPE=NONE
        MODE_NAME=IBMRDB
        PARTNER_LU_NAME=USIBMNM.NM57DB21 * <---- Modify w/ Partner Info
        TP_NAME=DB2DRDA                   * <---- Modify w/TP Name (per DB2 help)
        TP_NAME_TYPE=APPLICATION_TP
)
```

```
VERIFY=(
    CFG_MODIFICATION_LEVEL=13
    CFG_VERSION_LEVEL=1
)
```

Database Access

Database Access lets you access host or PC databases and retrieve data, using ODBC drivers. If you specify the conditions for accessing data in each window, the desired query can be created automatically.

From Database Access, you can:
- See and modify the SQL statements that are created automatically.
- See available database-table lists.
- Copy spreadsheet data to the clipboard.
- Show data in the grid in the main window spreadsheet, send data to other applications (for example, Lotus 1-2-3 or Microsoft Excel), or send data to a printer.

Before using Database Access, you should read Help information on:
- Database size limits
- Installed programs

CM Mouse

CM Mouse allows users of host applications to point and click to perform host functions. Clicking a CM Mouse on *hot spots* gives true context-sensitive function to each host application screen. Hot spots are not fixed function or fixed placement, but change dynamically as you move through a host application.

CM Mouse pop-up menus give you instant access to lists of options and functions with a simple point and click. Pop-up menus can simplify command selection, choose options, and automate repetitive tasks. The CM Mouse pop-up menu editor allows you to quickly and easily customize the menus for your own purposes or to create new menus.

The CM Mouse scripting language is powerful enough to automate complex host interactions, yet simple enough for novice users.

Refer to *CM Mouse Support User's Guide and Reference* for more information.

Menu Bar Customization

This utility enables you to remove items from the menu bar of the Personal Communications session window. The changes affect only the session that you customize, so you can make different changes to each session. You can remove three types of items:

1. A menu bar command, such as **File**, **Edit**, or **Communication**
2. A pulldown menu command, such as, **New**, **Open...**, **Color Mapping**, **Configure**
3. A separator-line that resides between two commands in a pulldown menu

The modifications to the menu bar are saved in the workstation profile that you choose and become active the next time you start the session.

Note: If you created a customized menu in a previous version of Personal Communications, you may need to reconfigue the settings to account for the new menu structure in Version 5.5.

Multiple Sessions

The Personal Communications Multiple Sessions Batch Program allows you to start several host sessions by clicking a single icon; the necessary commands are specified in a batch file (.BCH). You can include in a batch file other programs, which may communicate with a host session using the DDE or EHLLAPI interface.

ZipPrint

ZipPrint is a 3270 utility that enables you to print PROFS or OfficeVision (OV) notes, calendars, OV documents, CMS files, XEDIT workspaces, and 3270 session screens. By default, it uses the Windows printer currently set up for the host session, but you can change it if you wish.

You do not have to install ZipPrint—you just start it. It adds itself to the menu-bar of the sessions for which you define it, so you can use it in the same way as any other menu-bar function. You must start ZipPrint before you start a session in which you want to use it.

ZipPrint needs the DDE/EHLLAPI, so you must make sure that this is enabled for the sessions for which you want to use ZipPrint. (It is enabled by default, but you should check that it has not been turned off.)

For more information about ZipPrint, see "ZipPrint (3270 Only)" on page 50.

Convert Macro

The Convert Macro utility allows you to convert an existing Personal Communications Macro file to XML or a VBScript file. To use the conversion utility, click the **Convert Macro** icon in the **Utilities** folder.

To convert an existing macro to XML or a VBScript, do the following:
1. Select the name of an existing macro to be converted.

   Note: The macro must exist in the application data directory specified during installation.
2. Enter a name for the new XML file or VBScript or accept the generated name. The extension will be added automatically.
3. Select **VBScript** or **XML** as the type to which the macro should be converted.
4. Click the **OK** Button.
5. Repeat these procedures to convert another macro, or click **Close** to end the application.

PC Organizer

You can use the PC Organizer to run 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: Personal Communications 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 or program, 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.

Data Transfer

Personal Communications Data Transfer enables you to transfer data between an
AS/400 system and your workstation. To use the Data Transfer function, select the
Data Transfer icon.

Transferring data is quite different from transferring files, which is described in
"Transferring Files" on page 57.

Requirements

Before you can transfer data with Personal Communications:

- If you are using SNA connectivities, you must have an active AS/400 session.
- 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 the numeric value format.

For more information about data transfer, refer to the *5250 Emulator User's Reference*.

Text Assist (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.

To start the text assist function, enter `WRKDUC` on the 5250 command line.

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.

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

Function	Description
Required Space	Inserts a required space to keep words together on a line
Required Tab	Indents a block of text
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

User Preference Manager

The User Preference Manager (UPM) provides a method for changing configuration and setup items.

Notes:

1. Preferences set with UPM pertain to you whenever you log on to the same user ID on the affected workstation; they apply to all of your sessions while you are logged on.
2. Preferences set using the session **Edit** menu apply to all sessions controlled by the workstation profile created or changed while using a session—when that session profile is used again, the preferences are applicable, regardless of the user ID at the time.
3. One of the capabilities of UPM is to allow specification of a directory to be used for storing your profiles; this allows full control of your environment.

To access UPM, click **Programs → IBM Personal Communications → Utilities → User Preferences** from the Windows Start menu. The initial UPM screen displays basic information about your Personal Communications installation on the property page with the **General** tab. To change specific configuration items, select the appropriate property page using the Basic tab:

Basic Select the language which is to be used for the user interface in subsequent Personal Communications sessions.

If the UPM application data directory location was selected during installation of Personal Communications, you can specify the default location of workstation profiles.

The **Basic** property page shows a textbox with the currently assigned location where profile files are stored. To change it, type a new name, or click the **Browse** button to locate the directory location of your choice.

If your system was installed with multiple-language support, the **Basic** property page shows a section labeled **Select a default user interface langauage**. If you click on the radio button for **PCOMM User Interface Language Preference**, it also shows a drop-down listbox, with the language selected that is currently being used; you can select any other language from the list, and that language will be used for the user interface when you subsequently restart Personal Communications. Or you can select the radio button **User Default from Regional Settings** if you want the language to be that specified in the Windows settings. You may also select the radio button **Post a Language Selection Dialog for each process**; this results in a pop-up dialog each time you start a new application from the Personal Communications group of programs.

Note: You may receive a warning message, if the selected language is incompatible with your system's current code page. You may ignore this, if you are planning to reboot your computer to select a new system locale with a compatible code page.

Chapter 7. Enabling Client/Server Applications

Personal Communications support for APPN end nodes lets you take advantage of APPN networks. An APPN network allows automatic locating of partner applications and dynamic, optimized route selection. These features allow workstations to communicate more flexibly with other systems in the network.

Personal Communications also provides support for 32-bit APPC and CPI-C application programming interfaces (APIs), which provide convenient ways for 32-bit client application programs on your workstation to communicate with those on other workstations.

Configuring a Node

Before you can take advantage of the client APIs and communicate with other application programs, you first need to configure Personal Communications as an SNA end node.

To configure the SNA node:

1. From the **Start** menu, click **Programs → IBM Personal Communications → SNA Node Configuration**.

   The Personal Communications SNA Node Configuration window appears.
2. Select the necessary Configuration Options in the order listed on the window.

   To select an option, click it and then click **New...**

   For each option, enter the appropriate information on the property pages. Most required information is listed on the Basic page. Click **OK** to complete the option. Click **Help** for more information about the individual parameters.
3. Click **Save** or **Save As** from the File menu.
4. Type the file name and then click **Save**. Note that you can choose the file type and where to save this file. The default file type is .ACG and the default directory is the location specified in the User Preference Manager.
5. Click **Exit** from the File menu.

> **Tip**
>
> If you have more than one configuration file, you can apply additional configuration files to an active node. Refer to the help in the SNA Node Operations section of the product for details.

Starting the SNA Node

1. To start the SNA node, from the Start menu, click **Programs → IBM Personal Communications → SNA Node Configuration**.

   The Personal Communications SNA Node Operations window appears.
2. Click **Start Node...** from the Operations menu.

   The Select configuration file to use... window appears.
3. Double-click the configuration file (.ACG) that defines the node you want to start.

Note:

Another way to start the SNA node is to use the command line. The command to use is CSSTART. For the proper syntax see the *5250 Emulator User's Reference*, *3270 Emulator User's Reference*, or *Administrator's Guide and Reference*.

Stopping the SNA Node

1. To stop the SNA node, from the Start menu, select:

   Programs
     IBM Personal Communications
       Administrative and PD Aids
         SNA Node Operations

   The Personal Communications SNA Node Operations window appears.
2. Click a resource in the Alias column.
3. Click **Stop Node...** from the Operations menu.

   Note

   Another way to stop the SNA node is to use the command line. The command to use is CSSTOP. For the proper syntax see *5250 Emulator User's Reference*, *3270 Emulator User's Reference*, or *Administrator's Guide and Reference*.

APING Requirements

If you wish to run the Check Connection (APING) utility provided with this package to an AS/400 running OS/400 V3R1, you must install PTF MF10808 on the AS/400 first. If this PTF is not installed, then errors with sense codes of 080F 6051 and 1008 201D will occur.

Chapter 8. API Client Attachments

Communications Server for Windows NT and NetWare for SAA

Support for Communications Server

If you are connecting to a Communications Server for Windows by using the Communications Server client or installing on the Communications Server machine, configure Personal Communications to use the **SNA API client** interface.

Three different connectivities apply:

Host 390
> APPC3270 or LUA3270

AS/400
> 5250

Support for NetWare for SAA

If you are connecting to NetWare SAA Version 2.0 or later, or IBM Communications Server for Windows NT 5.0 or later, first install the client, then install Personal Communications. When you select to install the API Client for NetWare for SAA, you will be prompted to specify the type of server that you use. In the configuration step, choose **API Client** for the interface and then choose the connectivity that applies.

Refer to the API Client documentation for further information.

Load Balancing

Personal Communications now supports load balancing for all client types. Load balancing enables you to distribute LU 0 to 3 and LU 6.2 sessions across Personal Communications and NetWare for SAA servers. The server advertises services including load factors, which the clients or servers can gather and organize to select a server.

3270 via NWSAA or IBM Personal Communications (IPX/SPX-IP)

Load Balancing over IPX/SPX Protocols: Load balancing over IPX/SPX is a key feature for NWSAA 2.0 and later versions. This feature dynamically balances dependent LU2 (host-to-workstation) sessions. For LU2 sessions over IPX/SPX connections, the load is distributed across host links on servers to a named LU2 pool.

Note: For true load balancing use a wild card ('*') Server Name and Service Name, and use the pooled LU category with a LU-Pool Name.

Load Balancing over TCP/IP Protocols: Load Balancing over TCP/IP protocols is a key feature for IWSAA 3.0 and CS/NT 5.1. This feature dynamically balances dependent LU2 (host-to-workstation) sessions. For LU2 sessions over TCP/IP connections, the load is distributed across servers within a named LU2 pool and a named scope. That is the server with the least overall load within the named scope supporting the named LU2 pool will satisfy a given LU2 connection request.

Note: IBMSLP.DLL should be available on the client workstation system directory. Refer to your Server documentation for information about where to obtain this dynamic load library file.

Note: For true load balancing use a wild card ('*') Server Name and Service Name, and use the pooled LU category with a LU-Pool Name.

Hot Standby over IPX/SPX and TCP/IP

The NWSAA Hot Standby feature enables to ensure that configured connections to a host can continue to function when a critical server goes down by triggering activation of alternative connections on a backup server. Load Balancing can be used in conjunction with Hot Standby.

If the active session to the server goes down because of server or link failure, Personal Communications will try to reconnect the session with the provided backup server name, service name, or pool name.

IBMSLP.DLL should be available on the client workstation system directory.

NetWare Coexisting with LAN

If you want to use LAN via NetWare for SAA, or if you want to use NetWare Client and the LAN connection of Personal Communications simultaneously, you should use the NDIS driver.

The API client attachments let you use an interface provided by another application to make a Personal Communications connection.

Three interfaces are supported:

- **Communications Server for Windows**

  You can run Personal Communications on a Communications Server; it uses the Communications Server protocol stack to connect to the host.

- **Client for Communications Server for Windows**

  For client workstations, Communications Server has a client that communicates with the server and provides an interface that Personal Communications can use. The client must be installed on your workstation before you install Personal Communications.

- **Client for NetWare for SAA**

  NetWare for SAA provides hot backup and load balancing. The requirements are:
  - The Novell NetWare client for Windows must be installed.
  - The NetWare for SAA client must be installed.
  - Both clients must be installed before you install Personal Communications.
  - If you are using NetWare for SAA 2.0, you must create an INI file for the NetWare for SAA client, as described in the client Readme file.

  Notes:
  1. You cannot install the Personal Communications SNA protocol drivers if you intend to use the API Client interface. You can, however, use the non-SNA attachment types, which include HPO, Home3270, TN3270, and IPX/SPX.
  2. The Netware for SAA connections discussed here are separate from the IPX/SPX connection which you can configure through the LAN interface.

  The API client interface lets you make the following attachments:
  - **3270 emulation**

LUA - LU 0, 1, 2 or 3 via the WinRUI interface. This lets you have normal display or printer sessions.

– **APPC3270**

  This provides 3270 display sessions (not printer) over an LU 6.2 connection to the host.

– **5250 emulation**

  This provides 5250 display and printer sessions through APPC.

Chapter 9. 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.

Press F1 to display help for the messages that appear.

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 *Administrator's Guide and Reference* for details.

Functions Restricted by System Policies

If your workstation is centrally administered, you may be shown a warning or pop-up error message whenever you attempt to use certain restricted functions. For example, if your ability to remap the keyboard is restricted, a message would be displayed when you select **Preferences → Keyboard** from the **Edit** menu.

Contact your system administrator for further guidance. For further information about the systems policies provided with Personal Communications, refer to *Administrator's Guide and Reference*.

System Error Messages

If a page fault or similar system error message appears in a pop-up window, you can copy its contents into the Windows clipboard. To do this:
1. Click **Details Command** on the pop-up window.
2. Mark the text that you want to copy.
3. Right click the marked text and then click **Copy**.
4. Start an editor, such as Notepad, and click **Paste** from the Edit menu.
5. Save the file in case an IBM service representative needs this information to diagnose your problem.

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 and 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 **Help Contents** from the **Help** menu.

2. Select **The operator information area messages**.

> **Tip**
>
> When the index window appears, select the **Index** button, and then select **Find**. Type in the number of the message. Click **Search**.

Part 3. Appendixes

Appendix. Notices

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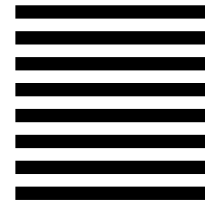
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