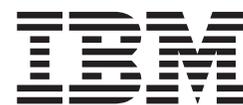
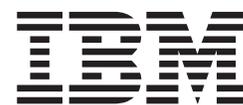


Personal Communications for Windows, Version 6.0



Quick Beginnings

Personal Communications for Windows, Version 6.0



Quick Beginnings

Note

Before using this information and the product it supports, be sure to read the general information under “Notices,” on page 105.

Eighth Edition (September 2009)

This edition applies to Version 6.0 of Personal Communications (program number: 5639-I70) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About This Book

This book describes how to install, configure, and start IBM® 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 6.0*
- *IBM Personal Communications iSeries for Windows, Version 6.0*

See “What’s in the Package” for information regarding what is in the product package.

In this book, *Windows*® refers to Microsoft® Windows 2003, Windows XP, Windows Server 2008, Windows 7 and Windows Vista. When information is applicable only to a specific operating system, this will be indicated in the text.

What’s in the Package

The Personal Communications Version 6.0 package contains *IBM Personal Communications for Windows, Version 6.0*, which provides 5250, 3270, and VT emulation and connections to z/OS®, z/VM®, eServer™ i5, System i5®, iSeries®, zSeries® and ASCII host systems.

In addition to the products previously mentioned, the Personal Communications installation image contains the following:

- Adobe Acrobat Reader, to enable you to read softcopy books available on the installation image
- Book files in PDF format

Notes:

1. For each of the two basic packaging options, there are also separate installation images, depending on:

National Languages

Personal Communications is supported on 22 languages. To install Traditional/Simplified Chinese or Korean, click the appropriate link from the Launchpad panel under the **Install** section. To install other languages, you can install from the **Launch setup for Personal Communications** link.

Security Levels

Personal Communications is shipped at the 168-bit encryption level.

Where to Find More Information

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

Information Center

You can find documentation and links to other resources at the Personal Communications Information Center, at the following address:

<http://publib.boulder.ibm.com/infocenter/pcomhelp>

The Information Center contains reference material that is not found in this book, such as keyboard layouts and host code page tables. The Japanese Information Center also contains FAQs and troubleshooting tips.

The Personal Communications Information Center provides information in English and Japanese.

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:

- *Installation Guide*
- *Quick Beginnings* (this document)
- *Emulator User's Reference*
- *Administrator's Guide and Reference*
- *Emulator Programming*
- *Client/Server Communications Programming*
- *System Management Programming*
- *CM Mouse Support User's Guide and Reference*
- *Host Access Class Library*
- *Configuration File Reference*

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

Quick Beginnings

The HTML form of *Quick Beginnings* contains the same information as the PDF version. The HTML files are installed automatically and can be accessed from the Help menus in the Session Manager and .WS session panels.

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.

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*

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 manufacturing refresh 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 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 problem analysis tools, refer to *Emulators User's Reference* for Personal Communications Version 6.0. This reference also provides 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.

Subscribing to Support News

To receive Personal Communications support news flashes, complete the following steps:

1. Go to the Personal Communications support Web site, at the following address: <http://www.ibm.com/software/network/pcomm/support>
2. Under **Personal Support**, click **My Support**. If you are already have an IBM Registration ID, you can sign in. If not, you must register.
3. After you sign in, select **Networking** from the product family list.
4. Select the products for which you would like to receive news flashes. Click **Save and Return**. Your support profile is listed on the next screen.
5. For your mail preference, you can choose to receive e-mail flashes, downloadable files, or both. Click **Submit**. You will receive a message indicating that your profile has been updated.
6. Click **Sign out** to end the session.

Support Assistant

The IBM Support Assistant enables you to easily resolve software questions. The Support Assistant provides the following components:

- **Search**
Enable search of the software information database.
- **Service**
Assists customers who choose to submit a PMR by providing access to the Electronic Service Request Web site.
- **Support Links**
A consolidated list of IBM web links, organized by brand and product.

Help desk personnel and Personal Communications administrators might want to install Support Assistant in order to better support end users. The Support Assistant can be downloaded from the following address: <http://www.ibm.com/software/support/isa/index.html>

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
- Emulator APIs such as Emulator High-Level Language Programming Interface (EHLLAPI), Host Access Class Library (HACL), and PCSAPI. For example, EHLLAPI is often used for automated operator applications which read host screens and enter keystrokes without direct user intervention. Refer to *Emulator Programming* and *Host Access Class Library* for details.

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.

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. Personal Communications supports the Enterprise Extender (EE) DLC.

What's New in Personal Communications Version 6.0

Personal Communications Version 6.0 is based on the popular Personal Communications Version 5.9. If you are familiar with Personal Communications Version 5.9, you might want to review the following new functions and enhancements.

Install and Packaging enhancement

Single DVD-ROM image

Personal Communications is bundled in DVD-ROM image, which contains all the supported language images.

Emulator Enhancements

FTP client

The Personal Communications FTP client implements the client functionality specified by File Transfer Protocol (FTP), which is the standard protocol for transferring files to and from remote machines running FTP servers either by secure or unsecure connection.

Maximum number of emulator sessions

The user can start maximum number of 52 emulator sessions per Windows user logon session.

Telnet Keepalive

Application-level Telnet keepalive processing detects the partner/host availability.

Bypass sign-on for TN5250 sessions

Allows the user to bypass iSeries login screen by sending a SHA1 password substitute. Refer to the *Administrator's Guide and Reference* for more information.

Quick connect for Telnet connections

You can connect a Telnet(3270/5250/ASCII) session quickly using the Quick Connect Bar by configuring only Host, Port and LU Name/Workstation ID. Refer to the *Administrator's Guide and Reference* for more information.

Copy As Image

Copies the marked area in the presentation space as a bitmap into the clipboard.

Scratch Pad

The Scratch Pad is a lightweight text editor normal edit operations, such as cut, copy and paste.

Find text in Presentation Space

Finds text in Presentation Space of a display session. The text found is highlighted on the screen. The search can be case sensitive or insensitive.

Windows Style selection

Allows users to make an uneven selection in Presentation Space.

Autocopy

Automatically copies the selected text to the clipboard.

Margin support for display session

Allows you to set the left and top margins for the print screen operation.

Command line option to start macro

You can start the macro by specifying the macro file name as parameter using /M switch. The macro will then be executed automatically after the session starts.

ISO Latin 9 (ISO 8859-15) character set support for ASCII (VT) sessions

Support of the ISO Latin 9 (ISO 8859-15) character set is now available for ASCII (VT) sessions.

JRE Upgrade

Java Runtime Environment (JRE) is been upgraded to JRE 1.6

Security Enhancements

Pass Through Host Certificate Validation

Allows the user to disable the default certificate validation process during the SSL handshake. Refer to the *Administrator's Guide and Reference* for more information.

Bidirectional Enhancements

Bidi enablement for HLLAPI Support

Enable the BIDI support to HLLAPI to send the BIDI data correctly based on the bidi attributes.

BIDI support for FTP client

Programming Enhancements

EditKey Intercept

This feature enables you to intercept Edit keys in addition to the existing all keystrokes, when EHLLAPI is been used. Refer to *Emulator Programming* for more information.

SetTextRect

The SetTextRect method sets characters to a rectangular area in the presentation space for the connection associated with the autECLPS object. Refer to *Host Access Class Library* for more information.

SNA Enhancements

zSeries Remote Operations Support for NetView

The Remote Operations Support (ROPS) feature enables commands issued by NetView RUNCMD to execute under the Windows command line interface of the remote machine whose CP name is specified in the RUNCMD. Refer to the *Administrator's Guide and Reference* for more information.

Synchronous SLI_CLOSE verb support

Now, administrator can force the SLI_CLOSE verb to return synchronously. Refer to *Configuration File Reference* and *Client/Server Communications Programming* for more information.

High Performance Routing (HPR) now includes additional configuration options

- ARB progressive mode operation (also known as ARB-P), which improves HPR flow control when dealing with response time variations on virtual and remote systems.
- A configurable path switch delay timer, which helps to avoid unnecessary path switches caused by transient delays in network traffic.

Refer to *Configuration File Reference* for more information.

APPC Cancel conversation verb support

The APPC interface includes a new verb, CANCEL_CONVERSATION, which allows you to deallocate a conversation even if other verbs are still outstanding. This verb operates in a similar way to the CPI-C Cancel_Conversation (cmcanc) call. The CANCEL_CONVERSATION verb support is also available on Communications Server for AIX, Linux and Windows. Refer to *Client/Server Communications Programming* for more information.

Connection Network Reachability Awareness support

This function allows the node to report to a VTAM Network Node server that a given connection network route has a failure. VTAM node will take that route out of the topology and new route can be calculated. Refer to the *Administrator's Guide and Reference* for more information.

DBCS Enhancement

Japanese JIS2004 Unicode support

The JIS2004 support can be enabled by selecting host code page "1390 Japan Katakana Extended(JIS2004)" and "1399 Japan Latin Extended(JIS2004)".

Functions that have been retired

- Twinax support
- IBM ISA/MCA/X.25 WAC adapter support
- S/3X interface support
- Coax, SNA DFT and non-SNA DT
- HOD Bean interface
- Product Update Tool
- Transfer File (AFTP)

Note: Manufacturing Refresh and Service Packs can be obtained directly from the IBM Software Internet Service Delivery site: <http://www.ibm.com/support/fixcentral/>.

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**.

Administrative and Problem Determination (PD) Aids



Certificate Migration

Use this icon to migrate security certificates from GSKit to Microsoft CryptoAPI (MSCAPI). Refer to *Administrator's Guide and Reference* for details about enabling and using session security.



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 clicking **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 6.0.



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**.

Utilities

The APING utility is available in U.S. English only.

Note

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iSeries Connection Configuration

Use this icon if you want to define connections to each iSeries, eServer i5, or System i5 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 *Administrator's Guide and 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 popup 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 *Installation Guide* 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 (iSeries only)

Use this icon to transfer data between a workstation and an iSeries, eServer i5, or System i5 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 can 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.



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.



FTP Client

Use this icon to start the Personal Communications FTP client application, which allows files and directories upload and download, and directory navigation of local and remote file systems running FTP servers.

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:

zSeries



iSeries



ASCII



zSeries Emulator Connections

Table 1. zSeries Emulator Connection Icons

Interface	Attachment
LAN 	LAN via IEEE 802.2 3270 via Communications Server for Windows Telnet3270 3270 via iSeries (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)
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
SDLC 	Synchronous Data Link Control 3270 via iSeries (passthrough) APPC 3270 via SDLC Dependent LU Requester (DLUR)
SNA/IP 	LU 0, 1, 2, 3 APPC 3270 LU 0,1,2,3 via DLUR
API 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 iSeries (passthrough) APPC 3270 Dependent LU Requester (DLUR)

iSeries Emulator Connections

Table 2. iSeries Emulator Connection Icons

Interface	Attachment
LAN 	LAN via IEEE 802.2 Telnet5250 over TCP/IP Telnet5250 over IPX/SPX VT over Telnet
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-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)

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 Windows XP. 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
- X.25
- OEM Deep adapter
- 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.

For more information about SNA Client/Server concepts, refer to *Administrator's Guide and Reference*.

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 *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 *Emulator User's Reference* for more information.

AnyNet

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

Refer to *Emulator User's Reference* for more basic information about AnyNet.

Refer to *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:

- Nondisruptive 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 sessions can 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 *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 installation image.

Chapter 2. Planning to Install Personal Communications

Personal Communications supports a wide range of workstations. 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 *Installation Guide*.

Workstation Hardware

Personal Communications supports workstations with the following hardware:

Table 4. Workstation Hardware Support

System units	The recommended system unit has an Intel Pentium® microprocessor and access to a DVD-ROM drive. A minimum of 180 MB of fixed drive space is required.
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	<ul style="list-style-type: none">• 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 <i>Emulator User's Reference</i> .
Communication adapters	LAN, SDLC, 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) or SDLC 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).

Recommended system memory

- Minimum RAM: 128 MB
- Recommended: 256 MB

Workstation Software

Personal Communications is supported for the following operating systems and platforms:

- Windows Vista Business, Enterprise and Ultimate editions (N, x86 and x64 editions)

Note: SNA support is not available when installed on the x64 editions.

For other Windows Vista considerations, see “Windows Vista Platform Support” on page 19.

- Windows XP (Professional, Home Edition, and Tablet PC Edition)
- Windows Server 2003
- Windows Terminal Server Version 4 and Windows Terminal Services for XP
- Citrix MetaFrame 1.8 for Windows Terminal Server 4.0. (Citrix is a third-party application for specific Windows platforms.)
- Citrix XenApp 5.0, Citrix Presentation Server 4.5, XenServer 5.5, XenDesktop 3.0
- IBM Communications Server for Windows V6.1 and V6.1.2 API Client
- Microsoft SNA Server Client
- IBM Communications Server for Linux V6.2 Client on Windows
- IBM Communications Server for Linux on zSeries V6.2 Client on Windows

Personal Communications communicates with the following types of servers or gateways:

- IBM Communications Server for Windows V6.1.2, V6.1.3 and V6.1.4
- Microsoft Host Integration Server 2006

Host Requirements

Refer to *Emulator User's Reference* for information about software and hardware requirements for host systems.

For all supported Windows operating systems, Java Runtime Environment 1.4.2 is installed.

Windows x64 Platform Support

Personal Communications provides non-SNA platform support for Windows XP Professional x64 Edition and Windows Server 2003 Standard x64 Edition and Enterprise x64 Edition.

The x64-based versions of Microsoft Windows Server 2003 and Microsoft Windows XP Professional x64 Edition are optimized to run native 64-bit programs, but do not support 32-bit drivers or 16-bit applications.

For these platforms, Personal Communications does not install the following features and libraries.

- IBM SNA protocols
- DOS EHLLAPI
- 16-bit API support:
 - Standard EHLLAPI 16-bit interface

- WinHLLAPI 16-bit interface
- PCSAPI 16-bit interface
- SRPI 16-bit interface

Windows Vista Platform Support

Limitations on Vista platforms

The following limitations apply for Vista systems:

- IPX/SPX connectivity option is not provided.
- DOS Mode EHLLAPI support is not provided.

Considerations for the Vista platform

The User Access Control (UAC) feature introduced in the Windows Vista operating system restricts the ability to write to the Program Files directory and subdirectories.

If you require the ability to modify and save a session's configuration (session profiles), it is recommended that you select either the User's application data folder or the All Users common application data folder, when installing Personal Communications. Storing of application data in the Classic private directory is restricted by the operating system. See the *Installation Guide* for details about the Application Data location installation options.

Migrating from a previous version of Personal Communications on Windows Vista

Migrating from a previous version of Personal Communications on the Windows Vista platform is not supported.

In-place operating system migration

Migrations from Windows XP to Windows Vista require that you remove versions of Personal Communications prior to 5.9.1 before upgrading the operating system.

Windows Vista Aero limitation

If the Windows Vista Aero color scheme is enabled, it might become disabled when the IBM Key Management utility is running. This issue is under investigation and might be resolved in a future service release.

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

Table 5. 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

Table 5. Application Data File Types (continued)

User Class		System Class	
.ini	Session Size and Location	.trc	Unformatted Trace
.pmp	Popup Keypad Configuration	.tlg	Formatted Trace
.kmp	Keyboard Configuration	.cfg	FTP Client Configuration
.srl	File Transfer List	.pub	Client/Host public key
.ndc	iSeries Connection Configuration	.dat	FTP Client data file
.upr	iSeries User Profile		
.tto	iSeries Data Transfer Request (Receive)		
.tfr	iSeries Data Transfer Request (Send)		
.bar	Toolbar Setup		
.mac	Macro		
.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) ³	System-Class Directory
Windows Server 2003, XP	C:\Documents and Settings\%USERNAME%\Application Data\IBM\Personal Communications	C:\Documents and Settings\All Users\Application Data\IBM\Personal Communications
Windows Vista, Windows 7, Windows server 2008	C:\Users\%USERNAME%\AppData\Roaming\IBM\Personal Communications	C:\ProgramData\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) ³	System-Class Directory
Windows Server 2003, XP	C:\Documents and Settings\All Users\Application Data\IBM\Personal Communications	C:\Documents and Settings\All Users\Application Data\IBM\Personal Communications
Windows Vista, Windows 7, Windows server 2008	C:\ProgramData\IBM\Personal Communications	C:\ProgramData\IBM\Personal Communications

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, 3}	System-Class Directory
Windows Server 2003, Windows XP, Windows Vista, Windows 7 & Windows Server 2008	C:\Program Files\IBM\Personal Communications\Private	C:\Program Files\IBM\Personal Communications\Private

¹If 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.

²For the classic Private directory locations, C:\Program Files\IBM\Personal Communications is the drive where Personal Communications is installed.

³The FTP Client configuration files are stored in the profile path mentioned the above, under the **FTP** folder.

Note: For installations on Windows x64 platforms, the directory path Program Files is replaced by Program Files (x86).

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 for connection to an SNA host, 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 iSeries, eServer i5, or System i5

To connect to an iSeries, eServer i5, or System i5, specific configuration information in the workstation profile must correspond to the information specified at the iSeries, eServer i5, or System i5 system. Refer to the iSeries, eServer i5, or System i5 configuration examples in *Emulator User's Reference* for more information about creating display, line, and controller descriptions on the iSeries, eServer i5, or System i5 system.

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

Creating a Configuration

To create a new session, use the following procedure:

1. From the Start menu, click **Programs** → **IBM Personal Communications** → **Start or Configure Sessions**.
2. From the Session Manager dialog, click **New Session**.
The Customize Communication window appears.
3. Select the type of host from the **Type of Host** drop-down list box.
4. Select the interface you will use from the **Interface** drop-down list box.
5. Select the attachment type you want to use from the **Attachment** drop-down list box.
6. Click **Session Parameters** to modify the session type (display or printer), host code page, and display/graphics options.
The Session Parameters – 3270, 5250, or ASCII – Host window appears (depending on the host you selected in step 3). Click **OK**.
7. Click **Link Parameters**.

If you selected an SNA attachment, you will be prompted to configure 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) or Transport Security Layer (TLS), then click the **Security Setup** tab. Refer to *Administrator's Guide and Reference* for details on configuring session security.

8. Click the **Host Definition** tab to configure the **Connection Options**.
 - Select **Auto-reconnect** to reestablish an interrupted connection.
 - The **Connection Timeout** value tells Personal Communications how long it should wait for connection to the host.
 - The **Try connecting to last configured host infinitely** option is enabled by default. Clear this box if you do not want Personal Communications to automatically and indefinitely wait for acknowledgement for a connect request from the last correctly configured server/host.
 - Select **Telnet keep alive** to send Telnet Keep Alive commands to the host.
 - There are two keep alive mechanisms supported: NOP and TIMING-MARK. The Keep Alive Timeout value specifies the interval between the keep-alive requests in seconds. The range of values is 30 to 99999 seconds.
 - Select **Bypass signon using Kerberos principal** to enable Kerberos authentication. A ticket is generated and passed to the iSeries, eServer i5, or System i5 host during TN5250 negotiation. This option is only available for 5250 sessions.

Note: You must log into a Windows domain in order to use Kerberos authentication. Refer to the relevant Microsoft documentation for specific details. Refer to *Administrator's Guide and Reference* for details about express logon functions.

- Select **Bypass signon using Password substitute** to enable the user to bypass the iSeries login screen by sending a SHA1 password substitute.
9. To set up printer association, click the **Printer Association** tab and do the following:
 - a. Select **Associated Printer Session**.
 - b. Enter the .WS file for the printer that is to be associated with the specific terminal. You can also click **Browse** to locate the file.

You can also set the following options:

- Select the **Start Associated Printer Minimized** check box, if preferred. This option is unavailable until an associated printer is selected.
 - Select the **Automatically close Associated Printer Session with this session** check box, if preferred. This option is unavailable until an associated printer is selected.
 - Select **Associated device name** to associate the display session with any printer device that currently exists on an iSeries, eServer i5, or System i5 host. This option is only available for 5250 sessions.
10. After configuring the session options, click **OK** in the Telnet tab panel.
 11. 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 28.

Note: If you have a user profile that was created by a previous version of Personal Communications, auto-logon may not work, when connecting to an iSeries, eServer i5, or System i5 host over an SNA connection. In this case, you must recreate. Select **Configure User Profile** in the **Session Parameters – 5250 Host** window.

Creating an FTP configuration

1. Open the FTP client from Start Menu by clicking **Start -> IBM Personal Communications -> Utilities -> FTP Client**.
2. Click **Communication -> Configuration** from the menu.
3. Choose the options in the **Connect** tab.
 - Enter the host name or IP address of the FTP server.
 - Set the required options from the **Connection** group box if the default values are to be changed.
4. Click the **Logon** tab.
 - Enter the user name and password.
 - Enter the Remote/Local Home Directory values so that once the connection is established, the client will list these directories you specified.
5. Click the **File Transfer** tab and select the appropriate choice for the Transfer mode from the drop-down list. Browse and select a Transfer List File if any.
6. Click the **SSL** tab to specify the security parameters for Secure FTP. SSL is optional and not enabled by default.
 - Check **Enable Security** to enable the SSL security.
 - Select the Security provider for the connection.
 - Enter the Channel Security parameters for the connection.
 - Select the Client Authentication method from the two options.
7. Click the **Runtime Preferences** tab.
 - Enter the action to be taken if target file exists during a file transfer.
 - Startup Commands enables you to provide a comma-separated list of FTP Command(s) to be executed after a successful connection.
 - Pass Through Host Certificate Validation allows the FTP client to finish a successful handshake bypassing the server certificate validation.
8. Click **OK** to close the configuration dialog.
9. Connect to the host by clicking **Communication->Connect** or the **Connect** button.

Environment variables in workstation profile

In the .WS profile, you can specify environment variables for the paths of the following Personal Communications files:

- Bar files (.bar)
- Popup keypad files (.pmp)
- Mouse customization files (.mmp)
- Keyboard map files (.kmp)

The syntax is as follows:

```
[Toolbar]
BarFile=C:\%USERDIR%\disp.bar
[Poppad]
DefaultPoppad=C:\%PROFILEDIR%\test.pmp
[Mouse]
DefaultMouse=%PCOMMPROFILE%\vtpf.mmp
[Keyboard]
DefaultKeyboard=C:\%USERFOLDER%\UserMap.kmp
```

In the above examples, USERDIR, PROFILEDIR, PCOMMPROFILE, and USERFOLDER are environment variables that you specify. See the following example:

```
USERDIR = profile\toolbarfiles
```

Saving Configuration Information

This section describes how to save configuration information. The SNA node, emulator workstation profile, and FTP Client configuration information is stored in a .ACG, .WS, and .CFG file respectively.

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, use the following procedure:

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 making it 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 have 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, use the following procedure:

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.

Saving an FTP Client Configuration

You can save the FTP Client configuration in two ways:

- When exiting the FTP Client after you create or change a configuration in the FTP Client Session Configuration panel, you are prompted to select whether to save changes, exit, or continue to work in the application. If you select to save changes, type the file name and click **Save**. The default file type is .CFG and the default directory is the application data directory specified during installation.
- You can save configuration changes by selecting **File->Save** or **File->Save As**.

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 ways:

- Using the emulator SNA configuration wizard
- Using the SNA Node Configuration utility
- Editing the configuration file with an ASCII editor

Note: To change advanced configuration options or to specify a different default configuration, you should use the SNA Node Configuration program, which provides more configuration options than the emulator wizard. If you manually edit the configuration files, it is highly recommended that you use the SNA Node Configuration Verification utility, before using the file for the first time.

Using the Emulator Configuration

To change an SNA configuration, use the following procedure:

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 *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, use the following procedure:

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 3 on page 25.

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 deselected **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 *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**.

Configuring for Hindi

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 *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 *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. Select **DDE/EHLLAPI** and select **1256** 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.

For Arabic, to set up for Numeric Swapping or Symmetric Swapping, do the following:

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 only available for 3270 sessions. This function will not be selectable for iSeries, eServer i5, or System i5 sessions.

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.

Right-to-Left (RTL) Print Orientation

For 3270 Arabic printer sessions (code page 420), you can print a file in RTL orientation. Select right-to-left orientation in the **Printer Setup** dialog. You can then select the symmetric or numeric swapping options.

Page Setup for Arabic Printing

Using the Windows Printer Driver: For 5250 printer sessions, click the **Advanced Options** tab in the Page Setup dialog. Set the **Printer Font Code Page** to **1008**.

For 3270 sessions, click the **Text** tab in the Page Setup dialog. Set the **Font** to **Typing Arabic**.

Using Printer Definition Table (PDT) Files: For 5250 printer sessions, click the **Advanced Options** tab in the Page Setup dialog. Set the **Printer Font Code Page** to **864**.

Using Host Print Transform (5250 only): For 5250 printer sessions, click the **Advanced Options** tab in the Page Setup dialog. Set the **Printer Font Code Page** to **864**.

Lam-Alef Expansion

The bidirectional layout engine converts between visual and implicit representation of Arabic characters. The Lam-Alef ligature in visual representation is expanded to <Lam> and <Alef> characters in implicit representation. If there are insufficient blank spaces at the end of Arabic text (i.e., the beginning of the English field) into which the Lam-Alef can be expanded, characters at the end of the Arabic field are lost and replaced by the <SUB> control character.

To ensure a sufficient number of spaces at the beginning of the field, Personal Communications protects one space for each <Lam-Alef> character. An error message is returned if you try to enter a character in the protected space.

In the following example, entering one <Lam-Alef> character at the beginning of the Arabic field results in the protection of one space at the beginning of the English field.

Position	1	2	3	4	6
Character	None allowed (protected)	open	open	open	<Lam-Alef>

In this example, two <Lam-Alef> characters have been entered, so Personal Communications protects two spaces at the end of the Arabic field.

Position	1	2	3	4	5
Character	None allowed (protected)	None allowed (protected)	open	<Lam-Alef>	<Lam-Alef>

Notes:

1. If there are no more unprotected spaces available in a field and you try to enter any additional characters, you will receive an error message and the keyboard will be locked. Click **Reset** to unlock the keyboard.
2. For the Paste and Delete functions, if the leftmost space in the field (position 1 in the above examples) is not blank when the <Lam-Alef> character is entered, you will not be able to enter the <Lam-Alef> character and Personal Communications will return an invalid key error message.
3. This expansion feature is not supported for Windows Terminal Server.

You may enable this expansion protection feature from the **Edit → Preferences → Appearance → Display Setup** menu.

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).

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).

Note: When uploading a PC file to the host, if you specify a record length smaller than the PC line length, lines can wrap incorrectly at the host. To avoid this problem, you should upload the PC file with a record length greater than the maximum PC line length. You can then use a host editor (such as XEDIT) to split the lines.

You can set the file transfer parameters using the following procedure:

1. Click **Edit → Preferences → Transfer** in the session window.
2. Click the **General** tab.
3. Click **Bidi Options**.

You can modify the following options.

- For right-to-left **Host File Orientation**, select **Right to Left**. For left-to-right host file orientation, select **Left to Right**.
- For right-to-left **PC File Orientation** select **Right to Left**. For left-to-right PC file orientation, select **Left to Right**.

- <= : 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

‫

indicates CSD mode

- Isolated GHEIN

‫

indicates Base/Isolated Shaping Mode

- Initial GHEIN

‫

indicates Initial Shaping Mode (3270 Only)

- Middle GHEIN

‫

indicates Middle Shaping Mode (3270 Only)

- Final GHEIN

‫

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 Bidirectional 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 left-to-right or right-to-left Cursor Direction.

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**.

Configuring FTP client for Arabic or Hebrew

To configure the FTP client for Arabic, do the following:

1. Select **Configuration** from the Communications menu.
2. Click the **Bidirectional Options** tab.
3. Check the **Enable bidirectional conversion** box.
4. Select **Arabic** as the language.

Note: Selecting Arabic will enable the list of Arabic code pages to be added to the host and client code pages dropdowns.

5. For right-to-left Host File Orientation, select **Right to Left**. For left-to-right host file orientation, select **Left to Right**.
6. For right-to-left PC File Orientation, select **Right to Left**. For left-to-right PC file orientation, select **Left to Right**.
7. When transferring a file between host and PC using PC code page 1256 and host code page 420 for z/OS and iSeries, you can select the Visual PC file type to transfer the file in visual mode. Otherwise, use **Implicit** to transfer the file in logical mode. **Implicit** is the default setting.
8. When uploading (sending) an Arabic file to the host or downloading (receiving) an Arabic file from the host, select **LamAlef Transform**.
9. Select **Symmetric Swapping** to reset swappable characters. For example, in a right-to-left string, the (and) will be reversed.
10. For Numerals Shape, select the appropriate shape: **Nominal**, **National**, or **Contextual**.
11. Click the **File Transfer** tab.
12. Select **Binary** as the Transfer Mode.
13. Click **OK** in the Session Configuration panel.

To configure the FTP client for Hebrew, do the following:

1. Select **Configuration** from the Communications menu.
2. Click the **Bidirectional Options** tab.
3. Check the **Enable bidirectional conversion** box.
4. Select **Hebrew** as the language.

Note: Selecting Hebrew will enable the list of Hebrew code pages to be added to the host and client code pages dropdowns.

5. For right-to-left Host File Orientation, select **Right to Left**. For left-to-right host file orientation, select **Left to Right**.
6. For right-to-left PC File Orientation, select **Right to Left**. For left-to-right PC file orientation, select **Left to Right**.
7. When transferring a file between host and PC using PC code page 1255 and host code page 424 for z/OS and iSeries, you can select the Visual PC file type to transfer the file in visual mode. Otherwise, use **Implicit** to transfer the file in logical mode. **Implicit** is the default setting.

8. Select **Symmetric Swapping** to reset swappable characters. For example, in a right-to-left string, the (and) will be reversed.
9. For Numerals Shape, select the appropriate shape: **Nominal**, **National**, or **Contextual**.
10. Click the **File Transfer** tab.
11. Select **Binary** as the Transfer Mode.
12. Click **OK** in the Session Configuration panel.

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, see Chapter 3, “Configuring Sessions,” on page 25 to create a configuration.

Session Manager

Personal Communications 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 installation. See “Application Data” on page 19 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 one or more sessions 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 use the shortcut option whenever possible. Moving and copying will affect the location (and therefore the function) of the profile. Specifically, when you copy a profile to the desktop instead of creating a shortcut, you have actually created another profile. Any changes you make to the desktop profile will not be reflected in the original profile (and vice versa). Also, the desktop profile is located in the desktop folder (not in the application data folder) and will not appear in the Session Manager—the original version of the profile remains in the Session Manager.

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 have the standard .BCH extension and are located in the Application Data directory.

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.

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)

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 a previously 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, use the following procedure:

1. Start a DOS command prompt.
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.

Note: If multiple /p parameters are given, PCOMSTRT only uses the last one to start a profile (.WS file).

For a complete description of parameters, refer to *Administrator's Guide and Reference*.

Another method for invoking Personal Communications using a command is with the command for the PCSWS.EXE module (see "Command line options for PCSWS.EXE").

Starting Multiple Sessions

If you installed the Multiple Sessions utility, you can use the batch program PCSWS.EXE, 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.

Command line options for PCSWS.EXE

You can use the following options when creating or modifying a batch file.

- 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 81 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\LAN1.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 command in the batch file:

```
C:\Pcomm\PCSWS.EXE C:\AppData\LAN1.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.

- To start a macro after the session start, add the parameter **/M** to the command in the batch file:

```
C:\Pcomm\PCSWS.EXE C:\AppData\LAN1.WS /M=mymacro
```

where *C:\Pcomm* is the directory where you have Personal Communications installed, *C:\AppData* is the Application Data directory, LAN1.WS

is the profile, and

mymacro

is the Personal Communications macro/script file name.

If the specified macro/script does not exist, there will be a pop up with "PCSKBD400- The file: <macro name> is not a Personal Communications macro/script-file."

Notes:

1. 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.
2. Several parameters can be specified for controlling the particular characteristics for starting sessions; the switch values are designated by a single character.

Creating a Batch File

To create a batch file, use the following procedure:

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 **IBM Personal Communications → Utilities → Multiple Sessions** program.

The Create/Modify Batch File panel appears.

2. There are several 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.
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 four workstation profiles located in the Application Data directory, and then runs **MYAPP.EXE**.

```
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 Maximum session windows, which is configured in the User Preference 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:

- Right-click on the icon in the Session Manager and choose **Modify**.
You can also use the following procedure:
 1. Start the **Multiple Sessions** Utility from the Start menu. The Create/Modify Batch File window appears.
 2. Select **Open** from the File menu. The Open Batch File window appears.
 3. Select the batch file you want to edit and then select **OK**. The contents of the batch file you selected appear in the edit area of the Create/Modify Batch File window.
- Edit the batch file. See step 2 on page 45 for more details.
- 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 46.
- Exit the Create/Modify window.

Starting Multiple Sessions without a Batch File

To start multiple sessions without a batch file, use the following procedure:

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, use the following procedure:

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 *Emulator User's Reference*.

Note: Stopping a Telnet session automatically closes an associated printer session, if that option was selected when configuring the session. See "Printer Session Association" on page 53 for information on how to automatically close an associated printer session.

Option to suppress confirmation message for pcomstop

When invoking pcomstop.exe from the command line, the NCE option can be used to suppress the exit confirmation message, which is shown when one or all sessions.

Example:

```
PCOMSTOP /S=<session>|/ALL [/Q] [/C] [/NCE] [/?]
```

One of the following parameters must be specified:

- /S stops the session, while <session> is the letter of the session to be stopped
- /ALL stops all sessions

The following parameters are optional:

- /Q specifies quiet mode
- /C converts the output to Windows code page

Note: Note: This option is intended for use with the Tivoli-integration support for Personal Communications.

- `/NCE` (No Confirm on Exit) stops one or all sessions (as defined by `/S` or `/ALL`) without confirmation, even if the Confirm on Exit or Exit All options are set.
- `/?` displays help information

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 some of the choices in the emulator session **Actions**, **Window**, and **Edit** → **Preferences** → **Appearance** menus.

Accessibility

Personal Communications provides functionality with assistive technology such as screen readers. Following are some of the accessibility-related enhancements.

Sounds

Personal Communications supports the **ShowSounds** and **SoundsSentry** options available in the Windows **Control Panel** → **Accessibility Options** → **Sound** dialog. The **ShowSounds** option displays a string representing the event that generated a sound in the status bar.

To mute all of the sounds generated by Personal Communications, select the **Mute** option in the **Edit** → **Preferences** → **Appearance** → **Display Setup** → **Sound** panel.

Screen Reader Assist

Users can configure a toggle key to enable Personal Communications to replace blank and null characters in the input field with another character. This option enables screen readers to report the length of the field to visually impaired users. Data sent to and from the host is not changed—only the screen display and the screen reader's voicing of the display are affected. By default, this function is not enabled.

For 3270 and VT emulators, the default padding character is a blank. For 5250, the default replacement character is an underscore. You can choose another character if you prefer.

During the emulation session, you can turn the screen reader assist on or off, as needed. To map the screen reader toggle to a key, click **Edit** → **Preferences** → **Keyboard**. Click **Customize** to access the keyboard setup dialog. Refer to the online help for a complete list of available keyboard functions.

Expanded OIA

For an accessible version of the Operator Information Area (bottom line of the session), you can display the expanded OIA window. Click **View** → **Expanded OIA** from the session menu bar. You can also select **Show Expanded OIA** from the session's system menu. You can change the number of lines displayed in the expanded OIA in the **Edit** → **Preferences** → **Appearance** → **Window Setup** dialog.

To set focus to the expanded OIA so that a screen reader can read the values, you need to map a key to the function **OIA: Toggle focus to/from Expanded OIA**. This key enables you to toggle focus back and forth between the session window and the expanded OIA window. When you set focus to the expanded OIA window with a key, the focus in the expanded OIA is always set to the first line. When you return to the session window, the cursor should be where it was before you went

into the expanded OIA window. Refer to the online help in the **Edit → Preferences → Keyboard → Customize** dialog, for more information about custom key mapping.

Popup Keypad

Even though most users use the popup keypad with a mouse, it is possible to customize and use the poppads with the keyboard alone. To display (execute) a poppad without a mouse, you must map a few keys in the **Edit → Preferences → Keyboard → Customize** dialog.

The **Display Poppad** function shows the last poppad and puts keyboard focus on it. The functions **Display Poppad Pad 1**, **Display Poppad Pad 2**, **Display Poppad Pad 3**, and **Display Poppad Pad 4** display a specific poppad and put keyboard focus on that pad. You can execute the button with current focus by pressing the space bar or the Enter key.

If you are using a sticky poppad, the poppad window remains open until you close it. A regular poppad exits when you push one of the buttons. To get focus to a sticky pad without a mouse, you must map the **Set Focus to Poppad** function to a key—this sets focus to the sticky poppad from the session window. Because you must use the Ctrl-Tab key combination to get focus from the sticky poppad back to the session, mapping the **Set Focus to Poppad** function to the Ctrl-Tab key combination is not advisable.

Quick Connect

You can connect a Telnet (3270/5250/ASCII) session quickly using the Quick Connect bar by configuring only Host, Port and LU Name (3270)/Workstation Id (5250). The LU Name and Workstation ID are optional.

The Quick Connect bar is enabled only for Telnet sessions (both display and Printer). For non-Telnet Sessions, the Quick Connect bar does not appear.

While using the Quick Connect bar, the other session parameters are taken from the active session, if any. If no session is active, then all session parameters will be of default.

You can activate or deactivate the Quick Connect bar by clicking **View -> Quick Connect Bar** in the session window menu.

Power Management

Personal Communications complies with Microsoft Windows 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 XP and later versions.

Connected State

When Personal Communications is in the connected state and Windows XP or later operating system indicates that the user is available for interaction, Personal Communications prompts the user to grant permission to sleep.

You can specify a setting in the User Preference Manager that allows the system to standby or hibernate without prompting. In default mode (unchecked), if there is at least one connected session, you will be prompted to allow the system to

standby or hibernate. If there are no connected sessions, Personal Communications allows the system to standby or hibernate without prompting. See “Standby/Hibernate” on page 95.

Non-Connected State

When Personal Communications is not in the connected state, Windows XP and later operating systems might automatically sleep, without prompting the user for permission.

Critical Sleep

When Windows XP and later operating system’s resumes after an emergency suspension, Personal Communications might display and log a warning message.

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

Printer Session Association

When you configure a 3270 or 5250 display session, Personal Communications lets you specify an associated printer session. This function is implemented on Communications Server, iSeries, eServer i5, or System i5 TN5250, and zSeries TN3270E servers. This is unique to Telnet, and is not available in the SNA environment.

Advantages of this association are as follows:

- If sessions are associated, the person who configures the client workstation does not have to know any details about the printer session.
- When you start the display session, the associated printer session is started automatically.

When configuring a session, if you want the server to associate a printer with the session, do the following:

1. Click the **Printer Association** tab.
2. Select **Associated Printer Session**.
3. Enter the .WS file for the printer that is to be associated with the session. You can also click **Browse** to locate the file.

You can also set the following options:

- Select the **Start Associated Printer Minimized** check box, if preferred. This option is unavailable until an associated printer is selected.
- Select the **Automatically close Associated Printer Session with this session** check box, if preferred. This option is unavailable until an associated printer is selected.
- Select **Associated device name** to associate the display session with any printer device that currently exists on an iSeries, eServer i5, or System i5 host. This option is only available for 5250 sessions.

Notes:

1. Stopping a Telnet session automatically closes an associated printer session, if that option was selected when configuring the session.
2. If a 5250 printer session is associated with multiple 5250 display sessions, then the printer session ends only when the last associated display session ends.

- For a 5250 session, if the host name in the selected printer session profile differs from the values in the display session profile, then the display session profile host name is used instead. The display session values are not saved to the printer session profile.

Print Session Setup (3270 and 5250)

The Print Session Setup dialog enables you to customize the display options for a 3270 or 5250 printer session. This dialog can be accessed by clicking **Edit** → **Preferences** → **Appearance** → **Print Session Setup**. You can also add the Print Session Setup dialog to the session tool bar.

The following customization options are available.

Show Text Information

You can specify the title and other information to be shown in the printer session display window. If this option is not selected, no text information about the session is displayed.

Configuration Details

The following items can be included in the text information.

Connection Details

The following display options are based on the session status and the settings of the **Session Parameters** → **Advanced** and **Customize Communications** dialog.

Connection Status	If this item is selected, Connected is displayed if the session is in connected state. Disconnected is displayed if the session is not connected.
Host Name	Host name or the IP address for the connection.
Host Type	Host system type to which the session is connected.
Interface	Interface type selected in the Customize Communication dialog.
Attachment	Physical and logical connection selected for the session.
WS Profile	If the session is started from a saved workstation (.WS) profile, the name of the profile is displayed. The field is blank if it is a newly configured session.
Host Codepage	Code page selected in the host Session Parameters configuration panel.

Host Device Details

The following display options are based on the selected device and the settings of the **Session Parameters – 5250 Host > Advanced** dialog. These options are available for 5250 sessions only.

Device Status	If this item is selected, Started is displayed if the device is in ready state. Stopped is displayed if the device is not in Ready state.
Workstation ID	Device name for the session.
Message Queue/Library	Message Queue and Message Library specified in the Session Parameters → Advanced dialog
Host Font	Host font selected in the Session Parameters → Advanced dialog
HPT	If this item is selected, TRUE is displayed if Host Print Transform is enabled. FALSE is displayed if HPT is not enabled.

HPT Printer Model	If this item is selected, the Printer Model is displayed. If HPT is not enabled, Not configured is displayed.
HPT Drawer 1	If this item is selected, the HPT Drawer 1 paper size is displayed. If HPT is not enabled, Not configured is displayed.
HPT Drawer 2	If this item is selected, the HPT Drawer 2 paper size is displayed. If HPT is not enabled, Not configured is displayed.
Envelope Hopper	If this item is selected, the Envelope Hopper is displayed. If HPT is not enabled, Not configured is displayed.
Customization Object/Library	If this item is selected, the Customizing Object and Customizing Library are displayed. If HPT is not enabled, Not configured is displayed.
ASCII code page 899	If this item is selected, TRUE or FALSE is displayed, depending on whether ASCII Code Page 899 is enabled. If HPT is not enabled, Not configured is displayed.

Printer Details

The following display options are based on the settings of the **Printer Setup** dialog.

Printer	Printer name that is currently selected for the session.
PDT File	Printer Definition File currently used for printing.
RTL Orientation (Bidirectional 3270 sessions only)	If this item is selected, TRUE is displayed in the session window if host file right-to-left orientation is selected.
Symmetric Swapping (Arabic 3270 sessions only)	If this item is selected, TRUE is displayed in the session window if Symmetric Swapping is enabled.
Numeric Swapping (Arabic 3270 sessions only)	If this item is selected, TRUE is displayed in the session window if Numeric Swapping is enabled.

- **Page Setup Details**

The following display options are based on the workstation profile and the **Page Setup** dialog. For 3270 sessions, the listed options are on the **Text** and **Text Options** tabs. For 5250 sessions, the listed options are on the **Orientation** and **Advanced Options** tabs.

CPI/LPI (3270 sessions only)	Number of characters printed per inch and number of lines per inch.
MPL/MPP (3270 sessions only)	Maximum print line and maximum print position.
Font Name (3270 sessions only)	Device font of the printer device driver.

Margin – Left/Top	Left and top margin values.
Drawer1	Drawer 1 orientation.
Drawer2	Drawer 2 orientation.
Bestfit Scaling	If this item is selected, TRUE is displayed if Bestfit is enabled in the .WS profile. If Bestfit is not enabled, FALSE is displayed.
Suppress Null Lines (3270 sessions only)	If this item is selected, TRUE is displayed if Suppress Null Lines is enabled. If Suppress Null Lines is not enabled, FALSE is displayed.
Nulls as Spaces (3270 sessions only)	If this item is selected, TRUE is displayed if Nulls as Spaces is enabled. If Nulls as Spaces is not enabled, FALSE is displayed.
Ignore FF at First PP (3270 sessions only)	If this item is selected, TRUE is displayed if Ignore FF at First PP is enabled. If Ignore FF at First PP is not enabled, FALSE is displayed.
FF Takes PP if followed by Data (3270 sessions only)	If this item is selected, TRUE is displayed if FF Takes PP if followed by Data is enabled. If FF Takes PP if followed by Data is not enabled, FALSE is displayed.
CR at Max PP + 1 (3270 sessions only)	If this item is selected, TRUE is displayed if CR at Max PP + 1 is enabled. If CR at Max PP + 1 is not enabled, FALSE is displayed.
NL at Max PP + 1 (3270 sessions only)	If this item is selected, TRUE is displayed if NL at Max PP + 1 is enabled. If NL at Max PP + 1 is not enabled, FALSE is displayed.
FF - Any Position / Column 1 (3270 sessions only)	If this item is selected, TRUE is displayed if FF - Any Position / Column 1 is enabled. If FF - Any Position / Column 1 is not enabled, FALSE is displayed.
Ignore color while printing (3270 & VT sessions only)	Select this option to ignore the colors in PS and print in black & white.
Replace FF by LF (3270 and 5250 sessions only)	Select this option to replace a form feed by the number of lines entered in the edit box.
Automatic Orientation	If this item is selected, TRUE is displayed if automatic page orientation is enabled. If automatic page orientation is not enabled, FALSE is displayed.
Printer Font Codepage	The printer font code page used for printing on the workstation.
No CR between Fields	If this item is selected, TRUE is displayed if No CR between Fields is enabled. If No CR between Fields is not enabled, FALSE is displayed.
Bold as Normal	If this item is selected, TRUE is displayed if Bold as Normal is enabled. If Bold as Normal is not enabled, FALSE is displayed.

Use Raster Fonts	If this item is selected, TRUE is displayed if Use Raster Fonts is enabled. If Use Raster Fonts is not enabled, FALSE is displayed.
------------------	---

Show Wallpaper

You can specify a bitmap file as a background in the session window. You can use the default graphic or another monochrome, 16-color, 256-color, or 24-bit file.

Print Status Dialog → Show Dialog

You can have a printer status dialog displayed along with the session window. This option is available only for 5250 sessions.

Print Status Dialog → Contain in Session Window

You can display a printer status dialog that is tied to the session window. When the session window is moved or minimized, the printer status dialog is moved with it. This option is available only for 5250 sessions.

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 the session **File** → **Printer Setup** menu.
- 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 *Emulator User's Reference*.

Print Screen Collection functions

Using the **Collect Screen** function, you can add a capture of all or part of the screen to a collection of captures. You can then print all the collected captures at the same time, using **Print Collection**.

To add the current screen (or part of the screen) to the collection, click **File** → **Print Screen Collection** → **Collect Screen**. To print all the collected screens, click **File** → **Print Screen Collection** → **Print Collection**.

All the collected screens can be deleted without printing by clicking **File** → **Print Screen Collection** → **Purge Collection**. An individual screen or part of the collection cannot be deleted.

The **File → Print Screen Collection → Print Collection on Exit** option ensures that the collected screens are printed before you close or disconnect the session. This option is enabled by default. To end the session without printing the collected screen, clear the Print Collection on Exit option. All the collected screens are then deleted when you close or disconnect the session.

Note: The Collect Screen feature works independently of the normal **Print Screen** function. You can still use Print Screen to print individual screens, while collecting multiple screens.

You can add the **Collect Screen** and **Print Collection** functions to the toolbar, a popup keypad, or a custom keyboard map. The settings in the Page Setup dialog are used (shared with the normal Print Screen function).

In PDT mode, there is an option available for printing more than one screen in a page. Refer to *Administrator's Guide and Reference* for more information.

Collecting Print Jobs (5250 Printer Session)

You can collect 5250 print jobs and print them as a single job or in a group. The collected print jobs are stored in a .SCS file.

You can set the following .WS profile keywords to specify the path and file name for the .SCS file.

```
[Printers]
SCSFile=<filename>.scs
SCSPath=<local path>
```

The functions associated with this feature are listed below. The functions can be mapped to the keyboard, popup keypad, mouse button, or toolbar button.

- **Collect Mode**

When Collect Mode has been started, print jobs that have been sent are saved in the .SCS file. They are not printed immediately.

- **Print Collection**

The print jobs that have been saved are sent to the printer as a single job.

- **Purge Collection**

The collected print jobs are deleted.

Refer to the online help for details about mapping the functions.

The CombineJobs profile keyword enables you to collect the jobs for printing, while maintaining them as individual jobs (instead of one job in the .SCS file). Specify the .WS keyword as follows:

```
[Printers]
CombineJobs=N
```

If you set CombineJobs to **N**, the Print Collection function sends the separate, collected jobs to the printer. While in Collect Mode, if the keyword is set to **Y** or is not specified, the print jobs are combined as a single job in the .SCS file.

Using the Windows Printer Driver

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

1. Click **File → Printer Setup** in 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 *Administrator's Guide and Reference* for more information about PDT files.

To use PDT files:

1. Click **File** → **Printer Setup** in 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), do the following:

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 allows use of Image Print Transform in 5250 print sessions, when using Host Print Transform. Refer to the most recent IBM iSeries, eServer i5, or System i5 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. You can also add a header or footer to a page.

For detailed Page Setup information and instructions, refer to *Emulator User's 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 the Personal Communications AICAPL font, using the Windows **Control Panel** → **Font** dialog.

ZipPrint (3270 Only)

Use ZipPrint to print PROFS or OfficeVision notes, calendars, OfficeVision 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, click **Edit** → **Preferences** → **API** 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. Click **Edit** → **Preferences** → **Transfer** in 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**.

Bidirectional Considerations

For Hebrew and Arabic sessions, Personal Communications supports the following ZipPrint functions.

- Print Screen
- Print CMS File
- Print XEDIT Workspace

For bidirectional sessions, the bidirectional-specific parameters for File Transfer also define the functionality of ZipPrint.

To disable the reversal of numerals if preceded by bidirectional characters, use the Typing Arabic font for Arabic ZipPrint sessions and Cumberland Hebrew font for Hebrew sessions.

Note: In order to use the Typing Arabic font for ZipPrint, you must specify code page 1008 in the File Transfer settings.

IBM 5586-H02 Printer (Japan only)

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

Japanese PDT printing support for Konica Minolta PCL 6 printer

To provide Japanese PDT printing support for Konica Minolta PCL 6 printers for both 3270 and 5250 sessions, use the KMPCL6.PDF and KMPCL6.PDT files.

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. Click **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.

Copy As Image

Copies the marked area as a bitmap into the clipboard. If no area is marked, Copy As Image captures the entire presentation space as bitmap.

Note: Undo functionality is not supported for Copy As Image.

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 Paste Link or Paste Special depends on the application program you are using.

Find Find text in Presentation Space of a display session. The text found is highlighted on screen. The search can be case sensitive or insensitive.

Send to Scratch Pad

Sends the selected contents of the Presentation Space into the Scratch Pad of the corresponding session.

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.

Autocopy

This option enables you to automatically copy the selected text to the clipboard. When an existing selected area is moved to another screen area, the text inside the new selected area is automatically copied to the clipboard.

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.

Classic Box Style

This option allows you to draw a normal box like 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.

Expand Trim Rectangle during drag

This option causes the trim rectangle to step to character boundaries while it is being sized.

Use solid Trim Rectangle

This option changes the appearance of the trim rectangle. Instead of the standard outline boundary, the trim area appears as a solid box.

Windows Style

This option allows you to make uneven selection in the PS. When this option is selected, solid Trim rectangles without sizing handles are drawn by default.

Note: Undo functionality under the Edit menu is disabled for this functionality.

Editing by Linking to Windows Application Programs

Linking to Windows application programs supporting **Paste Link** lets you paste session-window data to the windows of those application programs. You can run **Copy Link** when DDE/EHLLAPI is usable.

Confirming the DDE/EHLLAPI Settings

To check whether DDE/EHLLAPI is currently set to usable status, do the following:

1. Click **Edit** → **Preferences** → **API**.
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 Copy Link and Paste Link

1. Mark the session window area for which **Copy Link** should be issued.
2. Select **Copy Link** from the Edit menu.
If the session window is already linked with an application program, **Copy Link** 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 **Copy Link**.
3. Start the Windows application program for the window to which an area should be copied.

4. Specify the location for which **Paste Link** should be run.
5. Issue **Paste Link** or **Paste Special** 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.

Copy Link 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 Copy Link and Paste Link functions.

Copying Table Data to a Spreadsheet

You can use the **Cut**, **Copy**, **Copy Link**, or **Copy Append** 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 **Paste Link** 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 6. 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 7. 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.

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, a 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 the .INI file, the IME would not be invoked automatically. User needs to invoke IME by pressing system keys.

DOS GAIJI Files (Japan 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 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 iSeries, eServer i5, or System i5 (Japan only)

You can capture the user-defined font (GAIJI) defined on iSeries, eServer i5, or System i5 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 iSeries, eServer i5, or System i5. 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 XP

- 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 iSeries, eServer i5, or System i5.
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 iSeries, eServer i5, or System i5 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.

Setting Up the Appearance of a Session Window

You can use the following functions to define the appearance of your session window. These options are in the **Edit → Preferences → Appearance** menu.

Display Setup

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

Color Mapping

Set the colors used in session windows.

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

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

Window Setup

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

Sounds

Personal Communications enables customization of program sounds through the Windows Control Panel. You can configure specific program sounds using sound files included with the Personal Communications product.

A **Mute** function can be used to silence all program sounds. This option is available from the **Edit → Preferences → Appearance → Display Setup → Sound** dialog.

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, see “Showing or Hiding the Menu Bar, Status Bar, or Tool Bar.”

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

You can show or hide the menu bar, status bar, or tool bar. If the menu bar is displayed, enable or disable status bar or tool bar from the session **View** menu. You can also do the following:

- 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.
 - **Show Expanded OIA** appears when the expanded OIA is not shown.
 - **Hide Expanded OIA** appears when the expanded OIA is shown.
 - **Hide Quick Connect Bar** appears when the Quick Connect bar is shown.
 - **Show Quick Connect Bar** appears when the Quick Connect bar is not shown.
- To hide the menu bar, status bar, tool bar, or expanded OIA, select **Hide Menu Bar**, **Hide Status Bar**, **Hide Tool Bar**, **Hide Expanded OIA**, or **Hide Quick Connect Bar**.
- To show either the menu bar, status bar, tool bar, or expanded OIA, select **Show Menu Bar**, **Show Status Bar**, **Show Tool Bar**, **Show Expanded OIA**, or **Show Quick Connect Bar**.

Window Setup

For some Windows operating systems, if you clear the **Maximized Style → With Title Bar** option in the session **Edit → Preferences → Window Setup** dialog, then the **Minimize All Windows** option on the Microsoft Windows taskbar may not have any effect. To minimize the window, press Alt-Space and click **Minimize**.

Setting Up and Using the Assist Functions

The auxiliary functions described in this chapter let you operate the system more efficiently. **Keyboard/Macro/Script Function** can be customized from the **Actions** menu. The other functions can be customized from the **Edit** menu.

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 75.

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 *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:

- a. Point-and-select (connect to Web site using URL)
- b. PFnn, FPnn, Fnn, nn
- c. Point-and-select (run the macro)
- d. Point-and-select (enter the selected string)
- e. 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 can use the keyboard map files provided

with Personal Communications. Refer to *Emulator User's Reference* for more information about keyboard mapping and functions.

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 alphabetic are allowed):

@ABCDEFGHIJKLMNQRSTUUVWXYZ[\]^_

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-]	

Character pair	Control	Notes
#^	Control-^	
#_	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.

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 online help pages.

Using a Macro or Script

You can use a macro or script in various ways. Table 8 lists examples of how you can set up and then use macros and scripts.

Table 8. 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.

Notes:

1. Macros that are converted to XML are intended for use in Host On-Demand and will not function in Personal Communications emulation sessions. Use the HOD Macro Manager to import a converted Personal Communications macro into HOD. These converted macros will not appear in the list of available Personal Communications macros.
2. Arabic code page conversion is performed when an XML/VBScript macro is created, so that the Arabic characters in the macro are displayed properly. When recording the macro, the code page conversion is as follows:
 - 3270/5250 sessions: 1008 (Arabic font code page) to 1256
 - VT sessions: 1089 to 1256When playing the macro, the code page conversion is as follows:
 - 3270/5250 sessions: 1256 to 1008
 - VT sessions: 1256 to 1089

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.

Configuring a Macro or Script to Autostart

To configure a macro or script to autostart, do the following:

1. Click **Edit** → **Preferences** → **Macro/Script**.
The Macro/Script Setup window appears.
2. Set a macro or script to autostart when your workstation starts.
3. Refer to the online help for detailed instructions and then select **OK** after completing your setup.

Auto-start macro support: To specify which macro should be started automatically after start of a session, add the PCSWS option `/M=<mymacro>`, where `<mymacro>` is the name of the Personal Communications macro or script file. See the following example:

```
C:\Pcomm\PCSWS.EXE C:\AppData\LAN1.WS /M=mymacro
```

If the specified macro or script does not exist, the following error message will be returned:

```
PCSKBD400-
```

The file: <macro name> is not a Personal Communications macro/script-file

Configuring a Java Applet to Autostart

To run a Java applet automatically, you can add the function **Run Applet** to a macro. You can add this function to an autostart macro, so that an applet can be run at session startup.

1. Click **Edit** → **Preferences** → **Macro/Script**.
The Macro/Script Setup window appears.
2. Select **Run Applet** from the Function drop-down list and type the name of the class.

Refer to the online help for syntax and detailed instructions.

Note: The applet class specified must exist in the same directory path as the .WS file in which the macro is included.

Recording Macros or Scripts

To start macro or script recording, use the following procedure:

1. Click **Start Recording Macro** from the **Actions** menu.
2. Type the macro or VBScript name.
3. Select the record format.
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.
4. Configure the other options and click **OK**.

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 cancel macro or script recording, click **Actions** → **Cancel Recording Macro**. The recording operation is canceled, and the macro or script is not saved.

To pause macro or script recording, click **Actions → Pause Recording Macro**. The recording operation stops. To restart recording, click **Resume Recording Macro**.

To end macro or script recording, click **Actions → Stop Recording Macro**. Recording ends and the macro is saved in the specified file.

Playing Macros and Scripts

To play a macro or script, click **Actions → Start Playing Macro/Script**, select the macro or script, and click **OK**. The selected macro starts to play.

To stop playing a macro or script, click **Actions → Quit Playing Macro/Script**. The macro or script stops playing.

Note: Personal Communications macro files more than 32KB in size cannot be played in the Personal Communications emulator session. If you want to play a macro file that is greater than 32KB, you will have to break the macro into multiple files.

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.

ThisMacroName support

The `ThisMacroName` property is used to enable a running script to obtain the name of the macro file that is running. This is useful when writing a script that will be using the name of the macro file.

See the following example of `ThisMacroName`:

```
[PCOMM SCRIPT HEADER]
LANGUAGE=VBSCRIPT
DESCRIPTION=Example of usage of property ThisMacroName
[PCOMM SCRIPT SOURCE]
OPTION EXPLICIT
Dim sName, sHandle

REM App Main
Main

sub Main()
    'Initialize the session
    autECLConnMgr.autECLConnList.Refresh
    sName = autECLConnMgr.autECLConnList(1).Name
    sHandle = autECLConnMgr.autECLConnList(1).Handle

    'Connect to the current session
    autECLSession.SetConnectionByName(ThisSessionName)
    sName = autECLSession.Name
    sHandle = autECLSession.Handle

    MsgBox("The current session name :")
    MsgBox(ThisSessionName)
    MsgBox("The macro name is :")
    'Should pop up correct macro file name in the message box
    MsgBox(ThisMacroName)
end sub
```

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. Refer to *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 *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 user ID and password have been replaced by Express Logon Feature (ELF) tags. The procedure is as follows:

1. Open the macro file containing the recorded keystrokes by clicking **Edit** → **Preferences** → **Macro/Script**.
2. Select the macro file you just recorded and click **Customize**.
3. Verify that the user ID has been replaced with two tags: the ELF Application ID and the ELF user ID 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 user ID 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 mouse and 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 (VT only)

Tab Setup allows you to define tab stops for your VT sessions.

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

Detect and Repair

You can use the **Help → Detect and Repair** function to check the Personal Communications product integrity. The Detect and Repair operation performs a check on the installed Personal Communications files to determine whether the installation has been damaged. A subsequent repair is performed, if necessary.

Note: You should stop all active sessions or SNA nodes before starting the Detect and Repair function.

Check **Restore my shortcuts** if you want your original shortcuts restored. If you have modified your shortcuts since the original Personal Communications installation, you might want to keep your shortcuts intact—in that case, do not choose this option.

In order to use the Detect and Repair function, you must be authorized in the System Policy. You might be prompted to provide the original Personal Communications installation source.

Personal Communications Detect and Repair can be invoked from the Session Manager or from an emulator session window. Windows Installer repair of the Personal Communications product is invoked from the Windows Add/Remove Programs function. Note the following differences in the operations.

Personal Communications Detect and Repair performs the following operations:

- Reinstalls a file if it is missing or corrupt, or if it is an older version.
- Rewrites all registry settings for the application in the LOCAL_MACHINE section of the registry.
- Rewrites all registry settings for the application in the CURRENT_USER section of the registry.
- Reinstalls all shortcuts (optional).

Alternatively, Windows Installer performs the following operations:

- Reinstalls a file if it is missing, or if it is an older version. Windows Installer does not check files for corruption.
- Rewrites all registry settings for the application in the LOCAL_MACHINE section of the registry.
- Rewrites all registry settings for the application in the CURRENT_USER section of the registry.
- Reinstalls all shortcuts. This function is not optional in Windows Installer.

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 iSeries, eServer i5, or System i5 to your workstation, or from your workstation to the iSeries, eServer i5, or System i5 (record-level data transfer).

Text Assist (SBCS only)

Allows you to create or edit a document or short messages.

iSeries Connection Configuration

Define connections to each iSeries, eServer i5, or System i5 host that will use the data transfer function.

User Preferences

Configuration of certain advanced 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=0000000000000004
  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=RBNAM        * <---- 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=USIBMM.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:

- A menu bar command, such as **File**, **Edit**, or **Communication**
- A pulldown menu command, such as, **New**, **Open...**, **Color Mapping**, **Configure**
- 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 reconfigure the settings to account for the new menu structure in Version 6.0.

Multiple Sessions

The Personal Communications Multiple Sessions Batch Program enables 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 60.

File Transfer Considerations

ZipPrint uses the Personal Communications file transfer function to print VM/CMS notes and files. In order for this function to work correctly, you should use the VM/CMS host type for 3270 file transfer.

In the emulator session window, click **Edit** → **Preferences** → **Transfer**. On the **File Transfer Settings** → **General** tab, select **VM/CMS** from the **Host Type** drop-down list.

On slow communications lines, such as some IBM Global Network or Home3270 connections, or if you are using a large packet or block size, you may experience a file transfer timeout. If you do, you should increase the timeout delay. To change the timeout delay, do the following:

1. From the session menu, click **Edit** → **Preferences** → **Transfer**.
2. On the **General** tab, change the **File Transfer Timeout** to 150 seconds.

Convert Macro

The Convert Macro utility enables you to convert an existing Personal Communications Macro file to XML or a VBScript file.

Note: Macros that are converted to XML are intended for use in Host On-Demand and will not function in Personal Communications emulation sessions. Use

the HOD Macro Manager to import a converted Personal Communications macro into HOD. These converted macros will not appear in the list of available Personal Communications macros.

To use the conversion utility, click **IBM Personal Communications → Utilities → Convert Macro**.

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. Select **VBScript** or **XML** as the type of macro to which to convert.
3. Click **Convert**.
4. Enter a name for the new XML file or VBScript or accept the generated name. The extension will be added automatically.

Note: When saving a converted XML macro you can choose where you would like to save it. You should not change the location of the converted VBScript macros.

5. Click **Save**.
6. Repeat the procedure 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.

iSeries, eServer i5, or System i5 Requirements

Before you can use the PC Organizer, one of the following programs must have been installed on the iSeries, eServer i5, or System i5:

- i5/OS® or OS/400® V3 or later
- iSeries Access for Windows
- 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 iSeries, eServer i5, or System i5.
3. Enter the following command on the iSeries, eServer i5, or System i5 command line:

```
STRPC0 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 iSeries Access for Windows 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.

STRPCCMD_PAUSE Keyword

You can use the .WS profile keyword STRPCCMD_PAUSE to control the pause behavior after a command is issued using STRPCCMD. The keyword can take values Y (Yes) or N (No).

If the STRPCCMD_PAUSE feature is not enabled (value is N), PC5250 processes the STRPCCMD command in the following manner. This is the default behavior.

- If the given command is a DOS command, PC5250 spawns the DOS command. PC5250 does not issue a DOS PAUSE. It just waits for the DOS command to finish, immediately closes the DOS box, and then tells the iSeries, eServer i5, or System i5 host that it has finished.
- If the given command is a Windows application, PC5250 ignores the PAUSE option because there is no way to do a DOS PAUSE after a Windows application has finished running. Once the Windows application finishes, PC5250 tells the iSeries, eServer i5, or System i5 host that it has finished. PC5250 assumes that the application is finished when focus returns to the PC5250 session window. If the user does nothing, the Windows application will start, which gives it focus. Then, when the application finishes, the last window to have focus will get the focus back, which should be the PC5250 session window.

Note: This implementation has another effect: you can force PC5250 to tell the iSeries, eServer i5, or System i5 host that the STRPCCMD command is finished (even if it is not finished) just by clicking on the PC5250 session window.

If the STRPCCMD_PAUSE feature is enabled, PC5250 spawns the given STRPCCMD command (DOS command or Windows application). PC5250 waits for the command/application to complete before telling the iSeries, eServer i5, or System i5 host that it has finished.

Notes:

1. For DOS commands, there is no way to have **Press any key to continue...** appear in the DOS box or have PC5250 wait for the user to press a key before it tells the iSeries, eServer i5, or System i5 host that it is finished.
2. While waiting for the command/application to complete, the presentation space (display) is cleared to a blank state.

Disable STRPCCMD command support

You can disable STRPCCMD command support by using the following . WS keyword:

```
[5250]  
Ignore_STRPCCMD=Y
```

If the keyword is set to N or is not specified, STRPCCMD will remain enabled.

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 iSeries 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 68.

Requirements

Before you can transfer data with Personal Communications:

- If you are using SNA connectivities, you must have an active iSeries, eServer i5, or System i5session.
- IBM PC Support/400 (5738-PC1) must be installed on your iSeries, eServer i5, or System i5, unless OS/400 Version 3 (or later) or i5/OS 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 iSeries, eServer i5, or System i5. You can transfer data to any of the following destinations:

- Existing members in an existing iSeries, eServer i5, or System i5 physical file
- New members in an existing iSeries, eServer i5, or System i5 physical file
- New members in a new iSeries, eServer i5, or System i5 physical file

Note: You cannot transfer data from a workstation file to an iSeries, eServer i5, or System i5 logical file.

Data receiving

Data is transferred from the iSeries, eServer i5, or System i5 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 iSeries, eServer i5, or System i5 file
- Part of an iSeries, eServer i5, or System i5 file
- Data combined from several iSeries, eServer i5, or System i5 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 *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 documentation 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.

iSeries, eServer i5, or System i5 Software Requirements

The iSeries, eServer i5, or System i5 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
- i5/OS

Text Assist Key Functions

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

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

iSeries Connection Configuration Utility

The iSeries Connection Configuration Utility is used to define connections to each iSeries, eServer i5, or System i5 host that will use the data transfer function. The connection definitions are saved in an .NDC file in ASCII format.

You can use this utility for either SNA or TCP/IP connections.

For more information on Data Transfer see "Data Transfer" on page 90.

To use the utility, click **Start** → **Programs** → **IBM Personal Communications** → **Utilities** → **iSeries Connection Configuration**; the resulting iSeries, eServer i5, or System i5 configuration screen has the following options:

Show IP Host Connections

Click this button to display and configure IP connections to the iSeries, eServer i5, or System i5 host.

Show SNA Hosts

Click this button to display and configure SNA connections to the iSeries, eServer i5, or System i5 host.

Add Click the type of connection (IP or SNA), and then click **Add**. Enter the **Host name** and **Alias** in the resulting dialog box.

Modify

Select a host name from the connection list, and then click **Modify** to edit the **Host name** and the **Alias** in the .NDC file.

Remove

Select a host name from the connection list, and click **Remove** to delete this connection definition from the .NDC file.

Note: When disabling a connection, if you want to preserve the connection definition but disable the connection, clear the checkbox next to the name in the connection list.

Select ACG File

Click this button to select an associated SNA Node configuration file (.ACG).

Global Parameters

Click this button to edit the **Extension list** and **Cache size**.

Extension List

The extension list parameter specifies the extension of a file on an iSeries, eServer i5, or System i5. You can specify more than one extension parameter in the extension list. The code pages of files with the specified extensions are translated from the EBCDIC code page to the ASCII code page when the file is transferred between the iSeries, eServer i5, or System i5 and the client. Up to three characters are allowed. There are two special cases:

- A dot alone (.) indicates that data for files having no extension should be converted.
- The character pair .* indicates that data for all files should be converted.

Cache Size

The cache size parameter specifies the number of kilobytes of iSeries, eServer i5, or System i5 data that is buffered in the read-ahead cache of the client. The default is 256 KB; the maximum is 4 MB. A value of zero requests that no cache be used. iSeries, eServer i5, or System i5 data can be retrieved in amounts that are first cached locally on the client. The client retrieves the data from the cache to populate the local device. This read-ahead caching reduces the number of times the client has to access the iSeries, eServer i5, or System i5 to retrieve the data.

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. Select the **Basic** tab to change user preferences and select **Advanced** tab to change the maximum number of emulator sessions and pass through host certification validation.

Basic

Emulator Profile File Location

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

Macro/Script Location

You can specify where emulator macro and script files are to be placed. This directory will be common to all sessions.

By default, macros are placed in the application data directory specified during the installation of Personal Communications, and the macro/script location field value is blank.

User Interface Language

You can view the language of the installed package by selecting **Help > About Personal Communications** from the session menu bar. The language indicators are as follows:

- **S** - MLS
- **T** - Traditional Chinese
- **P** - Simplified Chinese
- **K** - Korean

If your system was installed with multiple-language support, the **Basic** property page shows a section labeled **Select a default user interface language**. If you click on the radio button for **Personal Communications User Interface Language Preference**, it also shows a drop-down list box, 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 click the radio button **User Default from Regional Settings** if you want the language to be that specified in the Windows settings. You can also click 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 might receive a warning message, if the selected language is incompatible with your system's current code page. You can ignore this, if you are planning to reboot your computer to select a new system locale with a compatible code page.

Advanced

Maximum number of emulator sessions

Specify the maximum number of Telnet emulator sessions. It can be either 26 or 52 sessions. Default is 26 sessions.

Pass Through Host Certificate Validation

Choose whether to enable or disable the default certificate validation process during SSL/TLS handshake. Default is enable the certification validation. Applicable only for Microsoft schannel provider.

Note: By default, schannel (MSCAPI) is responsible for validating the host certificate chain received during SSL/TLS handshake. Schannel runs several checks on the received certificate chain, one of which is verifying that the signature affixed to the certificate is valid. The hash value computed on the certificate contents must match the value that results from decrypting the signature field using the public component of the issuer. In order to perform this operation, you must possess the public component of the issuer, either through some integrity-assured channel, or by extracting it from another (validated) certificate. The default certificate validation process is exhaustive and runs several checks on the host certificate chain in order to successfully validate it. By enabling this option, you would effectively suppress the default validation done by schannel and the identity of the host would not be verified. Using this option is not recommended.

Standby/Hibernate

Choose whether to prompt for acceptance when the system attempts to go to standby or hibernate (power saving) mode. If you select **Standby/Hibernate without prompting**, Personal Communications allows the system to standby or hibernate without prompting you, even if sessions are connected. By default, this option is clear.

See “Power Management” on page 52 for more information.

Personal Communications FTP client

The Personal Communications FTP client implements the client functionality specified by File Transfer Protocol (FTP), which is the standard protocol for transferring files to and from remote machines running FTP servers. The FTP client enables file and directory upload and download, and directory navigation of remote and local file systems.

The Personal Communications FTP client supports the following servers:

- UNIX
- iSeries (AS/400)
- Windows
- z/OS MVS
- VMS

The following limitations apply:

- Secure connections (SSL/TLS) are not supported.
- The local file list does not support listing multiple local or LAN-attached drives. To view files on a different drive, type the drive letter of the drive you would like to view in the Directory field and click Enter. The new drive is displayed in the local file list.
- Code page conversion for files is not supported.
- Directory transfer is not supported on systems that do not have directory structures similar to Windows and UNIX. Such systems include the following:

- VM
- OS/390 or z/OS MVS services
- OpenVMS
- i5/OS and OS/400 Library File System

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 configuration panels. Most required information is listed on the Basic page. Click **OK** to complete the option. Click **Help** if you need more information about the individual parameters.

3. Click **File** → **Save** or **Save As**.
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 location is the system-class application data directory.
5. Click **File** → **Exit**.

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, refer to *Administrator's Guide and Reference*.

Stopping the SNA Node

1. To stop the SNA node, click **Programs → IBM Personal Communications → Administrative and PD Aids → SNA Node Operations**.
The Personal Communications SNA Node Operations window appears.
2. Select 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, refer to *Administrator's Guide and Reference*.

APING Requirements

If you wish to run the Check Connection (APING) utility provided with this package to an iSeries, eServer i5, or System i5 running OS/400 V3R1, you must install PTF MF10808 on the iSeries, eServer i5, or System i5 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

Support for Communications Server

If you are connecting to an IBM 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.

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.

Note: You must first install the Communications Server for Windows 5.0 or later client.

You can install Personal Communications on top of Communications Server for Windows Server or over the API Client.

Two 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.

Note: 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.

Load Balancing

Personal Communications 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 servers. The server advertises services including load factors, which the clients or servers can gather and organize to select a server.

Load Balancing over TCP/IP Protocols

Load Balancing over TCP/IP protocols is a key feature for IBM Communications Server for Windows 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.

Notes:

1. 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.
2. 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

The 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.

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 Transport Layer Security (TLS) or Secure Sockets Layer (SSL) to establish sessions with servers; this might 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. Use the following procedure:

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 **Edit → Paste**.
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.

Part 3. Appendixes

Appendix. Notices

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