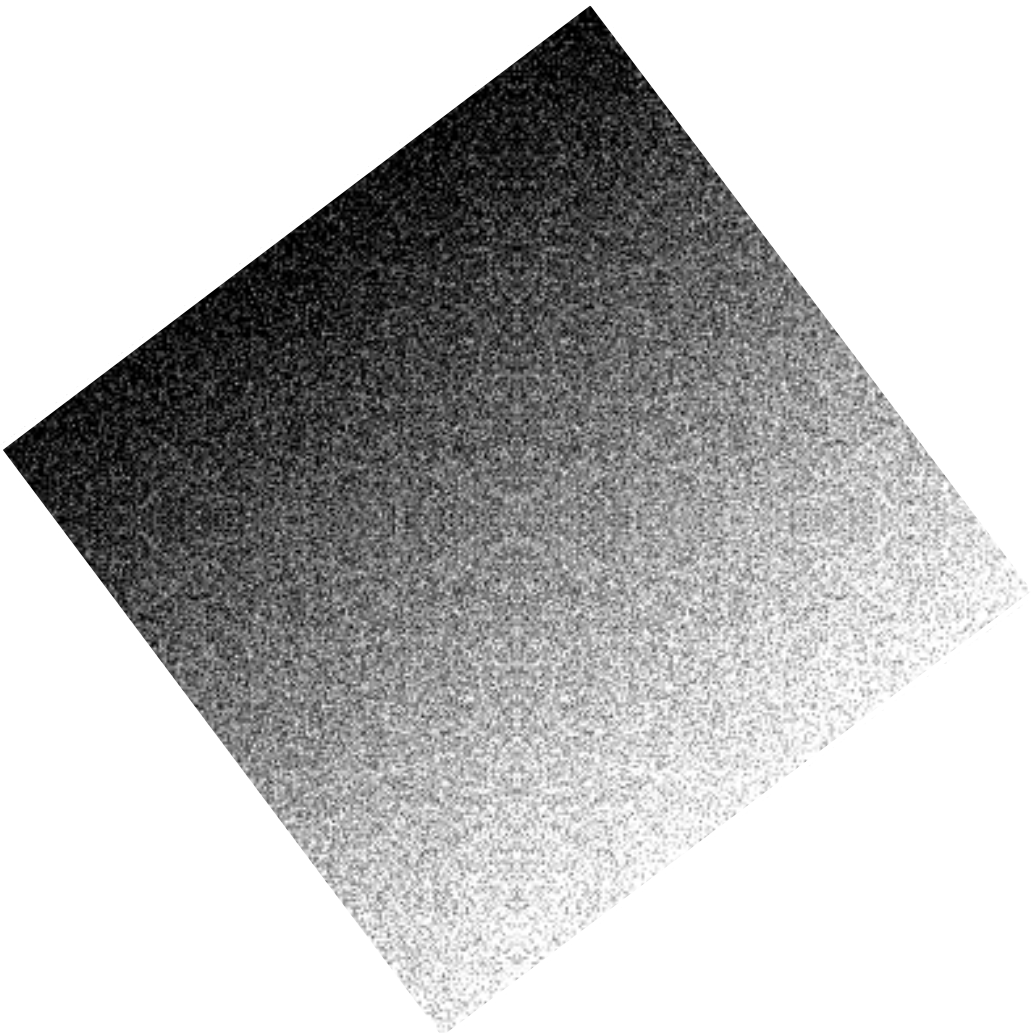
Intelligent Decision Server

IBM

Interacting with PC Applications

Version 1



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Note

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

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This edition applies to Version 1 of Intelligent Decision Server, 5639–IDS, and to any subsequent releases until otherwise indicated in new editions or technical newsletters. Make sure you are using the correct edition for the level of the product.

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Contents

Notices v
Trademarks v

About This Book vii
Who Should Read This Book vii
We'd Like Your Comments vii

Chapter 1. What Are the PC Interaction Tools? 1
Understanding Files and Directories 1
Files 1
Directories 1
File and Path Names 2

Chapter 2. Using the Clipboard Tool 3
Understanding the Clipboard Tool 3
Accessing the OS/2 and Win-OS/2 Clipboards 3
Copying Data from the Clipboard 4
Copying and Moving Data to the Clipboard 4
Using the Clipboard in a Capsule Application 5

Chapter 3. Using PC Directory 7
Specifying a Directory 7
Viewing Directories 8
Scrolling a File to the Top of the Window 8
Sorting the Contents of a PC Directory Window 8
Renaming a File or Subdirectory 9
Deleting Files from Your PC File System 10
Transferring Data from Your Workstation File System to IDS 10
Transferring Data from IDS to Your Workstation File System 11
Setting Conversion Controls for Exporting Files 12
Changing the Protection Options 12
Moving or Copying IDS Icons to Your Workstation File System 13
Assigning File-Name Extensions to File Formats 13
Changing the Priority of Multiple File Extensions 14
Adding a New Extension 14
Changing an Existing Extension Mapping 15
Deleting an Extension Mapping 15
Updating Directories 16
Using PC Directory in Capsule Applications 16
Using PC Directory with a Spreadsheet Icon 17
Using PC Directory with a Text Icon 18
Using PC Directory with a Plot or Screen Capture Icon 18

Chapter 4. Using the PC Application Tool 19
Specifying an Application to Start 19

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Using the OS/2 Icon Settings 21
Using the Windows Icon Properties 21
Using the PC Application Icon in a Capsule Application 21
Setting the File Options 22
Sample Capsule Application Using File Mode 23
Setting the DDE Options 26
Specifying an Input or Output Region 27

Chapter 5. Using the PC Interaction Tools in a Capsule Application 29
Using the Clipboard in a Capsule Application 29
Using PC Directory in a Capsule Application 29
Using PC Directory with a Spreadsheet Icon 30
Using PC Directory with a Text Icon 31
Using PC Directory with a Plot or Screen Capture Icon 31
Using the PC Application Icon in a Capsule Application 31
Using @-Variables 35

Appendix A. Text Conversion Limitations 36
Limitations on RFT-to-Text Conversion 36
Limitations on Text-to-RFT Conversion 37

Appendix B. Spreadsheet Conversion Limitations 38
Using the Translation Log 38
Understanding the Conversion Limitations 38
Spreadsheet Size 38
Region Copy/Move Control Setting Changes 38
Date Inconsistencies 38
Formula Size Differences 39
Header and Footer Inconsistencies 39
Function Inconsistencies 39

Appendix C. Working with PC Data Icons 44

Glossary 46

IDS Publications 48

Index 49

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About This Book

The *Interacting with PC Applications* describes the use of three IBM Intelligent Decision Server (IDS) tools designed to make it easy for you to exchange data between IDS and the applications on your workstation platform, whether that be Windows or OS/2.

Who Should Read This Book

This guide is designed for any IDS user who plans to exchange data between an IDS tool and a workstation file or application running on Windows or OS/2.

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Chapter 1. What Are the PC Interaction Tools?

The IBM Intelligent Decision Server (IDS) provides three tools for interacting with your workstation files and applications from your developer's desktop:

Clipboard

The Clipboard tool enables you to copy or cut data from a workstation application and paste it into an IDS tool or to copy data from an IDS tool and paste it into a workstation application.

PC Directory

The PC Directory tool enables you to view the contents of a directory on your workstation file system and to copy files between your workstation file system and your developer's desktop. The PC Directory tool also enables you to change the format of your data. For example, you can use the PC Directory tool to import data as a DIF file and export the data as a WK1 file.

PC Application

The PC Application tool enables you to automatically start an application on your workstation from within IDS and to use data from IDS in that application. This can be especially useful in capsule applications.

The information presented in this guide assumes that you have a basic understanding of your workstation applications and of the directories and files associated with those applications. For readers with limited computer experience, a brief discussion of files and directories follows.

Understanding Files and Directories

The following paragraphs introduce you to basic file and directory concepts that you need to be familiar with when you use the PC Application tool and the PC Directory tool.

Files

On a workstation, information is organized into *files*. A file is a collection of information stored as a unit on a workstation disk. Some files (known as data files) contain text or spreadsheet information created by word-processing or spreadsheet applications. Some files contain computer-readable code used to start and run applications. Files that can start applications are known as *executable files*.

Directories

A *directory* is a collection of files stored under one name on a workstation disk. Directories are used to organize related files into groups. The *root directory* (sometimes called the system directory) is the first directory on a disk drive and is designated by a backslash (\). For example, C:\ designates the root directory for drive C.

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A directory can contain other directories (known as subdirectories), just as a file drawer on your developer's desktop can contain other file drawers. The directory you are currently working in is known as the *working directory*.

File and Path Names

A file name often ends with a three-letter extension that helps to identify the kind of data stored in the file. Many applications automatically add an extension to a file name. For example, a spreadsheet application might add the extension WK1. Names of executable files have one of the following extensions: EXE, COM, BAT, or CMD.

A *path name* is a list of directories separated by backslashes (\). A complete path name identifies the disk drive and all the directories within which a particular file is located. The following is an example of a complete path and file name:

```
C:\BUDGETS\MAY94.WK1
```

In this example, MAY94.WK1 is the name of a file located in a directory named BUDGETS stored on the C drive.

Chapter 2. Using the Clipboard Tool

The Clipboard tool gives you access to the data on the clipboard used by your workstation applications, thereby providing you with an easy way to exchange data between your developer's desktop and your workstation applications (either Operating System/2 (OS/2) or Windows).

The clipboard is a temporary storage location used by your workstation applications to share information. Whenever you use the cut or copy functions in your workstation application, the data is placed on the clipboard, replacing whatever data was previously stored there. When you use the paste function, the contents of the clipboard are copied to the location you select.

Data that you cut or copy to the clipboard stays there until you cut or copy different data, or until you shut down your operating system. Because the clipboard retains its contents until you change them, you can paste the same data over and over again.

Understanding the Clipboard Tool

On your developer's desktop, you can use the Clipboard tool to exchange data with your OS/2 or Windows clipboard. The IDS Clipboard tool supports the following data formats: TXT, DIF, RTF, BMP, and WK1.

In many ways, the Clipboard icon is like any other icon on your desktop. For example:

- You can move it around on your desktop, into a folder, or into a capsule window.
- You can delete it. Deleting the icon does not affect the contents of the clipboard.

In other ways, the Clipboard tool is not typical. For example:

- The Clipboard tool occupies no storage space on your desktop. It points to a storage location used by your workstation applications. Therefore, deleting a Clipboard icon does not give you more space on your desktop.
- You can copy a Clipboard icon, but having more than one Clipboard icon on your desktop is not useful. The Clipboard tool references only one storage location, so multiple copies all refer to the same storage location.
- The Clipboard icon always remains closed. Attempts to open it result in error messages.

Accessing the OS/2 and Win-OS/2 Clipboards

The OS/2 operating system gives you access to an OS/2 clipboard and a Win-OS/2 clipboard. To work with the IDS Clipboard tool, the OS/2 clipboard and Win-OS/2 clipboards must be set to public, which is the default.

For more information about public clipboards, refer to your OS/2 documentation.

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Copying Data from the Clipboard

The following table shows the different data formats that can be transferred from the clipboard to various IDS tools.

Table 1. Data transfer formats from the clipboard

You can copy this type of clipboard data	To this IDS tool
TXT	Envelope, Spreadsheet, Text, PC.TXT
	In Capsule applications, Spreadsheet cannot receive TXT data.
WK1	Spreadsheet, PC.WK1
RTF	Layout, Plot, Query, Spreadsheet, PC.DIF, Envelope, Text, PC.RTF
BMP	Text (if destination is a graphic region)

In capsule applications, transfers to an Envelope become enclosures. Clipboard transfers to Envelopes are not supported within capsule applications.

To copy data from the clipboard to an IDS tool:

1. If you do not already have a Clipboard icon on your desktop, copy one from the *Blank Icons file drawer in the New Icons file drawer.
2. Switch to your workstation application and cut or copy the desired data to place the data on the clipboard.
3. Switch back to your developer's desktop and, if you have not done so already, open the icon into which you want to copy the data.
4. Copy the closed Clipboard icon to the location in the open tool window where you want to place the data.

   The data is copied to the location you selected.

Copying and Moving Data to the Clipboard

Copying or moving data from an IDS tool to the clipboard replaces the clipboard contents with new data in one of the supported data formats.

The following table shows the IDS tools that can supply data to the clipboard.

Table 2. Data transfer formats to the clipboard

Data copied or moved from this tool	Is converted to this data format
Envelope	TXT
In Capsule applications, Envelope cannot supply data to the clipboard.	
Layout	RTF
Plot	BMP
Query	RTF
Reporter	RTF
Screen Capture	BMP
Spreadsheet (all data)	WK1
Spreadsheet (selected data)	RTF
Text (graphic region)	BMP
Text	TXT

If you want your clipboard to contain RTF data, transfer data from an Envelope or Text tool to a PC.RTF icon and from there to the clipboard.

To copy or move data from an IDS tool to the clipboard:

1. Open the appropriate tool window and select the data you want to copy or move.
2. Copy or move the data, selecting the closed Clipboard icon as the destination.

   The data is placed on the clipboard, replacing the data previously stored there.
3. Switch to your workstation application and paste the desired data into your application.

Using the Clipboard in a Capsule Application

The advantage of using the Clipboard icon in a capsule application is that you can write data to the clipboard and subsequently retrieve that data in another part of the processing sequence. This advantage exists because the Clipboard icon represents a reference to a single global resource.

The disadvantage is that there is no protection from concurrent access. Thus, when you use a Clipboard icon in a capsule application, you must be aware that other applications can be accessing the same global resource. When you run a capsule application that contains a Clipboard icon, allow the processing sequence to finish before trying to access the clipboard from your desktop. Otherwise, you can delete data being transferred to the clipboard.

For information about the data transfers that can take place between IDS tools and PC Directory in capsule applications refer to Table 1 on page 4 and Table 2.

In a capsule application, you connect Clipboard icons to source and destination icons with arrows. See the *Capsule User's Guide* for information about the Arrow Options window and running capsule applications.

Chapter 3. Using PC Directory

The PC Directory tool enables you to open a window on IDS that displays information about the contents of directories on your workstation file system, whether an OS/2 or Windows file system. You can view the information in the PC Directory window from different perspectives by changing the sort order. For example, you might want to sort the contents of a directory by date to quickly find your most recent changes or by file-name extension to group together all files stored in a particular file format.

The PC Directory tool also lets you:

- Rename a file or directory
- Delete one or more files with a few quick point-and-click operations
- Transfer files between your workstation file system and the IDS environment—a capability that is especially useful if you want to transfer data from or to your favorite workstation applications during a capsule processing sequence.

Specifying a Directory

After copying a PC Directory icon to your desktop, you can set it to access a particular directory on your workstation file system. If you frequently exchange data between your workstation file system and IDS, you might want to copy multiple PC Directory icons to your desktop and configure each to access a different directory.

The PC Directory tool allows you to access directories that are not physically on your workstation, but are mounted over the network. File systems that are accessible through OS/2 are supported, such as LAN Manager and NetWare file systems.

For network-mounted drives, be aware that PC Directory:

- Supports Novell and NFS drives only under IBM OS/2, using IBM TCP/IP Version 2.0
- Shows in its window only what you could see under OS/2 using the DIR command

To specify a directory for a PC Directory icon to access:

1. Open the Icon Options window of a PC Directory icon and select **Other Data** as the **Display** choice.
2. In the **Directory Name** field, type the path name to the directory you want to work with, as shown in the following illustration.

In the previous illustration, a subdirectory is specified. If you prefer, you can specify a root directory (for example, C:\). Then, when you open the icon, you can double-click on any subdirectory listed in the PC Directory window to display the contents of that subdirectory.

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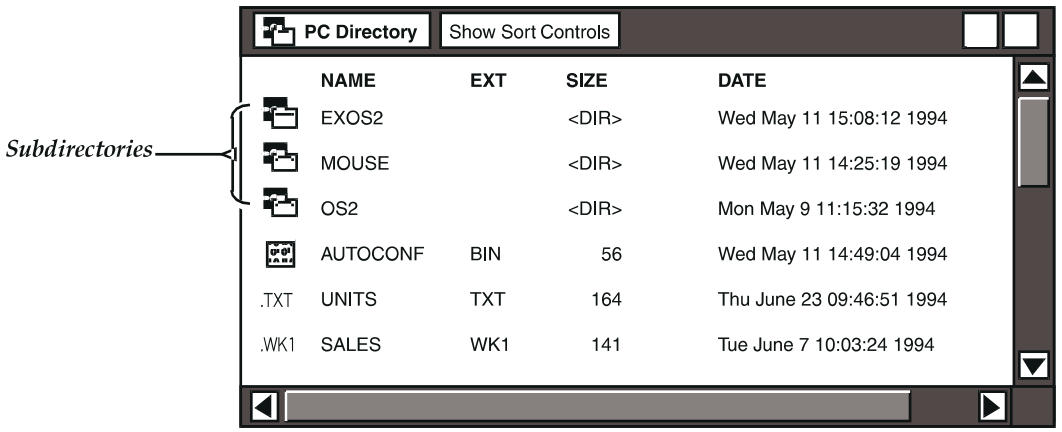
Viewing Directories

When you open a PC Directory icon, you see a list of the files and subdirectories that are contained in the workstation directory specified in the Icon Options window.



To view the contents of a subdirectory:

1. Double-click on a subdirectory listed in the PC Directory window.

Another PC Directory window opens, showing the contents of the subdirectory.

From the second PC Directory window, you can open subsequent subdirectories. Opening subdirectories this way is convenient when you want to locate a file and do not remember its path name, but you could end up with multiple open PC Directory windows. For this reason, it is more practical to set the PC Directory icon to take you directly to the desired subdirectory (as explained in “Specifying a Directory” on page 7 earlier in this chapter).

Scrolling a File to the Top of the Window

To quickly scroll the window so a selected file appears at the top of the window:

1. From the **Special** menu, select **Focus on Selection**.

Sorting the Contents of a PC Directory Window

By default, the contents of your disk are listed in the PC Directory window in ascending order (that is, from A–Z, then 0–9), sorted first by extension, and then within each extension grouping, by file name. As a result, subdirectories, which normally have no extension, and files without extensions are listed first.

To change the sort order:

1. In the PC Directory window header, click on the **Show Sort Controls** button. The Sort Controls window opens.

2. Set the primary sorting instructions using the *Sort Level 1* field.

   Unsorted sorts the entries in the order in which they are read from the workstation file system. If you select **Unsorted**, you cannot set any other sorting options.

   Ascending sorts the entries in alphabetic order (A–Z), and then in ascending numeric order (0–9), based on the name, extension, file size, or date, as set in the **Sort Order** field.

   Descending sorts the entries in descending numeric order (9–0), and then in reverse alphabetic order (Z–A), based on the name, extension, file size, or date, as set in the**Sort Order** field.

3. Set secondary sorting instructions using the **Sort Level 2** field.

   The secondary sorting instructions affect the order of items that have been grouped due to the primary sorting instructions. For example, if the primary sort order is alphabetic by extension and there are five files with the TXT extension, the secondary sorting instructions tell PC Directory whether these five files should be further sorted alphanumerically by name, numerically by size, or chronologically by the date each file or directory was last changed.

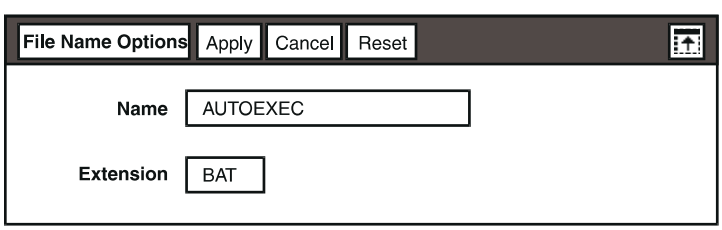
4. Click on the **Apply** button or close the window to put your change into effect.

The sort controls you set in the original PC Directory window affect any subdirectories you open from that window. These controls are saved when you close the icon. If you set different sort controls in a subdirectory window, however, those sort controls affect the current display but are not saved when that subdirectory window is closed.

Renaming a File or Subdirectory

To change the name of a file or subdirectory on your workstation file system:

1. In the PC Directory window, select the relevant file or subdirectory and open the options window.
2. In the File Name Options window that opens, enter a new name and extension for your file. The name can be up to eight characters, and the extension can be up to three characters.



3. Close the window to put your change into effect.

Deleting Files from Your PC File System

Before you can delete files, you must change the deletion setting in the File Controls window.

To change the deletion setting:

1. In the PC Directory window header, click on the **Show File Controls** button. The File Controls window opens.
2. Select a choice in the **On Delete, Files Are** field.

   Protected is the default setting. When this choice is selected, you cannot delete files from the PC Directory window.

   Discarded is a fairly safe choice. When **Discarded** is selected, files that you delete are imported to IDS and transferred to the Discard folder on your desktop. This means that you can get a file back if you mistakenly delete it. However, the Discard folder normally holds only four files, so be sure to retrieve your file immediately if you change your mind.

   Deleted causes files you delete to be permanently removed from the system. If you select this choice, you cannot retrieve deleted files.
3. Click on the **Apply** button or close the window to put your change into effect.

To delete a file from your workstation file system using PC Directory:

1. In the PC Directory window, select the file or files that you want to delete.
2. Press the Delete key or activate the delete function on the pop-up function pad.

To delete files from a diskette, make sure the diskette is not write-protected.

Transferring Data from Your Workstation File System to IDS

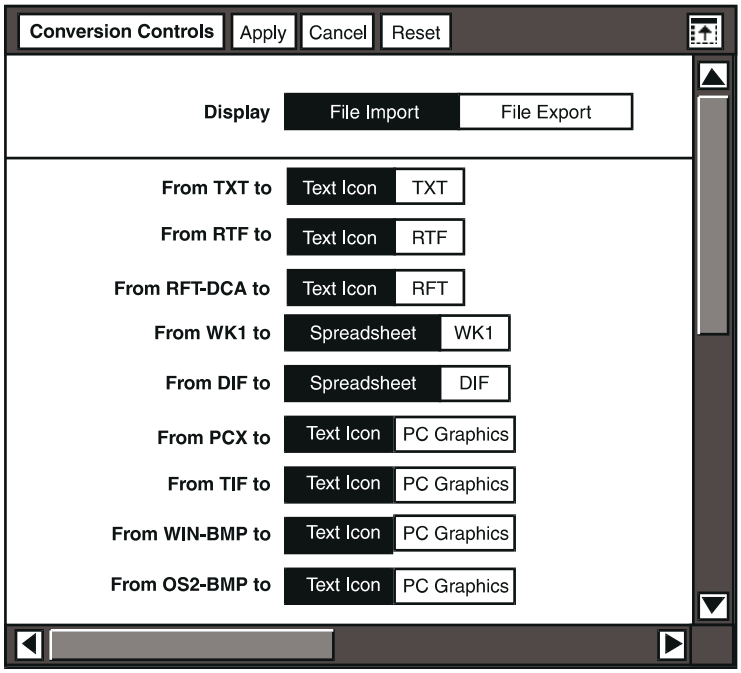
From a PC Directory window, you can copy files stored in a variety of formats to your developer's. By default, PC Directory instructs IDS to convert your workstation files into icons that you can use directly on your developer's. If you are not going to work with the incoming data in the IDS environment, you might want to set conversion options to instruct IDS to store this incoming data in a different format.

If the incoming workstation file has a file-name extension that PC Directory does not recognize, you also need to add to or modify the list of extension mappings. For instructions, see “Assigning File-Name Extensions to File Formats” on page 13.

To set the conversion options for importing files:

1. Open the PC Directory icon.
2. From the PC Directory window's **Special** menu, select **Show Conversion Controls**.

The Conversion Controls window opens, displaying the file import options.



Select formats you want to use for various types of incoming data files.

By default, the conversion options are set so that you can use incoming data with IDS tools.

Close the Conversion Controls window.

After setting the appropriate conversion options, simply copy or move the file you want out of the PC Directory window, and it is converted to the appropriate IDS icon.

Transferring Data from IDS to Your Workstation File System

You can use a PC Directory window to transfer Text, Spreadsheet, Screen Capture, Plot, and PC Data icons from IDS to your workstation file system. The transferred icon is converted into a workstation file in an appropriate format.

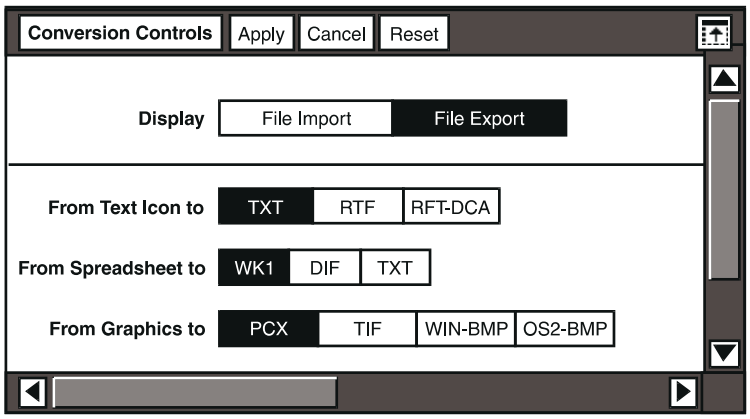
Before transferring an icon, you might want to change the extension mappings or the conversion settings for file export, although the defaults are set to the most common workstation formats. Changing the extension mappings is explained in “Assigning File-Name Extensions to File Formats” on page 13. Changing the export conversion controls is explained in the next section.

Before moving or copying files, you might also want to change the protection options for your files. For instructions, see “Changing the Protection Options” on page 12.

Setting Conversion Controls for Exporting Files

To set the conversion controls for exporting files from IDS:

1. Open the relevant PC Directory icon.
2. From the PC Directory window header, select **Show Conversion Controls**.
3. In the Conversion Controls window that opens, display the File Export options.



4. Select the formats you want to use for various types of outgoing IDS files.

   For example, you can choose to have the contents of your Spreadsheet icon exported in WK1 format if you are going to use the data in a spreadsheet application that uses that format, or you can choose to export the data in TXT format if you are going to use the data in a word-processing application.

   The setting in the **From Graphics to** field affects the direct export of Screen Capture icons. It can also affect how Plot, Clipboard, and Text data is exported when you use PC Directory in a capsule application. For more information, see "Using PC Directory in Capsule Applications" on page 16.

5. Close the Conversion Controls window.

Changing the Protection Options

Workstation file systems do not allow more than one file of the same name (including extension) in the same directory. If you try to copy an icon from your IDS desktop into a workstation directory that already contains a file of the same name, one of three things happen, depending on the settings in the File Controls window:

PC Directory will not let you transfer the icon to the workstation file system (this is the default setting).

PC Directory will allow the transfer, but will rename the previous file instead of overwriting it.

PC Directory will overwrite the previous workstation file with the data from the IDS icon.

To change the protection for files being copied or moved from IDS into the PC Directory window:

From the PC Directory window's **Special** menu, select **Show File Controls**.

The File Controls window opens.

Set the **On Move/Copy, Destination Files Are** field.

- **Protected** is the default setting. When this choice is selected, you cannot copy or move an IDS icon into a workstation directory that contains a workstation file of the same name.
- **Renamed** tells IDS to resolve a naming conflict by renaming the existing workstation file instead of overwriting it.

  For example, suppose there is a file named DEMO.TXT in a workstation directory, and you copy an IDS icon of the same name into that directory. The existing workstation file is renamed DEMO1.TXT, and the IDS icon is converted to a new file named DEMO.TXT.
- **Overwritten** tells IDS to replace the data in an existing file with data from an IDS icon of the same name. Use this setting with caution.

Close the File Controls window.

Moving or Copying IDS Icons to Your Workstation File System

To move or copy a Text, Spreadsheet, Screen Capture, Plot, or PC Data icon from IDS to your workstation file system:

1. Open the PC Directory window to the subdirectory where you want to place the IDS file.
2. Move or copy the IDS icon to the appropriate subdirectory window:

   Select the blank area at the top or bottom of the appropriate subdirectory window as the destination.

   Select the name of a subdirectory in the window to move the file into that subdirectory.

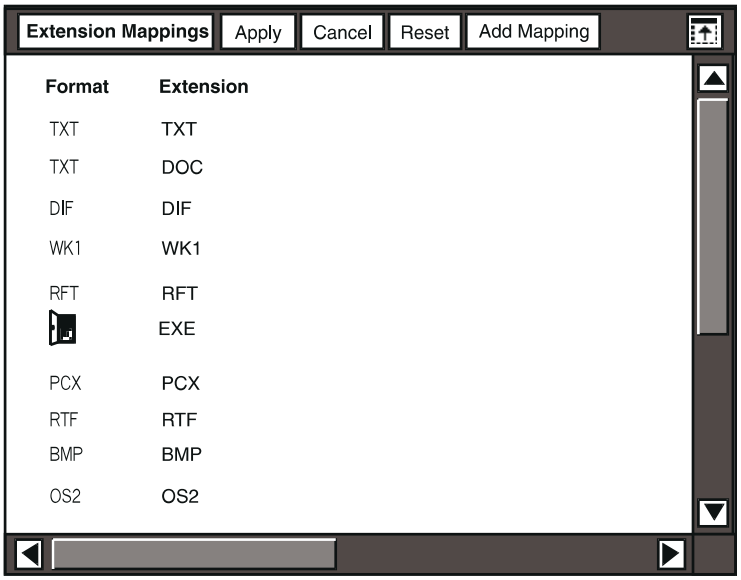
Assigning File-Name Extensions to File Formats

File-name extensions can help you to remember the type of data contained in various files. PC Directory uses extension mapping to recognize the format of incoming data and to assign file-name extensions to files as they are exported from IDS.

To see how the extensions are currently mapped:

1. From the PC Directory window's **Special** menu, select **Show Extension Mappings**.

The Extension Mappings window opens.



If a format is mapped to more than one extension, IDS assigns the first extension in the list to the file you are exporting unless you have included an extension in the icon's name that matches a different extension in the window.

For example, in the preceding illustration, the TXT format has two extensions mapped to it: TXT and DOC. When you export a Text icon from IDS whose name does not include an extension, the TXT extension is automatically used because TXT appears first on the list in the Extension Mappings window. If you specify an extension that is listed in the Extension Mappings window, the extension you specify is used regardless of its placement in the window.

Changing the Priority of Multiple File Extensions

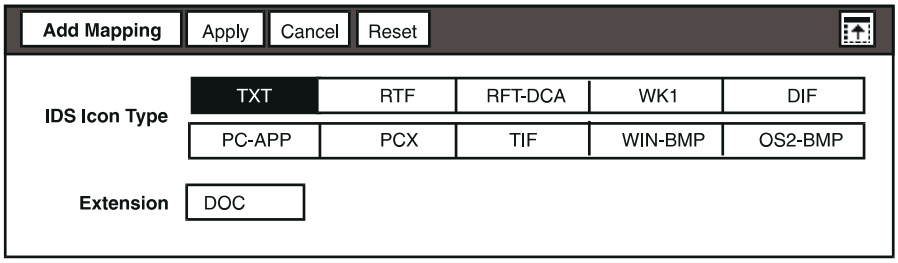
To change the priority of multiple file extensions for the same file format:

1. Move the lowest-priority extension to the bottom of the Extension Mappings window.
2. Click on the **Apply** button or close the Extension Mappings window to put your change into effect.

Adding a New Extension

To add a new extension to the list:

1. Open the Extension Mappings window by selecting **Show Extension Mappings** from the PC Directory window's **Special** menu.
2. In the Extension Mappings window header, click on the **Add Mapping** button. The Add Mapping window opens.



3. In the **IDS Icon Type** field, select one of the icon types.
4. In the **Extension** field, enter a one- to three-letter extension. Generally, three-letter extensions are the most useful.
5. If you want to add another extension, click on the **Apply** button in the window header, then repeat steps 3 and 4. When you are finished adding mappings, close the window.

Changing an Existing Extension Mapping

To change an existing extension mapping:

1. From the PC Directory window's **Special** menu, select **Show Extension Mappings**.
2. In the Extension Mappings window that opens, select an extension and open the options window.
3. In the Mapping Options window that opens, change the current extension mapping.
4. Click on the **Apply** button or close the Mapping Options window to put your change into effect.

   The Mapping Options window looks and acts like the Add Mapping window shown previously.

Deleting an Extension Mapping

To delete an extension mapping:

1. From the PC Directory window's **Special** menu, select **Show Extension Mappings**.
2. In the Extension Mappings window that opens, select an extension, then press the Delete key or activate the delete function on the pop-up function pad.
3. Click on the **Apply** button or close the Show Extension Mappings window to put your change into effect.

You might want to delete an extension mapping if you do not want a file to change formats. For example, if you want to bring a binary file, such as a .CMD, .EXE, .COM, or .BAT file, into IDS to mail it to someone else and do not want to change it to a PC Application file, you can simply delete the appropriate file extension from the Extensions Mapping window before you import the binary file. The person you are mailing the

binary file to must also delete that file extension from their PC Directory Extensions Mapping window.

Updating Directories

You cannot create or delete directories using the PC Directory tool, but you can easily switch to your workstation operating system to create or delete a directory.

To switch from IDS to your workstation operating system:

1. From the IDS **Special** menu, select **Minimize**.

To switch back to IDS from your workstation operating system:

1. Double-click on the IBM Intelligent Decision System icon on your workstation desktop.

If you make changes in your workstation file system (for example, if you create or delete a file or directory), and then you switch back to IDS, you will not be able to see your change in a PC Directory window that is currently open on your desktop.

To update the window:

1. Select **Update Directory** from the PC Directory window's **Special** menu.

PC Directory is automatically updated when you close, then reopen the window.

Using PC Directory in Capsule Applications

When using the PC Directory icon in a capsule application, you can frequently specify either a file name or a specific region in a file as the source or destination of the data you are transferring.

This section contains information to help you respond to the **Source Area** and **Destination Area** fields that sometimes appear at the bottom of the capsule Arrow Options window.

If you select **Other** in either the **Source Area** or **Destination Area** fields, the **Region Name** field appears, where you can supply the name of a region or file. The Arrow Options window does not display the **All Data** and **Other** choices unless source or destination regions are allowed for a particular type of data transfer.

General rules for transferring data from an IDS icon to a PC Directory icon:

The destination file-name extension you specify in the Arrow Options window must match the current extension-mapping settings and export-conversion settings in the PC Directory tool.

For information about these settings, see “Assigning File-Name Extensions to File Formats” on page 13 and “Setting Conversion Controls for Exporting Files” on page 12.

The settings in the File Controls window of the PC Directory tool must allow for the destination file to overwrite or rename an existing file if there is a naming conflict.

For information about these settings, see “Changing the Protection Options” on page 12.

General rules for transferring data from PC Directory to an IDS icon:

The source file-name extension you specify in the Arrow Options window must match the current import-conversion choices set in the PC Directory tool.

For information about these choices, see “Transferring Data from Your Workstation File System to IDS” on page 10.

If you have specified a destination region, the source file-name extension must be compatible with the type of region specified. For example, a source file with the extension PCX can be transferred only to a graphic region.

Other things to keep in mind when using PC Directory in capsule applications include:

As always when entering file names, you must be sure to follow the rules that apply to your operating system. For example, HPFS is case sensitive.

When entering a file name, be sure to include the correct file-name extension.

If you are copying data to a diskette, make sure the diskette is not write-protected.

Source and destination files must be closed to be accessed by PC Directory.

Using PC Directory with a Spreadsheet Icon

When copying data from a Spreadsheet icon to a PC Directory tool, the acceptable destination file formats you can specify in the Arrow Options window are DIF, WK1, and TXT. If you specify DIF or TXT, you can use**All Data** or a region as the source. If you specify WK1, you must use **All Data**.

When the destination of the data is a region in a spreadsheet, the capsule's Arrow Options window displays a field called **Source Data Should**. Use this field to specify how you want the data to be incorporated into the region. The choices in this field are explained in the following table. For more information, see the *Capsule User's Guide*.

Field choice	Explanation
Replace	Replaces the existing data in the spreadsheet region
Append Columns To	Appends the incoming data as columns to the existing data in the spreadsheet region
Append Rows To	Appends the incoming data as rows to the existing data in the spreadsheet region
Add To	Adds the incoming numerical data to the numbers in the existing spreadsheet region
Subtract From	Subtracts the incoming numerical data from the numbers in the existing spreadsheet region

Using PC Directory with a Text Icon

When copying a Text icon to a PC Directory icon, the following rules apply:

You can copy text to an RFT, RTF, or TXT file by specifying **All Data** or a text region as the source in the Capsule's Arrow Options window. Even if you specify **All Data**, only the text content is copied, not the graphics.

You can copy a graphic region from a Text icon to a PCX, TIF, or BMP file.

When copying data from a PC Directory icon to a Text icon, the following rules apply:

RFT, RTF, and TXT files are acceptable text sources. You can copy data from these sources using **All Data** or a text region as the destination in the Arrow Options window.

PCX, TIF, and BMP files are acceptable graphics sources. You can copy data from these sources using **All Data** or a graphic region as the destination.

Using PC Directory with a Plot or Screen Capture Icon

When copying a Plot or Screen Capture icon to a PC Directory icon, you can specify a PCX, TIF, or BMP file as the destination in the Arrow Options window.

You cannot transfer graphics data into a Plot or Screen Capture icon using PC Directory.

Chapter 4. Using the PC Application Tool

The PC Application tool enables you to use a workstation application, such as Excel, within a capsule application or to quickly open a workstation application by double-clicking on an icon on your developer's desktop. You can choose to open either just the application or the application and a specific file created by that application.

For example, you could use PC Application to open your Windows or OS/2 word-processing application, or to open the word-processing application and a specific text file at the same time.

The application must be an executable file with one of the following file-name extensions: EXE, COM, BAT, or CMD.

You might want to place multiple copies of the PC Application icon on your desktop and configure each one to access a different application or application plus file. Using the PC Application icon's Icon Options window, you can then name each icon to show the application or file it accesses.

Specifying an Application to Start

Two methods are available for setting up a PC Application icon.

The first method involves copying an executable file from the PC Directory window. This method enables you to quickly and automatically set up a PC Application icon for use directly on your desktop (rather than in a capsule application).

The second method is to enter the necessary information in the PC Application icon's Icon Options window. This approach provides additional options to customize how the icon works. If you plan to use the PC Application icon in a capsule application or if your application requires command-line parameters, you must use the Icon Options window to set up the icon.

To quickly set up a PC Application icon for stand-alone use:

1. Copy an executable file out of the PC Directory window onto your developer's desktop.

The executable file is automatically converted to a PC Application icon and is automatically set to access the correct application. For more information about PC Directory, see Chapter 3, “Using PC Directory” on page 7.

To set up a PC Application icon using the Icon Options window:

1. Open the PC Application icon's Icon Options window and select **Other Data** as the **Display** option. Notice that the **Execution Information** field is set to **Global.**.

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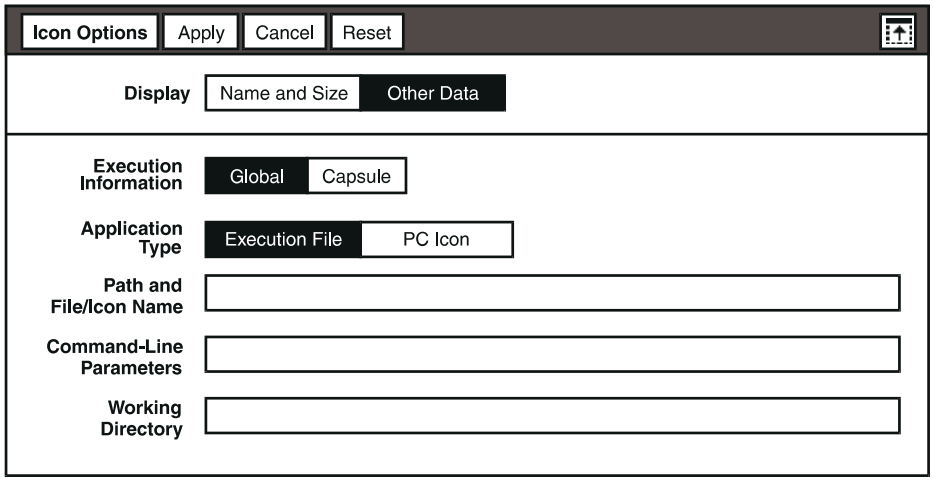


Figure 1. Sample capsule application

2. In the**Application Type** field, select either **Execution File** or **PC Icon**, then fill in the **Path and File/Icon Name** field to specify an application to open.

   If you selected **Execution File**, use up to 255 characters to enter a path and file name in the **Path and File/Icon Name** field. This must be a complete path name including the drive, directory, and file name unless you specify a working directory (described in step 4). If you specify a working directory and the application is in that directory, you need only enter the application's file name.

   For example, you could specify c:\os2 as the working directory and just enter e.exe in the **Path and File/Icon Name** field, or you could leave the **Working Directory** field blank and enter c:\os2\e.exe in the **Path and File/Icon Name** field.

   If you selected **PC Icon**, enter the name of your workstation application icon in the **Path and File/Icon Name** field. If the icon resides directly on the OS/2 desktop, no path information is necessary. If the icon is in a folder, specify the path to the icon using a backslash to represent folders. For example, os/2 system\productivity\os/2 system editor.

   If you want to use the OS/2 icon settings or the Windows icon properties, see the information following this section.

3. Enter parameters in the **Command-Line Parameters** field if supported by your application. (These are parameters that you would typically type at a command-line prompt.)

   If you want your application to open a specific data file, enter the instructions for that in this field. See your application's documentation for more information about parameters.

   If you are using a Windows application, you must include the path name to files referenced in the **Command-Line Parameters** field.

4. Enter a working directory if desired, or if required by your application.

   If you specify a working directory, it becomes the current directory when the PC Application icon is opened. When the application is closed, the directory you were working in previously becomes the current directory. The main benefit of specifying a working directory is that you do not need to enter a complete path in the **Path and File/Icon Name** field, and any files created by the application are placed in the working directory.

5. If you plan to use the icon in a capsule application, set the capsule application's options, as explained later in this chapter. Otherwise, close the Icon Options window.

   Now you can use the icon to start the application directly from your developer's desktop.

Using the OS/2 Icon Settings

If you choose to use an OS/2 application icon, you can use the OS/2 icon settings to specify path and file name, parameters, working directory, session type, start minimized, close window on exit, WIN-OS/2 settings, or title. The PC Application **Command-Line Parameters** and **Working Directory** fields override the OS/2 settings if you enter values in both places. For more information about these settings, see your OS/2 documentation.

Using the Windows Icon Properties

The PC Application **Command-Line Parameters** and **Working Directory** fields override the Windows properties if you enter values in both places. For more information about these properties, see your Windows documentation.

Using the PC Application Icon in a Capsule Application

Two methods exist for transferring data into and out of your PC Application icon when it is running in a capsule application:

File. When you transfer data as files, you can use data from any application that supports the PC Application data formats: WK1, DIF, RTF, RFT-DCA, TXT, TIF, PCX, OS2-BMP, and WIN-BMP.

DIF transfers to Windows applications are not supported.

DDE. When you transfer data using the DDE method, the advantage is that you can import regions of data as well as complete files, and you can export data to regions in workstation applications. The limitation is that IDS supports only some of the DDE-enabled products. See Table 3 on page 27 and Table 3 on page 27 for information about which IDS tools can exchange specific data formats with which workstation applications.

To set up a PC Application icon for use in a capsule application:

Open the PC Application icon's Icon Options window and select **Other Data** as the **Display** option. Notice that the **Execution Information** field is set to **Global**.

If you have not done so already, specify the global settings as described in “Specifying an Application to Start” on page 19.

You can use @-variables in the fields to specify file names and directories. For information about using @-variables, see the *Capsule User's Guide*.

Set the **Execution Information** field to capsule. The window displays the capsule icon's options.

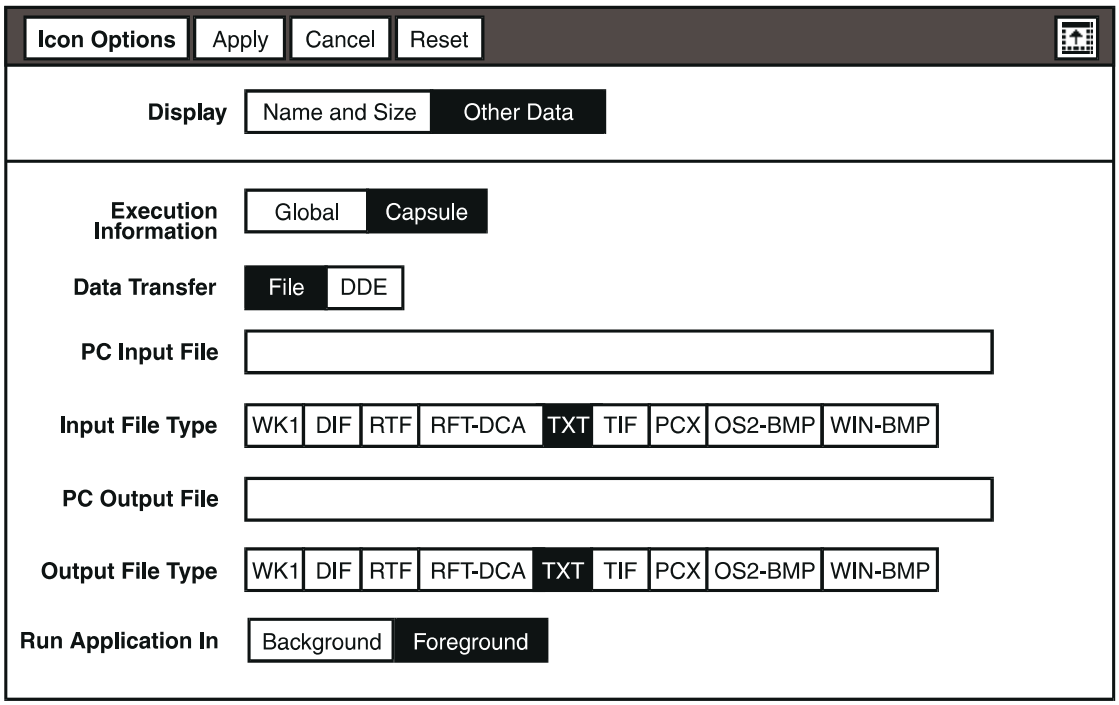


Figure 2. Second Arrow Options window

In the **Data Transfer** field, select **File** or **DDE**, then set the options for either File or DDE, as explained in the procedures that follow.

Close the Icon Options window. The PC Application icon is now ready to be used in a capsule application.

Setting the File Options

To set the File options:

1. In the **PC Input File** field, enter the name and extension of the workstation file that will contain the data to be worked on by the workstation application. The PC Application tool reads the data from the incoming IDS icon and places that data in this file. This file might already exist.

   If the file does not exist, the PC Application tool creates it.

In either case, if this file is not in the working directory, be sure to include its full path.

2. In the **Input File Type** field, select the correct format for the incoming data file. The correct file type might match the file's extension, but not necessarily.
3. In the **PC Output File** field, enter the name of the workstation file that will contain the data after it has been worked on by the workstation application. You do not need to include a file-name extension. If this file is not in the working directory, include its path.

   This file must be created by you while the application is running or by a macro in the workstation application.

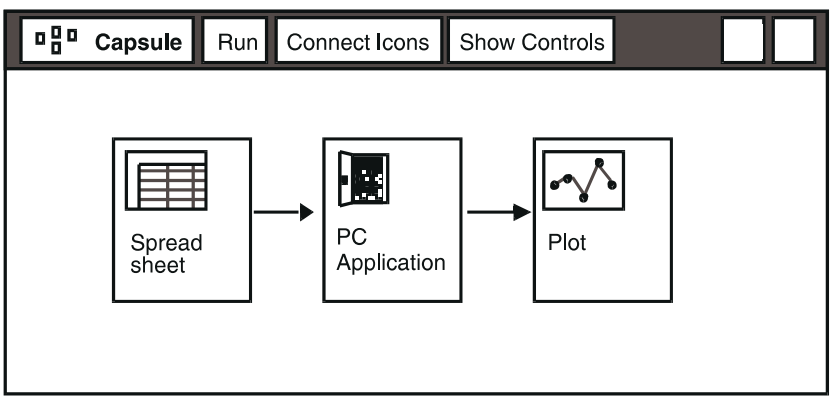
   The capsule tool uses the information in this file as input for the icon that follows the PC Application icon in the capsule application.
4. In the **Output File Type** field, select a format for your new workstation data file.
5. Set the **Run Application In** field.

   Use the **Foreground** choice if you know your workstation application requires you to interact with it while it is running or to open or close any files. Select **Background** only if you want the IDS desktop to remain in view while the capsule application is running and you have already tested your capsule application.

   Some workstation applications do not support background running, and will ignore the setting of this field. Furthermore, selecting **Background**does not prevent workstation applications from appearing on the developer's desktop as they run.

Sample Capsule Application Using File Mode

In this example, information from a region in an IDS spreadsheet is transferred to an Excel spreadsheet, manipulated, and then transferred into an IDS Plot icon. The capsule window for this example is shown in Figure 1 on page 20.



Notice that the icons are connected by arrows. The arrows show the flow of information from one icon to the next. When you open the Arrow Options window, the source and

destination icons are shown. For more general information about the Arrow Options windows, see the*Capsule User's Guide*.

In file mode, the PC Application tool can read information from a region in an IDS source icon and write information to a region in an IDS destination icon. It cannot, however, write to or read from a specific region in a workstation application, such as Excel. If you specify a workstation application region as the destination or source in the Arrow Options window, the data transfer will not complete successfully.

The Arrow Options window for the arrow connecting the IDS Spreadsheet icon to the PC Application icon in this example is shown in Figure 3. The spreadsheet region being used is called data1. Before running Excel, the PC Application tool reads the data from the region named data1 and saves it in a file named rawdata.wk1.

Notice that the file called rawdata.wk1 is not mentioned in this window. The Arrow Options window pertains only to IDS icons.

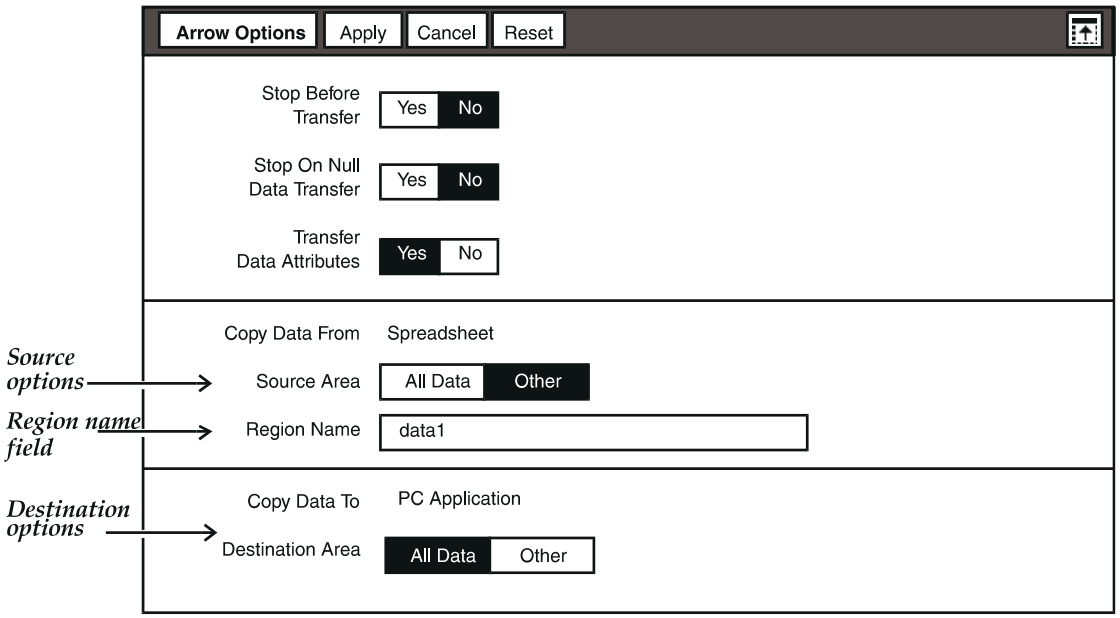
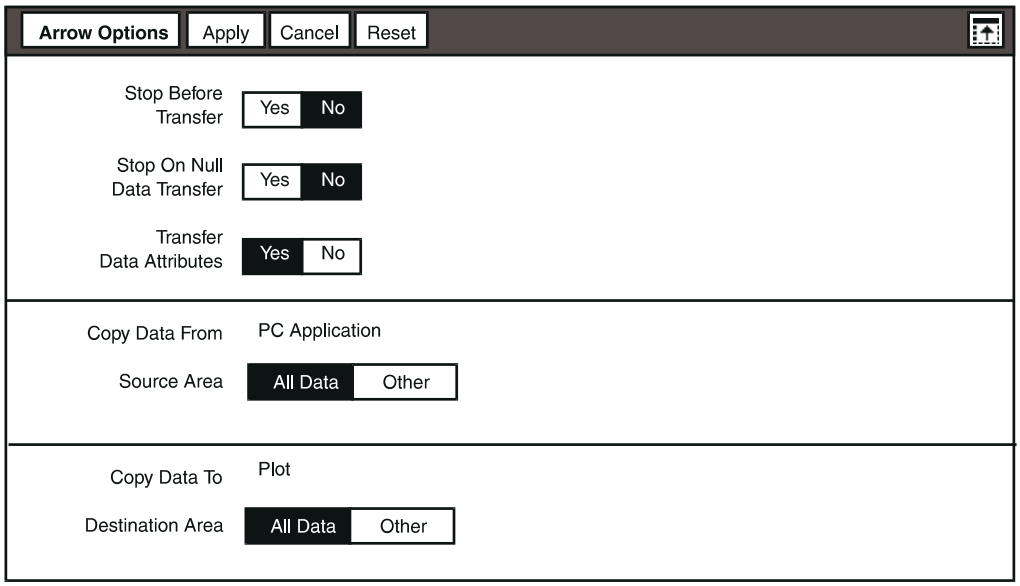


Figure 3. Arrow Options window

The Arrow Options window for the arrow connecting the PC Application icon to the Plot icon in this example is shown in Figure 2 on page 22. Notice that the file called results.wk1 is not mentioned in this window. This Arrow Options window also pertains only to IDS icons.



In the example below, no path is specified for the Excel application, because it is in the path statement. The results.wk1 file, however, is in the directory C:\accounting, the working directory. You must create the results.wk1 file when Excel is finished manipulating the data, or Excel must create the file using a macro.

Enter the location and names of the workstation application and files in the PC Application icon's Icon Options window. The appropriate settings for this example are shown in the following two figures.

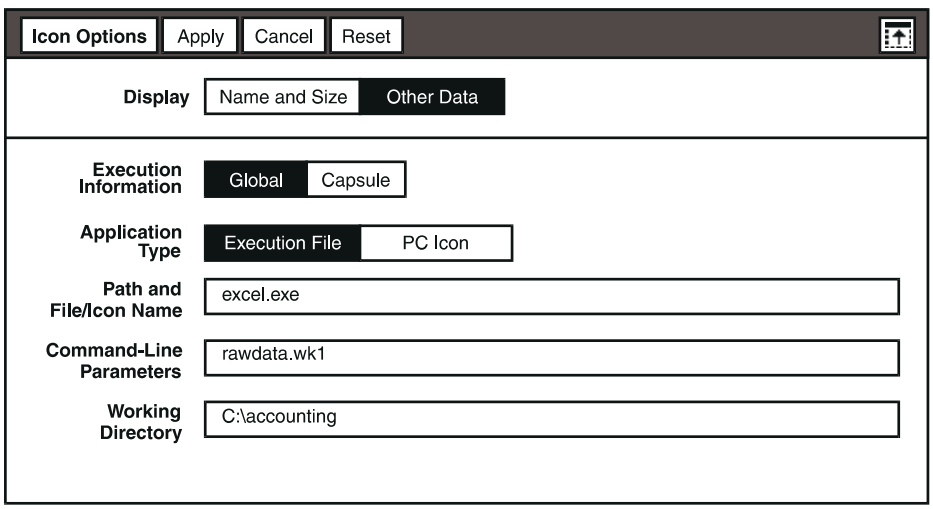


Figure 4. Sample Icon Options window: Global page

Notice that in Figure 4, the path name for the executable file is not included, because C:\accounting is specified as the working directory. Entering rawdata.wk1 in the **Command-Line Parameters** field causes Excel to open a file called rawdata.wk1 for its incoming data when the capsule application runs. Also note that the IDS icons, Spreadsheet and Plot, are not mentioned by name on either the Global or capsule pages of the Icon Options window.

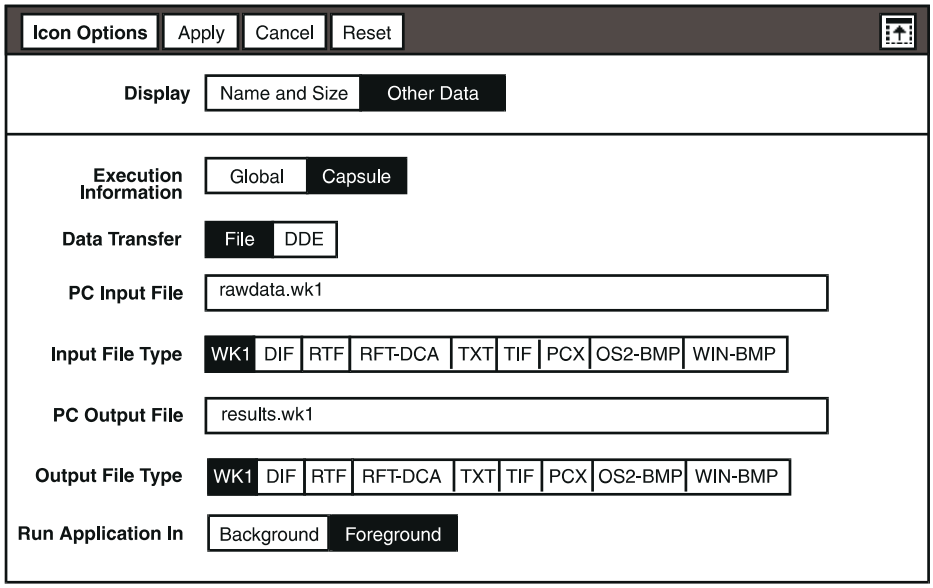


Figure 5. Sample Icon Options window: Capsule page

Figure 5 shows the names of the input and output files Excel uses when processing the data. The correct file extensions are included, and the **Input File Type** and **Output File Type** fields are both set to **WK1**. The **Run Application In** field is set to **Foreground**, because the user needs to interact with Excel to save the file and quit Excel when the data processing is completed.

Setting the DDE Options

To set the DDE options:

Set the **Transfer Type** field to **Automatic** or **Manual**.

- **Automatic** causes the application to choose the best file formats for working with your data sources.
- **Manual** enables you to select file formats for the data being read and written by the application.

If you selected **Manual**, set the desired file formats in the **Input Data Type** and **Output Data Type** fields.

Consult Table 3 on page 27 and Table 4 on page 27 to see which IDS tools your workstation application can exchange data with while running in a capsule application using DDE.

Table 3. IDS tools that can import DDE data from various applications

IDS tool	Excel for OS/2	Excel for Windows	Lotus 1-2-3 for OS/2	Lotus 1-2-3 for Windows	Word for Windows
Text	X	X	X	X	X
Spreadsheet	X	X		X	
Plot	X				
PC Directory	X	X	X	X	X

Table 4. IDS tools that can export DDE data to various workstation applications

IDS tool	Excel for OS/2	Excel for Windows	Lotus 1-2-3 for OS/2	Lotus 1-2-3 for Windows	Word for Windows
Text	X	X	X	X	X
Spreadsheet	X	X	X	X	X
PC Directory	X	X	X	X	X

Specifying an Input or Output Region

DDE data transfers in a capsule application can occur only to or from a region of a spreadsheet or document. To specify an input or output region for DDE data transfers in a capsule application:

1. Create a named region in the data file. If the region is in a workstation data file (for example, if it is in an Excel or Lotus 1-2-3 spreadsheet), consult the table following this procedure to make sure the region is supported by IDS.
2. In the PC Application icon's Icon Options window, set **Data Transfer** to **DDE**.
3. Open the appropriate Arrow Options window in the capsule application.
4. Select **Other** in the **Source Area** or **Destination Area** field.
5. In the **Region Name** field that opens, enter the relevant region name.

Table 5 on page 28 shows the DDE-region-support IDS provides for various applications.

Table 5. IDS support for DDE regions by application

Application	Supported regions
Excel for OS/2	row, column, formula
Excel for Windows	row, column, formula
Lotus 1-2-3 for OS/2	row, column, range
Lotus 1-2-3 for Windows	row, column, range
Word for Windows	bookmark

Transferring regions to a PC Application icon, where the input file is a WK1 file, is not supported.

See the *Capsule User's Guide* for detailed information about using regions in capsule applications.

Chapter 5. Using the PC Interaction Tools in a Capsule Application

This chapter describes the use of the following types of icons in capsule applications:

- Clipboard
- PC Directory
- PC Application

For general information about creating capsule applications, see the *Capsule User's Guide*.

If you mail a capsule containing a PC Directory icon or a PC Application icon to someone else, or if you log on to your desktop using a different workstation, the path information for files and applications might need to be updated for the capsule to work.

Using the Clipboard in a Capsule Application

The advantage of using the Clipboard icon in a capsule application is that you can write data to the clipboard and subsequently retrieve that data in another part of the processing sequence.

This advantage exists because the Clipboard icon represents a reference to a single global resource.

The disadvantage is that there is no protection from concurrent access. So, when you use a Clipboard icon in a capsule application, you must be aware that other applications can be accessing the same global resource. When you run a capsule application that contains a Clipboard icon, allow the processing sequence to finish before trying to access the clipboard from your desktop. Otherwise, you can delete data being transferred to the clipboard.

When used in a capsule application, you connect Clipboard icons to source and destination icons with arrows. See the *Capsule User's Guide* for more information about running capsule applications.

Using PC Directory in a Capsule Application

When using the PC Directory icon in a capsule application, you can frequently specify either a file name or a specific region in a file as the source or destination of the data you are transferring.

This section contains information to help you respond to the **Source Area** and **Destination Area** fields that appear at the bottom of the Capsule Arrow Options window, as shown in the following illustration.

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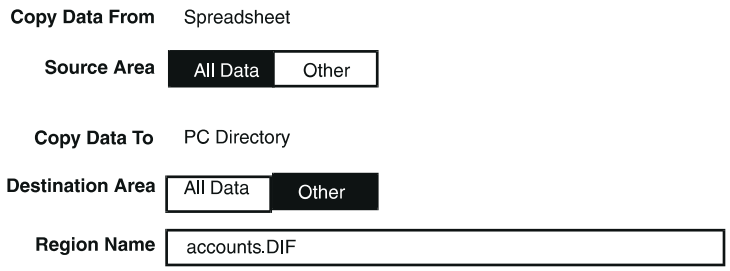


If you select **Other** in either the **Source Area** or **Destination Area** fields, you can then enter a region or file name in the**Region Name** field. If you cannot specify a source or destination for a particular type of data transfer, the **All Data** and **Other** choices are not shown in the Arrow Options window.

General rules for transferring data out of an IDS icon into a PC Directory icon:

The destination file-name extension you specify in the Arrow Options window must match the current extension mapping options and export choices set in the PC Directory tool.

The settings in the File Controls window of the PC Directory tool must allow for the destination file to overwrite or rename an existing file if there is a naming conflict.

General rules for transferring data out of PC Directory into an IDS icon:

The source file-name extension you specify in the Arrow Options window must match the current import choices set in the PC Directory tool.

If you have specified a destination region, the source file name extension must match the type of region specified. For example, a source file with the extension PCX can only be transferred into a graphic region.

As always when entering file names, you must be sure to follow the rules that apply to your operating system. For example, HPFS is case sensitive. When entering a file name, you must be sure to include the correct three-letter extension. If you are copying data to a diskette, make sure the diskette is not write-protected.

Source and destination files must be closed to be accessed by PC Directory.

Using PC Directory with a Spreadsheet Icon

When using the PC Directory tool to copy data from a Spreadsheet icon, the acceptable destination file formats you can specify in the Arrow Options window are DIF, WK1, and TXT. If you specify DIF or TXT, you can use**All Data** or a region as the source. If you specify WK1, you must use **All Data**.

When copying data to a Spreadsheet icon, a field called **Source Data Should** appears in the Arrow Options window. For information about the choices in this field, see the *Spreadsheet User's Guide*.

Using PC Directory with a Text Icon

When copying a Text icon to a PC Directory icon, the following rules apply:

You can copy text to an RFT, RTF, or TXT file by specifying **All Data** or a text region as the source in the Capsule's Arrow Options window. Even if you specify **All Data**, only the text content of the icon is copied, not the graphics.

You can copy a graphic region from a Text icon to a PCX, TIF, BMP, or OS/2 file.

When copying data from a PC Directory icon to a Text icon, the following rules apply:

RFT, RTF, and TXT files are acceptable text sources. You can copy data from these sources using **All Data** or a text region as the destination in the Arrow Options window.

PCX, TIF, BMP, and OS/2 files are acceptable graphics sources. You can copy data from these sources using **All Data** or a graphic region as the destination.

Using PC Directory with a Plot or Screen Capture Icon

When copying a Plot or Screen Capture icon to a PC Directory icon, you can use PCX, TIF, BMP, and OS/2 files as destinations in the Capsule's Arrow Options window.

Data cannot be transferred into a Plot or Screen Capture icon using PC Directory.

Using the PC Application Icon in a Capsule Application

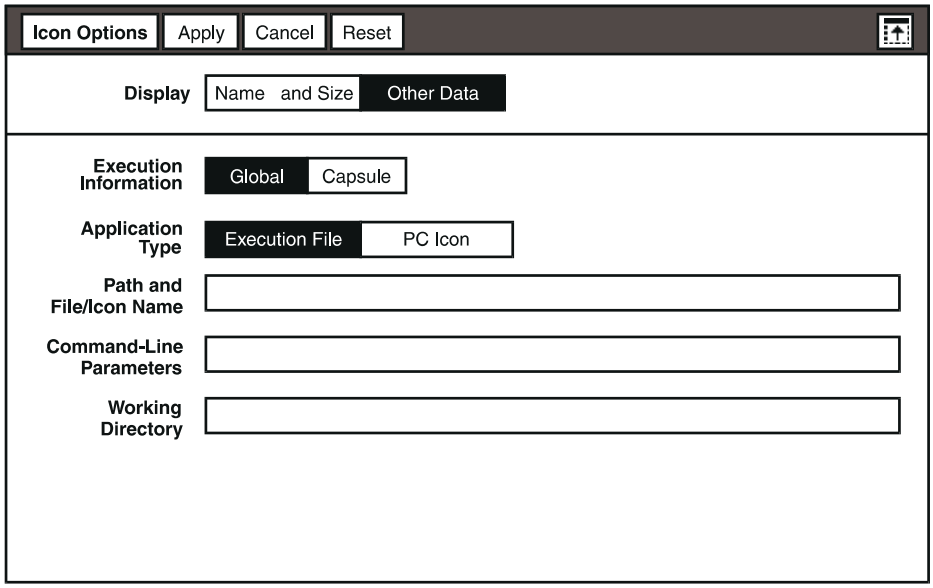
Two methods exist for transferring data into and out of your PC Application icon when it is running in a capsule application: file and DDE.

When you transfer data as files, you can use data from any application that supports the PC Application data formats.

When you transfer data using the DDE method, the advantage is that you can import regions of data as well as complete files. The limitations that IDS supports only some of the DDE-enabled products. See Table 6 on page 34 and Table 7 on page 34 for information about which IDS tools can exchange specific data formats with which workstation applications.

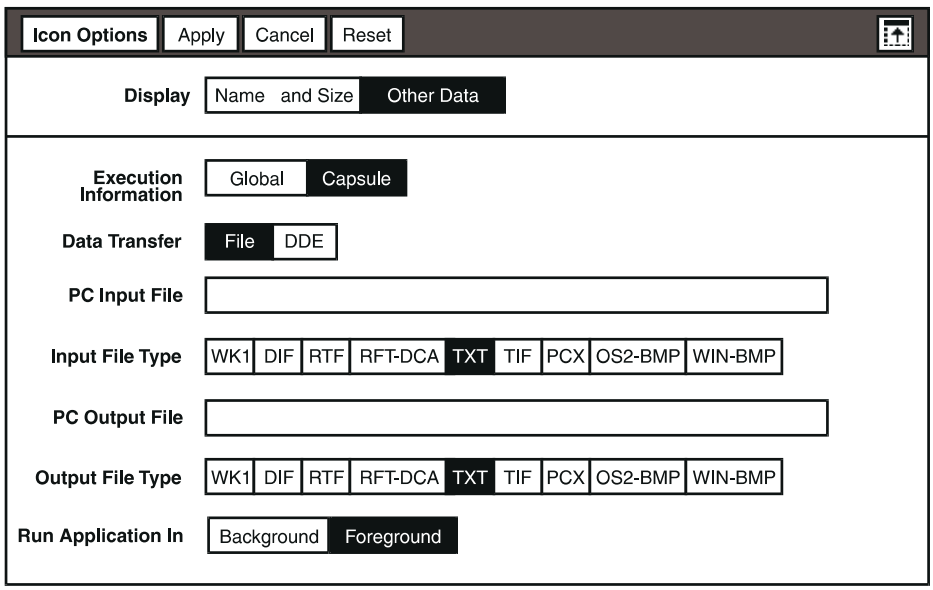
To set up a PC Application icon for use in a capsule application:

Open the PC Application icon's Icon Options window and select **Other Data** as the **Display** option. Notice that the **Execution Information** field is set to **Global.**



Enter information as described in “Specifying an Application to Start” on page 19.

Set **Execution Information** to **capsule**.



Select **File** or **DDE**in the **Data Transfer** field.

You can run a PC Application icon as a stand-alone icon (not connected to other icons with arrows) from within a capsule. If you choose to do this, you do not need to fill in the fields under **File** or **DDE**.

To set the File options:

1. In the **PC Input File** field, enter the name of the workstation file that contains the data to be worked on by the workstation application. Be sure to include the file's extension.

   This file can be created automatically by the workstation application if you enter an appropriate command in the **Command-Line Parameters** field.

2. Select the correct format for the incoming data file in the **Input File Type** field. The correct file type might match the file's extension, but not necessarily.

3. In the **PC Output File** field, enter the name of the workstation file you want the data to be placed in after it has been worked on by the workstation application. Be sure to include an extension.

   This file must exist prior to running the capsule or be created by a macro in the workstation application.

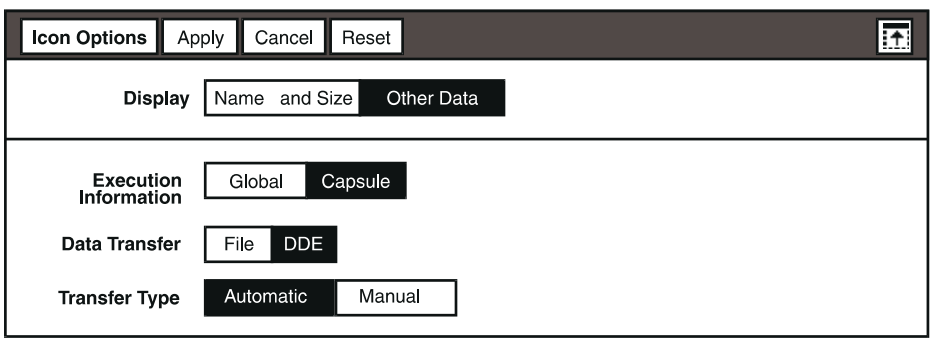
4. In the **Output File Type** field, select a format for your new workstation data file.

5. Set the **Run Application In** field.

   Use the **Foreground** choice if you know your workstation application requires you to enter any information while it is running. Otherwise, select **Background** so that you can use other workstation applications while your capsule is running.

To set the DDE options:

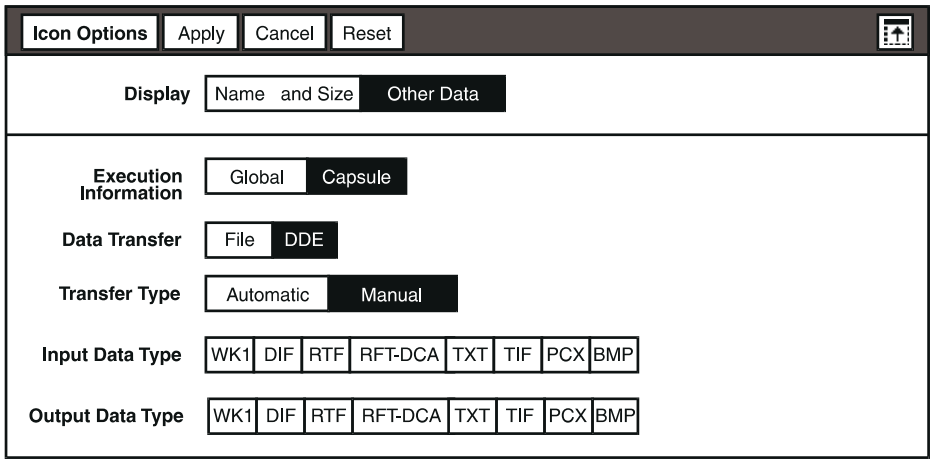
1. Set the **Transfer Type** field to **Automatic** or **Manual**.



Automatic causes the application to choose the best file formats for working with your data sources.

Manual enables you to select file formats for the data being read and written by the application.

2. If you selected **Manual**, set the desired file formats in the **Input Data Type** and **Output Data Type** fields.



Consult the following two tables to see which IDS tools your workstation application can exchange data with while running in a capsule using DDE.

Table 6. IDS tools and icons that can import DDE data from various applications

IDS tool or icon	Excel for OS/2	Excel for Windows	Lotus 1-2-3 for OS/2	Lotus 1-2-3 for Windows	Word for Windows
Text	X	X	X	X	X
Spreadsheet	X	X		X	
Plot	X	X			
PC Directory	X	X	X	X	X

Table 7. IDS tools and icons that can export DDE data to various workstation applications

IDS tool or icon	Excel for OS/2	Excel for Windows	Lotus 1-2-3 for OS/2	Lotus 1-2-3 for Windows	Word for Windows
Text	X	X	X	X	X
Spreadsheet	X	X	X	X	X
Plot	X	X		X	X
PC Directory	X	X	X	X	X
Screen Capture	X	X		X	X

To specify an input or output region:

1. Name the region in the data file.

2. In the PC Application icon's Icon Options window, set **Data Transfer** to **DDE**.
3. If the region is in a workstation data file, make sure the region type of that file matches one of the options listed in the following table.

Table 8. DDE region support

Application	Supported regions
Excel for OS/2	row, column, formula
Lotus 1-2-3 for OS/2	row, column, range
Word for Windows	bookmark
Excel for Windows	row, column, formula
Lotus 1-2-3 for Windows	row, column, range

1. Open the appropriate Arrow Options window in the capsule application.
2. Select **Other** in the **Source Area** or **Destination Area** field.
3. Enter the desired region name in the **Region Name** field.

See the *Capsule User's Guide* for more information about using regions in capsule applications.

Using @-Variables

You can use @-variables in the fields of the PC Application icon's Icon Options window to specify file names and directories. For more information about using @-variables, see the *Capsule User's Guide*.

Appendix A. Text Conversion Limitations

This appendix disscusses the limitations of converting an IDS Text file to RTF and converting an RTF file to the IDS Text format.

Limitations on RFT-to-Text Conversion

The following list describes the limitations of the RFT-to-Text conversion process.

The DCA carrier-return character (equivalent to the Text tool's new line character), page-end, subscript, and superscript characters are not translated.

The DCA required-carrier-return character (equivalent to the Text tool's new paragraph character) is translated into a new paragraph character.

The DCA auto-outline control sequence is translated correctly only when its default values are used.

The DCA required-page-end character is translated into a new page character; it is not adjusted during pagination.

Characters that cannot be translated appear as block characters (n) in the Text window or are discarded.

Some Symbol characters are not translated. These characters include:

Fonts are translated as shown in the following table.

Table 9. DCA font to Text font translations

DCA font	Text font
GFID 1-79	Fixed 12
GFID 80-220	Fixed 16
GFID 221-255	Fixed 20
All others	Fixed 16

Headers and footers that are the same for all pages are always flush left. Headers and footers that differ on odd- and even-numbered pages are not translated. A maximum of 99 header or footer characters are converted. If the header or footer contains more than 99 characters, the remaining characters are not transferred. Multi-line headers and footers are translated as one line.

Page numbers are always flush right.

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Tab stops might be in different positions from the original document and some text lines might be broken into two lines. You can manually correct the tab settings in the Text window.

Footnote parameters cannot be translated.

Limitations on Text-to-RFT Conversion

The following list describes the limitations of the Text-to-RFT conversion process.

All Text icon fonts (except the Symbol font) are translated to the default font of GFID 26, which is a 10-pitch fixed font.

Some Symbol font characters are not translated. These characters include:

≤, ,≠,∞,`,©,†,‡, , ,×,÷, and

Symbol characters that are not translated do not appear in the PC.RFT file.

Bold, underline, and overstrike formats are converted, but italic and double underline typeface formats are not converted.

All **Lines in Paragraph** option settings are translated as 6 lines per inch.

Tab stops might be in different positions from the original Text document and some text lines might be broken into two lines.

New paragraph characters are translated as required carrier return characters.

A Text icon paragraph is divided into two paragraphs if the margin control setting for **Line 1** is different from the setting for **Other Lines** in the Text Options window. First and second lines might line up incorrectly when printed. If the text alignment in the Text icon is justified in these cases, the first line of the resulting document will not be justified; additional lines will be justified.

Appendix B. Spreadsheet Conversion Limitations

The conversion capabilities in PC Directory can convert only WKS, WK1, and WRK file types. The PC.WK1 data format icon always shows WK1 in the icon depiction, even when the file name extension is WRK or WKS.

All Lotus 1-2-3 files in the .WK3 and .WK4 formats must be converted to a .WK1 format to be usable in IDS tools.

Using the Translation Log

Upon conversion, either through the PC Directory icon or moving data to a PC.WK1 data icon, a Logs folder appears on your desktop. The Translation Log is a capture document that provides an explanation of problems or changes that occurred during the data translation. If there is any information that cannot be converted, it is recorded in the Translation Log. The Translation Log is named after the original spreadsheet, with the date and time of the conversion appended.

Understanding the Conversion Limitations

The conversion process imposes certain size and function limits on the spreadsheet. These limits are described below.

Spreadsheet Size

A very large workstation spreadsheet might be only partially translated. You can usually translate a spreadsheet of 5,000 to 10,000 cells, depending on the size of the cell.

Region Copy/Move Control Setting Changes

In the Spreadsheet icon, the region Copy/Move Controls window options are set to **Values**, **Formats**, and **Formulas**. The default in a blank Spreadsheet is **Values** and **Formats** only. You can also set these options for spreadsheet regions using the Spreadsheet Options window and the capsule tool's Arrow Options window.

Date Inconsistencies

A few inconsistencies exist in the handling of dates between Lotus spreadsheets and the Spreadsheet tool.

Dates before March 1, 1900 (day 61) translate incorrectly (they are off by one day) due to a difference in the way that Lotus and IDS handle date calculations. Lotus calculates February 29, 1900, which was not a leap year.

Lotus spreadsheets and the Spreadsheet tool compare text strings differently. Lotus cannot compare a text string with a number. The Spreadsheet tool can compare a text string with a number and returns an evaluation of either True or False. For example, the formula `1 ='ten'` returns ERR in a Lotus spreadsheet. When the formula is translated into a Spreadsheet icon, the result is False.

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If the functions day, month, and year take numeric arguments, it is necessary to add a conversion factor because Lotus spreadsheets use a different day zero than the Spreadsheet tool. For example, @day(12345)=18 in Lotus translates to datenum(((12345)-25569),day) in the Spreadsheet tool.

Formula Size Differences

The Spreadsheet tool allows a maximum of 100 characters for a formula, while Lotus 1-2-3 allows 2,048 characters. For this reason, some formulas are not translated because they are too large. When the Spreadsheet Translator tool encounters a large formula, it records the cell in the Translation Log window and includes the original Lotus formula to help you rebuild it in the Spreadsheet cell.

Header and Footer Inconsistencies

A few inconsistencies exist in the handling of headers and footers between the Lotus spreadsheet and Spreadsheet.

All headers and footers are translated flush left, with a maximum of 100 characters.

Lotus has special embedded commands that signal the printing of dates and page numbers, similar to the @date variable used in Text icon headers and footers. These commands are translated as text strings.

Function Inconsistencies

A function that does not get translated is listed in the Spreadsheet cell and highlighted with two asterisks; for example, SIN. For functions that do not get translated, you must print a list of the Lotus 1-2-3 or Symphony spreadsheet formulas to reconstruct them in the Spreadsheet tool.

Table 10 lists each Lotus function along with an explanation of its translation.

Table 10 (Page 1 of 5). PC.WK1-to-Spreadsheet conversion translations

Lotus function	Translation in Spreadsheet
#AND#	Translates to the and expression
#NOT#	Translates to the not expression.
#OR#	Translates to the or expression.
string|string	Translates to the concat function.
@@	Does not translate.
@ABS	Translates to the abs function.
@ACOS	Does not translate.
@ASIN	Does not translate.
@ATAN	Does not translate.
@ATAN2	Does not translate.
@AVG	Translates to the average function.
@CELL	Does not translate.

Table 10 (Page 2 of 5). PC.WK1-to-Spreadsheet conversion translations

Lotus function	Translation in Spreadsheet
@CELLPOINTER	Does not translate.
@CHAR	Does not translate.
@CHOOSE	Does not translate.
@CLEAN	Does not translate.
@CODE	Does not translate.
@COLS	Does not translate.
@COS	Does not translate.
@COUNT	Translates to the count function.
@CTERM	Translates to an equivalent arithmetic expression. For example, @CTERM(B1,B3,B2) translates to ln((b1)/(b3))/ln(1+(b2)).
@DATE	Translates to the datebuild function.
@DAVG	Does not translate.
@DATEVALUE	Translates to the Spreadsheet date function. Depending on the format of the date string in the Lotus spreadsheet, the formula might translate incorrectly. Check the cell for an error. For example, @DATEVALUE('15-May-88') translates to date('15-May-88'), which returns Error because the hyphenated format is not acceptable for calculations in Spreadsheet dates.
@DAY	Translates to the datenum function. For example, @DAY(B10) translates to datenum(b10,day).
@DCOUNT	Does not translate.
@DDB	Does not translate.
@DMAX	Does not translate.
@DMIN	Does not translate.
@DSTD	Does not translate.
@DSUM	Does not translate.
@DVAR	Does not translate.
@ERR	Does not translate.
@EXACT	Converts to the exact function.
@EXP	Converts to the exp function.
@FALSE	Converts to the false function.
@FIND	Converts to the find function.
@FV	Converts to the fv function.
@HLOOKUP	Converts to the hlookup function.
@HOUR	Translates to the datenum function. For example, @HOUR(B10) translates to datenum(b1 ,hour,day).
@IF	Translates to the if expression.

Table 10 (Page 3 of 5). PC.WK1-to-Spreadsheet conversion translations

Lotus function	Translation in Spreadsheet
@INDEX	Does not translate.
@INT	Translates to the int function.
@IRR	Translates to the irr function. Since the. Lotus function requires two arguments, a correction is included for the Spreadsheet function so that only the second argument is used.
@ISERR	Translates to the error expression. For example, @ISERR(v6) translates to error=v6.
@ISNA	Translates to the na expression. For example, @ISNA(v6) translates to na=v6.
@ISNUMBER	Does not translate.
@ISSTRING	Does not translate.
@LEFT	Translates to the left function.
@LENGTH	Translates to the len function.
@LN	Translates to the ln function.
@LOG	Translates to the log function.
@LOWER	Translates to the case function with the L argument, for lower-case. For example, @LOWER(F1) translates to case(f1,'L').
@MAX	Translates to the max function.
@MIN	Translates to the min function.
@MINUTE	Translates to the datenum function. For example, @MINUTE(B10) translates to datenum(b1 ,minute,hour).
@MOD	Translates to the mod function.
@MONTH	Translates to the datenum function. For example, @MONTH(B10) translates to datenum(b1 ,month,year).
@N	Does not translate.
@NA	Translates to the na function.
@NOW	Translates to the now function with the second argument. For example, @NOW translates to now(second).
@NPV	Translates to the npv function, but always returns an error. You must insert the initial investment value in the cash flow region of the Spreadsheet, adjust the region size, and delete the ** from the formula. For example, @NPV(rate, range of future payments) would translate to npv(rate, range of future payments) where range of future payments might be the cell references d7,d8,d9. After editing, it would appear as npv(rate, range of future payments), where rate is a value or cell reference and range of future payments is a region that contains the investment (as a value or cell reference) and the cell references d7:d9. For more information about the npv function, see the *Spreadsheet User's Guide*.

Table 10 (Page 4 of 5). PC.WK1-to-Spreadsheet conversion translations

Lotus function	Translation in Spreadsheet
@PI	Translates to the number 3.14159265.
@PMT	Translates to an equivalent arithmetic expression. For example, @PMT(B1,B3,B2) translates to ((b19) (b18)/(1-(1+(b18))⅛-(b21))).
@PROPER	Translates to the case function with the I argument, for initial capitalization. For example, @PROPER(F1) translates to case(f1,'I').
@PV	Translates to the pv function.
@RAND	Translates to the random function.
@RATE	Does not translate.
@REPEAT	Translates to the repeat function.
@REPLACE	Translates to the edit function with the arguments rearranged.
@RIGHT	Translates to the right function.
@ROUND	Translates to the round function.
@ROWS	Does not translate.
@S	Does not translate.
@SIN	Does not translate.
@SECOND	Translates to the datenum function. For example, @SECOND(B10) translates to datenum(b1 ,second, minute).
@SLN	Translates to an equivalent arithmetic expression. For example, @SLN(B1,B3,B2) translates to (((b2)-(b19))/(b21)).
@SQRT	Translates to an equivalent arithmetic expression. For example, @SQRT(B1) translates to if((a35)> ,(a35)⅛.5,error).
@STD	Translates to the std dev function.
@STRING	Translates to the string function.
@SUM	Translates to the sum function.
@SYD	Does not translate.
@TAN	Does not translate.
@TERM	Translates to an equivalent arithmetic expression. For example, @TERM(B1,B3,B2) translates to ln+(1+((b2) (b18)/(b21)))/ln(1+(b18)).
@TIME	Translates to the timenum function. For example, @TIME(B10,B11,B12) translates to timenum(b1 ,b11,b12).
@TIMEVALUE	Does not translate.
@TODAY	Translates to the now function with the second argument. For example, @TODAY translates to now(second).
@TRIM	Translates to the clean function.
@TRUE	Translates to the true expression.

Table 10 (Page 5 of 5). PC.WK1-to-Spreadsheet conversion translations

Lotus function	Translation in Spreadsheet
@UPPER	Translates to the case function with the U argument, for upper-case. For example, @PROPER(F1) translates to case(f1,'U').
@VALUE	Translates to the val function.
@VAR	Translates to the variance function.
@VLOOKUP	Converts to the vlookup function.
@YEAR	Translates to the datenum function. For example, @YEAR(B10) translates to datenum(b1 ,year).

Appendix C. Working with PC Data Icons

For the most part, you can transfer data between your workstation file system and your developer's desktop by simply copying files from the PC Directory window to your desktop and copying IDS icons into the PC Directory window. But if you have an older capsule application, it might use a PC Data icon as an intermediary.

The following table lists all the available PC Data icons.

PC Data icon name	Type of support provided
PC Graphics	Bit-map graphics
PC.BIN	Binary code files or non-determined format
PC.DIF	Tabular Data Interchange Format primarily used for spreadsheets
PC.RFT	Revisable Form Text
PC.RTF	Rich Text Format
PC.TXT	Simple ASCII files
PC.WK1	WK1 table format primarily used for spreadsheets

The PC Graphics icon is a new PC Data icon. It enables you to transfer bitmaps between IDS icons or between an IDS icon and a workstation file, both interactively and in a capsule application.

To copy a graphics file from the workstation file system into IDS:

1. Open the PC Directory tool.
2. Select **Show Conversion Controls** from the Special menu.
3. In the Conversion Controls window, select **File Import** in the **Display** field.
4. Set the appropriate field to PC Graphics.

   For example, if the file you are importing is a PCX file, set the **From PCX to** field to **PC Graphics**.
5. Close the Conversion Controls window.
6. In the PC Directory window, select the graphics file to transfer.
7. Copy the file to your developer's desktop.

To copy graphics from a Text document for use on your workstation file system:

1. Open the Text document.
2. Select the graphics region.
3. Copy the region onto a PC Graphics icon.
4. Rename the PC Graphics icon to reflect its contents.

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5. Select **Show Conversion Controls** from the Special menu.
6. In the Conversion Controls window, select **File Export** in the **Display** field.
7. Select the desired bitmap format in the **From Graphics to** field.
8. Close the Conversion Controls window.
9. Copy the PC Graphics file from your developer's desktop into the PC Directory window.

Glossary

ASCII. Acronym for American Standard Code for Information Interchange, a code that assigns numeric values to alphabetic, numeric, punctuation, and certain other characters. ASCII was developed to enable information interchange among data processing systems, data communication systems, and associated equipment.

ASCII file. A file that contains only characters coded in ASCII. Also referred to as text file, text-only file, and ASCII text file.

batch file. A DOS or OS/2 file that contains a list of commands that are processed sequentially as a set. The file-name extension BAT identifies a DOS batch file, and the file-name extension CMD identifies an OS/2 batch file (also known as a command file).

BIN. A file-name extension indicating that the file is stored in a binary format (a format that can be read by machines and is unintelligible to humans). See also binary file.

binary file. A file that contains machine-readable data that is unintelligible to humans.

bitmap. An image stored as an arrangement of bits on a grid.

BMP. A file-name extension indicating that the file is stored in a bitmap format.

clipboard. A temporary storage location used by workstation applications to share data.

Clipboard. A tool used to exchange data between IDS tools and the clipboard used by workstation applications.

DDE. Dynamic data exchange.

DIF. (1) Data Interchange Format, a spreadsheet file format. (2) A file-name extension indicating that the file is stored in DIF format.

directory. A collection of files stored under one name on a disk.

dynamic data exchange. A feature available in the Microsoft Windows and OS/2 environments that enables application programs to request and exchange data automatically.

executable file. A workstation file that contains computer-readable code used to start and run an application (program). Executable file names have one of the following extensions: .EXE, .COM, .BAT, or .CMD.

file format. The structure of information in a workstation file. File-name extensions are often used to identify a file's format. For example, PCX identifies a particular kind of graphics format and WK1 identifies a particular kind of spreadsheet format.

file-name extension. Three letters at the end of a file name. A file-name extension is preceded by a period and usually identifies the kind of information in the file. For example, in the file name AUTOEXEC.BAT, the extension is BAT, which indicates that the file is a batch file. See also batch file.

path name. A designation for the location of a file or icon.

PC Application. A tool used to start OS/2, DOS, and Windows programs directly from the developer's desktop or to use such programs in an IDS capsule application.

PC.BIN. An IDS icon that can store a binary file.

PC Data Icons. A file folder in the *Blank Icons file drawer that holds the PC Directory icon and the icons (such as PC.TXT and PC.RFT) that can store data in standard workstation file formats.

PC.DIF. An IDS icon that can store a DIF file.

PC Directory. A tool that provides a window view of the local OS/2 file directory and that can be used to open, close, and sort directories and to move or copy files between the OS/2 file system and the developer's desktop.

PC.RFT. An IDS icon that can store an RFT file.

PC.RTF. An IDS icon that can store an RTF file.

PC.TXT. An IDS icon that can store a TXT file.

PC.WK1. An IDS icon that can store a WK1 file.

PCX. (1) A bitmap file format supported by some graphics applications. (2) A file-name extension indicating that the file is stored in PCX format.

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RFT. (1) IBM Revisable Form Text, a text file format. (2) A file-name extension indicating that the file is stored in IBM Revisable Form Text format.

RTF. (1) Rich Text format, a workstation file format that supports formatted text and graphics. (2) A file-name extension indicating that the file is stored in Rich Text format.

root directory. The first directory on a disk drive. In the OS/2 system, the root directory is designated by a back-slash (\). For example, C:\ designates the root directory for drive C.

TIF. A file-name extension indicating that the file is stored in TIFF format.

TXT. (1) A type of file that stores unformatted text (sometimes referred to as an ASCII file). (2) A file-name extension indicating that the file is stored in TXT file format.

WK1. (1) A Lotus 1-2-3 spreadsheet file format. (2) A file-name extension indicating that a file is stored in WK1 format.

working directory. The directory in which the user is currently working. The operating system searches the working directory for a file name that the user enters without specifying a directory name.

workstation application. An OS/2, DOS, or Windows computer program. The terms application and program are often used interchangeably.

IDS Publications

This section lists IDS publications, including order numbers. To order copies of the books listed here, or to get more information about a book, see your IBM representative.

General Publications

Getting Started with the Intelligent Decision Server (SC26-8892)

Working with the Intelligent Decision Server (SC26-8893)

Installation, Configuration, and Administration Publications

Installing IDS LAN Components (GC26-8877)

System Administration Guide and Reference (SC26-8890)

Messages and Codes (GC26-8878)

Database Gateway Services Publications

Installing Database Gateway Services for UNIX Environments (GC26-8884)

Configuring and Administering Database Gateway Services (GC26-8885)

Administering Databases with IDS (SC26-8891)

Host Services Publications

Planning MVS Host-to-LAN Connectivity (GC26-8880)

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Open Data Access Service Publications

Developing Applications with Open Data Access Service (SC26-8888)

Data Access Tools Publications

Browser User's Guide (SC26-8900)

Data Entry User's Guide (SC26-8897)

DBA Tool User's Guide (SC26-8894)

SQL Entry User's Guide (SC26-8898)

Data Analysis Tools Publications

BASIC Tool User's Guide (SC26-8908)

Query User's Guide (SC26-8901)

Spreadsheet User's Guide (SC26-8904)

Presentation Tools Publications

Layout User's Guide (SC26-8902)

Plot User's Guide (SC26-8905)

Reporter User's Guide (SC26-8903)

Text User's Guide (SC26-8896)

Application Development Tools Publications

Transformers Guide (SC26-8907)

Capsule User's Guide (SC26-8906)

Forms Design User's Guide (SC26-8899)

Interacting with PC Applications (SC26-8895)

Installing and Configuring IDS Open Clients (GC26-8889)

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Index

A

Add To 17
Append Columns To 17
Append Rows To 17
Application Type 19
Arrow Options window 16, 30

B

background execution 22, 33
BAT 15
BIN, PC Data icon 44
binary files 15
BMP, clipboard 3, 4

C

capsule
  Arrow Options window 30
  clipboard 29
  DDE support 31
  PC Application @-variables 35
  PC Data icons 29
  PC Directory 29
  regions 31
capsule tool
  Arrow Options window 16
  clipboard 5
  DDE support 21
  PC Application @-variables 21
  PC Directory 16
  regions 21
clipboard
  copying from 4
  copying to 4
  in a capsule 29
  in a capsule application 5
  OS/2 3
  Windows 3
CMD 15
COM 15
Command-Line Parameters 19
conversion options, importing workstation files 10
copy 3
copying files, PC Directory 13
cut 3

D

DDE
  options 26, 33
  support 21, 31
deleting files 10, 12
desktops, switching between 16
Destination Area 16, 30
DIF
  clipboard 3, 4
  PC Data icon 44
  PC Directory 10, 12
directories
  about 1
  setting access in PC Directory 7
  viewing contents 8
Directory Name 7
discarding files 10, 12

E

EXE 15
executable files 1
Execution Info 19
export conversion options 12
exporting IDS files 12, 13
extension mapping
  adding extensions 14
  changing an extension 15
  deleting an extension 15
extensions
  changing 9
  PC Application 19

F

file and path names 2
File Name Options window 9
files
  about workstation 1
  changing names 9
  deleting 10, 12
  discarding 10, 12
  executable 1

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files *(continued)*
exporting from IDS 12
importing from workstation 10
overwriting 12, 13
protecting 10
renaming 12
Focus on Selection 8
foreground execution 22, 33

G

Global 19
graphics, importing and exporting 44

I

import conversion options 10
Input File Name 33
Input File Type 22, 33

M

Minimize 16

O

OS/2 icon settings 21
OS/2, accessing the desktop 16
OS2-BMP 12
Output File Name 33
Output File Type 22, 33
overwriting files 12, 13

P

paste 3
path and file names 2
Path and File/Icon Name 19
PC Application
DDE import and export formats 26, 33
file import and export formats 21, 31
in a capsule 31
in a capsule application 21
OS/2 icon 21
regions 21, 31
setting up icon 19
valid extensions 19
Windows icon 21
PC Data icons 16, 29, 44
PC Directory
copying files to the workstation 13
deleting files 10
discarding files 10
export formats 12
exporting IDS files 12
import formats 10
importing workstation files 10
in a capsule 29
in a capsule tool 16
protecting files 10, 12
sorting 8
specifying a directory 7
workstation application compatibility 27, 34
PC Input File 22
PC Output File 22
PC.BIN 44
PC.DIF 44
PC.Graphics 44
PC.RFT 44
PC.RTF 44
PC.TXT 44
PC.WK1 44
PCX 12
Plot
workstation application compatibility 34
Plot, workstation application compatibility 27
protecting files 10, 12

R

regions
PC Application 34
regions, PC Application 21, 27, 31
renaming files 12
RFT
PC Data icon 44
PC Directory 10, 12
root directory 1
RTF
clipboard 3, 4
PC Data icon 44
PC Directory 10, 12

S

Screen Capture
workstation application compatibility 34
scrolling, Focus on Selection 8

Sort Controls window 8
sorting workstation files 8
Source Area 16, 30
Spreadsheet
  workstation application compatibility 34
Spreadsheet, workstation application compatibility 27
Subtract From 17
switching between desktops 16

T

Text
  workstation application compatibility 34
Text, workstation application compatibility 27
TXT
  clipboard 3, 4
  PC Data icon 44
  PC Directory 10, 12

V

viewing a directory 8

W

WIN-BMP, PC Directory 12
Windows icon properties 21
Windows, accessing the desktop 16
WK1
  clipboard 3, 4
  PC Data icon 44
  PC Directory 10, 12
working directory 19
workstation file name, changing 9

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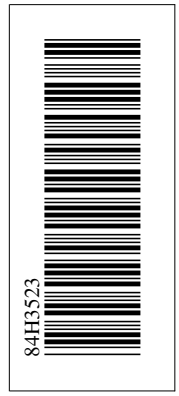

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